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The political economy of the Ganga River : highway of state formation in Mughal India, c.1600-1800

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THE POLITICAL ECONOMY OF THE GANGA RIVER

Highway of State Formation in Mughal India, c. 1600–1800



Murari Kumar Jha

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Cover illustration: Gezicht op de baai van Sultanganj aan de Ganges (View of the riverbank of the Ganga, Sultanganj) drawn by the ship's surgeon, a VOC employee, Nicolaus de Graaff in 1671. COLLBN Port 314 I N 109, © Special Collections, Leiden University Library.

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The Political Economy of the Ganga River

Highway of State Formation in Mughal India, c. 1600-1800

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de graad van Doctor aan de Universiteit Leiden,

op gezag van Rector Magnificus prof. mr. dr. C.J.J.M. Stolker,

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Murari Kumar Jha

geboren te Kahua (Bihar, India)

in 1977

Promotiecommissie

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Dr. H.K. s'Jacob (Rijksuniversiteit Groningen)
Dr. G. Oonk (Erasmus Universiteit Rotterdam)

for my parents

Smt. Shanti Devi and Sh. Chandra Kumar Jha (maan and papa)

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Preface and acknowledgements

Born in the small village of Darbhanga in northern Bihar without proper electricity or roads, I never dreamt of going to New Delhi for higher studies let alone of travelling abroad. Yet if this became possible, in a way it was because of the passion for history that my father (a high school history teacher) succeeded in inculcating. I still remember his fascination for history, not only Indian but also European. He told me many stories from the Greco-Roman world to World War II while ferrying me on his bicycle to the high school located six kilometres from home. In my little village, our only contact with the outside world was the BBC radio's Hindi news bulletin on India and the world affairs which my father made sure that I should never miss. After completing high school in 1991, I was put under the guardianship of my eldest uncle, Krishna Kumar Jha who was a professor of economics at Bhagalpur University. He taught me to dream big and aspire for the apparently impossible. In 1999 when I passed the entrance examination of Jawaharlal Nehru University to pursue my master's degree, I realized that I had paid some heed to what my uncle taught me. At the same time, I was also aware that I had only just embarked on a long and arduous but fascinating journey of historical enquiry.

In Bhagalpur (Sultanganj), our home was barely a kilometer away from the south bank of the Ganga. It was here that I came to know the river more, often took walks along the riverbanks, and perfected my swimming in it. But more than swimming or taking a dip, I often used to dive into the river's past, or at least the past to which the river had been a witness. Relocating to Bhagalpur, more than 230 kilometres to the east and south from Darbhanga also made me feel the contrast between the rather insular and agriculture-based village life of northern Bihar and the relatively better-connected and generally outward-looking approach of the people south of the Ganga. Folk songs and stories that crossed my ears contained grains of history—of merchant boats plying in the river or people exchanging milk for areca-nuts with passing merchants.

Although good work has been done on the ancient and modern periods of South Asian history, for the early modern period writing history from an environmental perspective is still unfashionable. My interest to know about nature and its destructive and constructive potentials dates from my high school years. In 1984, and again in 1987, devastating floods visited northern Bihar and my village was badly affected. For my family and other villagers it was practically an amphibious life for some weeks, and our survival depended on some food and cloth provided by voluntary organizations in a badly coordinated manner. The aftermath of floods was no less scary as crops were already destroyed and it was feared that a cholera epidemic might annihilate the entire

village. Food shortages forced many villagers to migrate to the towns to work in a factory just for survival. My mother used to tell the stories of earlier droughts and how people managed to survive by eating boiled *arhar* (lentils). The mighty earthquake of 1989 in northern Bihar once again drew attention to nature and its destructive potential. To me nature appeared overpowering, yet people managed to find ways and means to survive its vagaries without completely submitting to it.

In this dissertation I have examined how people exploited the natural environment of the Ganga plain. As we will see, since the first millennium BC they have not only survived the caprices of nature, they also succeeded in taming it, in producing surplus food, and in laying the foundations of urban centres and the state. By anchoring firmly on the Ganga River, I will examine how this was possible and how the interactions of people and resources between the drier and humid zones of the plain influenced the process of state formation during the early modern period.

While at Sultanganj, it was hard for me to imagine that barely two hundred years ago the river had not only been a highway of trade and navigation but also sustained the mighty empire of the Mughals. At that time I did not know that one day I would investigate the historical past of the river. However, when the opportunity came my way, it was as if I had been waiting for it all along.

This happened thanks to the Encompass programme initiated and coordinated by Leonard Blussé and the generous fellowship that brought me to Leiden in the summer of 2006. From day one, I knew that it was a great opportunity to learn and benefit from the tradition of historical enquiry set by Jan Heesterman, Dirk Kolff, and André Wink, among others, and to explore the fascinating repository of the VOC archives. But before I could take a PhD at Leiden, it was compulsory to learn the Dutch language and obtain BA and MA/MPhil degrees. My interest in the history of the Ganga was rekindled by the courses offered in the class of Jos Gommans and an MPhil thesis that I wrote with him. If I succeeded in articulating an historical geographic perspective for a history of the Ganga and its political economy sustained by the people of eastern India, credit must go to my mentor, Jos Gommans, who reposed great faith in my ability. The mores of Leiden University do not allow thanking the supervisors, yet I may be allowed simply to state that without Jos Gommans's conscientious and gentle supervision, it would have been impossible for me to complete this dissertation. I owe a great intellectual debt to him for stimulating my thoughts during all these years at Leiden. After the completion of my Encompass fellowship I obtained a PhD fellowship in Germany. But my second supervisor, Leonard Blussé, intervened and advised me to stay. Together with Alicia Schrikker he successfully applied for a PhD scholarship to the Leiden University Fund which enabled me to commence my doctoral research in 2009. After his retirement he continued to take great interest in this research, and promptly read and commented on draft chapters. His insights into parallel historical developments in the Yellow and Yangtze river-plains of China were particularly helpful. Special thanks go to the Leids Universiteits Fonds (LUF) which funded a

three-year position as *Assistent in Opleiding* (AIO), enabling me to complete my doctoral dissertation.

Seven long years stay at Leiden would have been difficult had not it been to the friends and colleagues who made me feel at home. From the very beginning, Alicia Schrikker took care of the students who came to join the Encompass programme, and I was among the lucky beneficiaries of her compassion in spite of my uncouth habits. Marijke van Wissen-van Staden never tired in helping us to settle, and subsequently for every practical need she offered her good office till the finish of this dissertation. Yolande Spaans not only taught the Dutch intensive course, she drove us to her home in Groningen and gave one of our first glimpses of the Dutch countryside, where in the month of August several grazing fields are abuzz with lovely Frisian cows, the famous breed that I knew from my village. René Wesel proved to be a wonderful language teacher during the first year of Encompass programme. Subsequently, Ton Harmsen took over the palaeography classes and helped us in translating the never-ending sentences of the VOC documents. I am grateful to him and his wife, Paula Koning, for their help in transcribing some of the VOC documents. I should also thank Henk Niemeijer, who I happened to meet in New Delhi, for letting me know of an opening in the Encompass fellowship programme.

In the course of writing my dissertation I accumulated huge debt of gratitude for librarians, archivists, scholars, and fellow researchers in the Netherlands, the United Kingdom, and India. Frailty of human memory makes it difficult to enumerate each name, yet my heartfelt thanks go to all of them. Staffs of the Leiden University Library graciously helped me find books and I owe a special word of thanks to Raju Bakker and Dory Heilijgers. Staffs at the KITLV library and Koninklijke Bibliotheek were equally helpful. The National Archives at The Hague is perhaps the most efficient place to read the VOC sources, where the cheerful staffs such as Frank Kanhai, Jairaj Kino, Manoj Seth, Ashfaq *bhai*, and John *bhai*, among others, kept me entertained. Working at the British Library was a pleasurable experience where the staffs at the Asia Pacific and Africa Collections worked with amazing efficiency. I also express my thanks to the staffs at the Cambridge University Library and the Bodleian Library at Oxford. In London, Menka Jha offered the best chicken biryani ever at her home, while Saurabh Mishra drove me to Oxford not only for the library visits but more important for the drinks at his favourite pub. Raisur Rahman, Titas Chakraborty, and Arvind Elangovan gave good company while working at the British Library. In India, the West Bengal State Archives' authorities at Kolkata were very kind to give me permission to use my laptop in the reading room. At the Bihar State Archives, Patna, where the documents are reportedly being catalogued, members of the staff randomly picked some files of the early colonial period for me to read. In Patna the discussions with Hetukar Jha were particularly useful. Pius Malekandathil, Ranabir Chakravarti and Himanshu Prabha Ray were always generous with time whenever I visited them at JNU to discuss about my doctoral research. I also extend my thanks to Yogesh Sharma for his encouragement.

Back in Leiden, the TANAP PhD students Ghulam Nadri, Chris Nierstrasz, Binu John, Liu Yong, Hoang Anh Tuan, Nirmal Dewasiri, and Anjana Singh were always kind enough to offer suggestions and encouragement. I am also thankful to Irfan Ahmad and Niruj Ramanujam for meetings at the Einstein or North End pubs and for discussions on issues other than research. Cynthia Viallé was very kind to help me with decoding certain Dutch words for Japanese gift items mentioned in VOC documents. Bhaswati Bhattacharya kindly shared her own research on the Armenians in early modern India.

I stayed at several houses and shared great times with a variety of housemates in Leiden. The first year at the Encompass house at Nieuwe Rijn 97 will remain memorable. In that house which was originally constructed in the seventeenth century on an ancient branch of the Rhine River, students from Asia and Australia became part of a big family of which Bede Moore, Farabi Fakih, Li Wen, Pham van Thuy, Diantyo Nugroho, Nadia Fauziah Dwiandari, Abdul Wahid, Mawardi Umar, Nilushi Hettiarachchi, and Agus Setiawan were the esteemed members. With the first two, especially, I had loads of fun. At Boerhaavelaan, the budding-astronomer friend Akila Jeelson Daniel made wonderful housemate. While living at the Prinsenstraat house, I had great time with Andreas Weber and Ayola A. Adegnika. While the former has survived his PhD and is thriving as a postdoc untangling the history of Dutch paper making and paper circulation, Ayola is trying his luck to become the president of his home country, Benin. I also have special memories of eating and drinking sessions at the Prinsenstraat house with Job van der Meer, the psychologist who shared experiences of his profession, Weichung Cheng who every now and then refused to smile because he was too busy with a PhD chapter, and Roman Siebertz who was all set to map out the mentality of Safavid Iran. Friends like Shila Schoots, Manilata Chaudhury, Martand Pragalbha, Pim de Zwart, Tom Hoogervorst, Judith Korbee helped in several ways. Carina van de Wetering and Jinna Smit were great family friends whose invaluable support cannot be enumerated.

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admire the skills of Mahmood Kooria who formatted the dissertation and designed its cover page. I thank him for his excellent camaraderie.

A number of scholars commented and criticized some of the chapters that I presented at the Encompass conferences in Mumbai (2010) and Colombo (2011), the conferences at Teen Murti and ICHR in Delhi (2011), the World Economic History Congress at Stellenbosch (2012), and the Leiden-Warwick workshop (2012) at Leiden. I am very grateful to them. I feel indebted to Carl Trocki for sending me his paper on opium, Nira Wickramasinghe and Jan Lucassen for reading and commenting on Chapter 1 and 4 respectively. J. C. Heesterman and D. H. A. Kolff were generous with their time as I told them about the progress of my research and offered their valuable suggestions. I also discussed my research with Om Prakash during his visits to Leiden and benefitted from his suggestions. I acknowledge my intellectual debt to all of them. Job Weststrate was kind to share his own research on the Rhine River, while Birendra Nath Prasad sent his works on early medieval Bengal.

My heartfelt thanks go to Lincoln Paine who painstakingly corrected the English of the dissertation, improved its style, saved me from many factual errors and made some invaluable comments. Andreas Weber and Esther van Gelder kindly helped me translate the summary into Dutch, I specially thank them both.

Had it not been for my parents' (*maan* and *papa*) unflinching love and undiluted faith in me, I would have not been able to complete this dissertation. In their old age, they allowed me to pursue my ambition in a faraway land when they needed me the most. I do not know if I will ever be able to thank them for their sacrifice. I miss my uncle Ganesh Jha (*kaka*) who recently passed away and till the very end kept on enquiring from me about when I would finish my studies and start a *naukari* (job). From Mumbai my uncle Umesh Kumar (*Chhota babu*) never failed to inspire confidence, while both my brothers, Vagish Jha and Rajesh Jha (*bhaiya*) and sisters-in-law Meera Jha and Ruby Jha (*bhaujis*) in New Delhi freed me from the family obligations. I am grateful to my parents-in-law (Gajendra Jha and Kanti Jha) for sparing the time to be in Leiden and freeing me to complete the dissertation when my wife was about to deliver a baby. Ever since Veena joined me at Leiden, her unfailing support as a friend, partner, and loving wife has been of the highest order and she often reluctantly allowed me the long office hours. As soon as I completed the dissertation-writing, Veena gave us the amazing gift of a baby girl, our adorable Yashita, whose smile alone makes me forget the toils of academic research.

A big thank you to Leiden, Encompass and my extended global family for making all this possible!

Glossary

<i>aalu-posto</i>	potato with poppy seeds, a vegetable cuisine of Bengal
<i>abkari</i> opium	excise opium
<i>agni-curn</i>	lit. fire-powder, Sanskrit name for gunpowder
<i>ahar</i>	rain or floodwater conserved in an earthen cistern
<i>altamghadar</i>	holder of revenue-free lands
<i>amalguzar</i>	collector of the land revenue
<i>amberty</i>	cotton textile from Bihar
<i>amil</i>	revenue official
<i>ana</i>	unit of money, sixteen makes one rupee
<i>anupa</i>	marshland
<i>arhar</i>	lentil, produced without need of irrigation
<i>asamiya</i>	petty contractor
<i>ashwamedha</i>	horse sacrifice
<i>atishbaz</i>	firework-maker
<i>avatar</i>	incarnation
<i>bafta</i>	a fine cotton textile
<i>baladiya</i>	transporter and peddler merchant
<i>balsundari</i>	sandy soil
<i>banjara</i>	grain trader cum transporter
<i>bankatai</i>	felling of the jungle
<i>bhadai</i>	quick-growing rice, millet, maize, and jute crops
<i>bhangar</i>	older alluvium
<i>bhaud</i>	type of boat
<i>bhur</i>	sandy patches of land

<i>bigha</i>	a measurement of land ranging from 22,500 to and 27,225 square feet, with considerable regional variations
<i>bildar</i>	earth-workers such as diggers or dike makers
<i>brahmadey</i>	revenue-free grants donated to Brahmans by the king or state
<i>budgerow</i>	type of boat
<i>casset</i>	Dutch rendering of the Persian <i>qaseed</i> meaning, courier
<i>chakravartin</i>	Sanskrit term for a universal ruler
<i>chowki</i>	a customs post
<i>Dakshina Ganga</i>	southern Ganga referring to the Kaveri River
<i>dalal</i>	broker
<i>dam</i>	a unit of money, copper coin, the fortieth part of a rupee
<i>dandi</i>	boatman or rower
<i>darbar</i>	court
<i>darogha</i>	overseer or superintendent, or head of any department.
<i>dastak</i>	pass granting duty-free trade rights
<i>dhose or krine</i>	tool made from a hollowed-out tree trunk for lifting water from a <i>pyne</i> or canal
<i>dhoti</i>	unstitched plain cotton cloth measuring five yards long and worn by Indian men
<i>diwan</i>	revenue minister
<i>diwani</i>	Mughal taxation rights
<i>doab</i>	land between the two rivers
<i>dobara</i>	twice-refined saltpeter
<i>domut</i>	a type of soil mixed with sand and clay
<i>fakhru'l-tujjar</i>	pride of the merchants
<i>farman</i>	royal order normally issued by the Mughal emperor
<i>faujdar</i>	police officer
<i>faujdari</i>	keeping of law and order, with the police functions of a faujdar
<i>fu-shui</i>	happiness-water, referring to Ganga water.
<i>ganasangha</i>	confederacy in later Vedic India

<i>Ganga mata</i>	mother Ganga
<i>Gangadatta</i>	the gift of Ganga
<i>Ganga-putra</i>	son of the Ganga
<i>ganj</i>	grain-market
<i>gerriaal</i>	from the Hindi <i>ghariali</i> for a time-keeper
<i>ghat</i>	a post on the river-bank
<i>ghee</i>	clarified butter
<i>gomashta</i>	a broker or agent who came from a diverse group of merchants and was employed by the European Companies to procure goods
<i>haat</i>	weekly fair
<i>harkara</i>	messenger
<i>hasil</i>	collected land revenue
<i>hoekiel</i>	<i>vakeel</i> or agent
<i>hundi</i>	bill of exchange
<i>ijara</i>	revenue farming
<i>ijaradar</i>	revenue farmer
<i>ijaradari</i>	farming out the land revenue
<i>jagir</i>	the revenue bearing area
<i>jagirdar</i>	holder of revenue-bearing area
<i>jama</i>	assessed land revenue
<i>jangala</i>	dry land of scrubs
<i>jheel</i>	lake
<i>kahar</i>	palanquin carrier
<i>kalmi</i> or <i>dobara-cabessa</i>	saltpeter containing up to 95 percent nitre
<i>kamia</i>	someone of the landless agricultural labour caste
<i>karori</i>	the official who assessed the land under cultivation for revenue collection
<i>kewal</i>	fertile loam
<i>khadar</i>	newer alluvium
<i>khalisa</i>	crown-land

<i>kharif</i>	a crop sown in late summer and autumn and harvested in winter
<i>khesari</i>	chickling-vetch
<i>khoijdrij</i>	<i>koeri</i> , the caste which grew opium
<i>kist</i>	a unit of measure equals to 2 <i>man</i> of 72½ Dutch pounds
<i>kolhu</i>	an oil-pressing mill
<i>kos</i>	<i>kos</i> was a measurement of distance that varied from region to region; the “ <i>kos pakka</i> ” in the Ganga plain measured 3.21 kilometres
<i>kothi</i>	a manufactory or production centre
<i>krsiparasara</i>	extension of agriculture
<i>laken</i>	woollen cloth from the Dutch Republic
<i>lakh</i>	one hundred thousand
<i>lumberdar</i>	primary contractor
<i>madad-i-ma'ash</i>	charitable grant of land
<i>madak</i>	blend of opium smoked along with tobacco
<i>mahajanapada</i>	great country or territory
<i>mahatmya</i>	verse of praise
<i>makara</i>	crocodile, the official vehicle of the goddess Ganga
<i>man</i>	a variable measure of weight; the Patna <i>man</i> weighed 72 ½ Dutch pounds while the Bengal <i>man</i> weighed 68 Dutch pounds
<i>mandi</i>	local market
<i>manjhi</i>	boat-captain
<i>mansabdar</i>	Mughal military rank-holder
<i>mausim</i>	season
<i>muhr</i>	169-grain coin of almost pure gold
<i>naharin</i>	iron blade with which incision was done on poppy balls
<i>naib</i>	deputy
<i>nishan</i>	an order or permit usually issued by a prince of blood
<i>nunia</i>	the caste-members of which worked as saltpeter scrapers
<i>paikar</i>	the local small merchant

<i>Papaver somniferum</i>	poppy
<i>pargana</i>	a fiscal sub-division of several villages
<i>peshkash or nazrana</i>	tribute
<i>phoura</i>	spade, from the Hindi <i>fawra</i>
<i>pion</i>	agent used as a local informant, messenger or militia by the Dutch
<i>pollewaer</i>	Dutch word for <i>pulwar</i> , a type of boat
<i>pond</i>	Dutch unit of weight equivalent to approximately 1.09 lbs. avoirdupois, 0.49 kilogram
<i>posta-dana</i>	ingredient for making cookies and sweet-meats
<i>puckwah and fool-kharee</i>	types of edible salt made from saltpeter
<i>pulbandi</i>	management of the pools
<i>pyne</i>	narrow artificial water channel used for irrigation
<i>qasba</i>	small market town
<i>qaul</i>	a deed of lease
<i>rabi</i>	crops sown in winter and harvested in March-April
<i>rahdari</i>	road tax or transit duty in Mughal India
<i>raiyyat</i>	tenant-farmer
<i>rawana</i>	a pass or permit
<i>rehar</i>	sandy soil
<i>sanyasi</i>	the warrior ascetic
<i>sari</i>	unstitched cotton cloth, plain, printed and painted worn by Indian women
<i>sarkar</i>	revenue district of a Mughal province
<i>seckwaard</i>	a Dutch term that probably refers to the Chakwar of the Bhumihar caste
<i>ser</i>	unit of weight, usually fortieth part of a man
<i>Shakti</i>	goddess representing the female energy
<i>Shorea robusta</i>	<i>sal</i> tree
<i>shroff</i>	money changer
<i>sipahi</i>	sepoy

<i>sipij</i>	tool of iron or sea-shell used for collecting juice from a poppy capsule
<i>soma</i>	intoxicating drink of the Vedic Aryans
<i>sorbet</i>	ice-cooled sweet drinks
<i>stupa</i>	sepulchral mound
<i>suba</i>	province
<i>subadar</i>	viceroy or governor of a province
<i>tacavi</i>	loans given to peasants for cultivation
<i>terai</i>	a belt of marshy grasslands, savannahs and forests
<i>thana</i>	administrative unit or police station
<i>tirtha</i>	pilgrimage
<i>tribeni sangam</i>	the confluence of the triple braid at Prayag, where the Ganga, Yamuna and (invisible) Sarasvati meet
<i>vaidya or hakim</i>	an Ayurvedic or Unani doctor
<i>watan jagir</i>	home-fiefdom
<i>wazir</i>	minister
<i>yakshi</i>	nymph
<i>zamindar</i>	land-holder

Abbreviations

APAC	Asia, Pacific and Africa Collections
BBRP	Bihar and Benares Revenue Proceedings
BL	British Library
BPC	Bengal Public Consultations
BPP	Bengal Past and Present
CSSH	Comparative Studies in Society and History
EEH	Explorations in Economic History
EIC	English East India Company
HM	Home Miscellaneous
ICHR	Indian Council of Historical Research
IESHR	Indian Economic and Social History Review
IHR	Indian Historical Review
IJHS	Indian Journal of History of Science
IOPP	India Office Private Papers
JBRS	Journal of the Bihar Research Society
JESHO	Journal of the Economic and Social History of the Orient
JSAS	Journal of Southeast Asian Studies
JWH	Journal of World History
MAS	Modern Asian Studies
MCC	Middelburgsche Commercie Compagnie (The Middleburg Trade Company)
MHA	Medieval History Journal
NA	Nationaal Archief (National Archives, The Hague)
NBPW	Northern Black Polished Ware, dated between 700 BC and 200 BC
PFR	Patna Factory Records
PGW	Painted Gray Ware culture, dated between 1100 BC and 500 BC
VOC	Verenigde Oostindische Compagnie (Dutch East India Company)
WBSA	West Bengal State Archives
WIC	West-Indische Compagnie (The Dutch West India Company)

Introduction

*Each river is a special little world.*¹

Ganga Empires

Political powers from the Mauryas to the British Raj have exploited the Ganga as a highway of imperial conquest, control, and exploitation. Although the sources on the Mauryas (321–184 BC) do not specifically link the Ganga to empire, the location of the imperial seat at Pataliputra (Patna) speaks of the river's importance as the arterial vein of empire.² A few centuries later, evidence from the Gupta rulers, especially Samudragupta (r. 335–76 AD), is even more explicit about acknowledging the river and equating its waters with imperial fame.³ The river remained the cornerstone of the state-building projects of later rulers, be it with far-reaching imperial ambition of Harsha of Kannauj (r. 606–47 AD), or a more regional orbit of the Palas of Bengal (750–1185 AD).

In the first half of the second millennium AD, Turkish and Afghan conquerors from the semi-arid marches of the northwest set up camp in Delhi and started to use the Ganga to exploit the far more humid and fertile river-plains of Hindustan to their east.⁴ Just like these Delhi Sultans, their Mughal successors could hardly ensure the survival of their empire without exploiting the agricultural resources along the eastern tracks of the Ganga.⁵ Although the first Mughal emperor, Babur (r. 1526–30), failed to completely subdue Bihar in 1529, his son and successor Humayun (r. 1530–40 and 1555–56) marched eastward along the Ganga to consolidate his empire. Mughal expansion encountered serious resistance from the Afghans, who controlled the

¹ Lucien Febvre, *A geographical introduction to history*, in collaboration with Lionel Bataillon, trans. E. G. Mountford and J. H. Paxton (London: Kegan Paul, 1932), 302.

² Kautilya the author of the *Arthashastra*, a monumental Sanskrit work in political economy assumed to have been written in the late fourth and third centuries BC with later additions to the corpus, suggested the worship of the Ganga during the famine; see Kautilya, *The Arthashastra*, ed. and trans. L. N. Rangarajan (New Delhi: Penguin, 1992), 107.

³ John Faithfull Fleet, *Corpus inscriptionum Indicarum, inscriptions of the early Gupta kings and their successors*, vol. 3, *The Gupta inscriptions. Texts and translations* (Calcutta, 1888), 16.

⁴ Peter Jackson, *The Delhi Sultanate: A political and military history* (Cambridge: Cambridge University Press, 1999), 19, 138.

⁵ For Babur's march along the Ganga in pursuit of Afghans, see Babur, *Babur Nama: Journal of emperor Babur*, trans. from the Turkish by Annette Susannah Beveridge, ed. Dilip Hiro (New Delhi: Penguin Books, 2006), 307–309.



Figure 1. Battle on the Ganga in eastern India in the 1570s, source: *The Akbarnama*.

strategic marchlands along the Ganga and had access to the agricultural wealth of the flood plains. One of them, Farid Khan, managed to overthrow the Mughals to become Sher Shah (r. 1540–45), the first ruler of the Sur dynasty. Humayun's defeats at the battles of Chausa and Bilgram (1540) gave a decisive edge to Sher Shah, who now became the undisputed master of the Ganga plain. For obvious logistical reasons, both these encounters occurred close to the banks of the Ganga. On the last occasion, Humayun was able to save his life by swimming across the Ganga on a leather bag given to him by a *visti* (water carrier).⁶ Saved by the river, Humayun survived the Afghan onslaught and successfully reclaimed the empire in 1555. Humayun's successor, Akbar (r. 1556–1605) could hardly delay the conquest of this economic powerhouse of northern India. Hence in the 1570s his army marched along the river and conquered Bihar and Bengal, meanwhile pacifying numerous landed gentry (*zamindars*), partly by making them stakeholders in his empire. Not surprisingly, when the Mughal Empire began to decline in the eighteenth century, the *zamindars* along the eastern tracks of the Ganga became the focus of a renewed process of state formation. This time, the integration of the commercial economy of eastern India with the global maritime economy worked as a catalyst on a long-established, if as yet unarticulated, geopolitical logic. As we shall see in this study, like the *zamindars*, merchants and imperial *jagirdars* (holder of revenue-bearing area) also forged links with the maritime forces, and eventually one of them, the English *Company Bahadur*, was able to lay the foundation of the British Indian Empire on the banks of the Ganga after 1757.

If the Ganga has been such a vital artery in the political life of South Asian empires, how can we explain the silence about this in the historiography? Compared to the Indus River and the civilization that it engendered, scholars have rarely studied economic and political developments with the Ganga as the focal point of their analysis.⁷ So before discussing the historiography that pertains to the present study, I should first broadly frame the Ganga in the *longue durée* of the subcontinent's geography.

⁶ Ishwari Prasad, *The life and times of Humayun* (Calcutta: Orient Longmans, 1955), 134.

⁷ Although several eminent scholars have studied the Ganga plain, they have taken the river for granted and have accorded no historical agency to this geographical entity. For example, see Romila Thapar, *Asoka and the decline of the Mauryas*, 2nd ed. (Delhi: Oxford University Press, 1973), and idem, *Ancient Indian social history: Some interpretations* (New York: Orient Longman, 1978). In the latter work, Thapar refers to a second urbanization in the Ganga valley after the decline of the first Indus civilization in the second millennium BC (p. 37), but she acknowledges the physical importance of the Ganga itself in making possible the irrigation and fertility of the plain, or facilitating the transportation that helped bring about this second urbanization. See also R. S. Sharma, *The state and varna formation in the mid-Ganga plains: An ethnoarchaeological view* (New Delhi: Manohar, 1996); Birendranath Ganguli, *Trends of agriculture and population in the Ganges Valley* (London: Methuen, 1938); Dilip K. Chakrabarti, *Archaeological geography of the Ganga Plain: The lower and middle Ganga* (New Delhi: Permanent Black, 2001). In giving economic agency to the Ganga River, Steven G. Darian remains a notable exception; see his "The Economic Role of the Ganges to the End of Gupta Times," *Journal of Economic and Social History of the Orient (JESHO)* 13:1 (1970): 62–87.

Ganga Longue Durée

The significance of a river in lending identity to a geographic zone is undeniable. It is common knowledge that the name India derives from the Indus River. The Persians and Arabs utilized the river's Sanskrit name, Sindhu, to call the geographical area south and east of the river "the land of/beyond the Indus": Hindustan or simply Hind. Although the civilization supported by the Indus rose, declined, and even disappeared, the region continued to derive its name from that river. On the other hand, while the contribution of the Ganga to the civilization that emerged and flourished on its plain has been far more sustained, although the river has never lent its name to a territory. In the late-fourth century BC, after the Macedonians acquired first-hand geographic knowledge of the subcontinent as a result of Alexander's eastern exploits, the river caught the attention of western geographers. For them the Indian subcontinent *was* the Ganga and they distinguished the subcontinent and the land beyond as *India intra Gangem* and *India extra Gangem*, that is India within the Ganga and India beyond the Ganga.⁸

Despite the geographers' obvious desire for clear, natural demarcations, in political, economic, and cultural terms the river never served as a boundary. Actually the political and cultural forces emerging from the riverbanks tended to bring unity and cohesion. Politically and economically speaking, the rulers that controlled the agricultural resources of the Ganga plain often succeeded in forging an empire that encompassed all the river plains of northern India and sometimes—as in the case of the Mauryas, Guptas, and Mughals—even far beyond. As we shall see in Chapter 1, the river came to constitute a common, almost civilizational reference point for the subcontinent as a whole. Furthermore, from the first millennium onward, the river connected the military potential of the semi-arid zones to its west with the economic clout of the more humid zones in the east. As I will demonstrate in Chapters 2 and 3, this specific connectivity had far-reaching implications for the historical processes in the Ganga plain and even for the Indian subcontinent as a whole.

The natural geographical boundaries of the Indian subcontinent are unique in the sense that these may inhibit contact with the outside world, they never completely insulate the region. While the Hindukush, Karakorum, and Himalaya mountain ranges form the northern boundary, the diamond shaped Indian peninsula appears to be inserted into the Indian Ocean that frames it from other three directions. The northwestern mountain passes—Khyber, Gomal, and Bolan—facilitated migration and movement of people from Central Asia even in prehistoric times. In the early historic period Indo-Aryan speakers, Hunas, Scythians, and others were followed by the Turks, Afghans, and other semi-pastoral nomads, traders, and conquerors who migrated to South Asia. It was because of this accessibility to the region that Victor Lieberman has

⁸ Richard Turner, *A view of the earth, as far as it was known to the ancients: Being a short but comprehensive system of classical geography...* (London, 1779), 39.

called the Indo-Gangetic plains an “exposed zone.”⁹ This follows the work of Jos Gommans, who has argued that South Asia was an integral part of one vast, open “arid zone” characterized by nomadic mobility and post-nomadic forms of state-formation. South Asia’s more intensive connections to this arid zone after circa 1000 AD had important historical implications for the Ganga plain.¹⁰

However, moving across the overland routes of the northwest was not the only avenue for contacts. On the other three sides of the Indian peninsula, the “water frontier” of the Indian Ocean created further opportunities to develop links with the outside world.¹¹ As was the case with migration through the northwestern mountain passes, South Asia’s oceanic frontiers encouraged people to forge contacts with the outside world. Works on the Indian Ocean by K. N. Chaudhuri and M. N. Pearson have shown the Indian peninsula’s connections with the other regions from pre-historic times.¹² Scholars have demonstrated the existence of Buddhist and Brahmanic cultural and commercial networks linking the Bay of Bengal with Southeast Asia in the early centuries AD.¹³ Such long-distance oceanic contacts further evolved and matured during the first and second millennium AD. The evolution in the technology of boatbuilding, increasing geographical knowledge of charting the sea, worldwide population growth, and environmental and economic changes all added to the process of closer contacts between different areas of the world.¹⁴

Although at times rather disruptive, with the continuous flow of fresh ideas, skills, and peoples, these contacts with the outside world have mostly invigorated and enriched South Asian civilization and catalysed its economy. As I will demonstrate in Chapter 2, outsiders’ migration to and settlement on the Ganga plain injected fresh resources into a developing economy and gave rise to the creation of new states. We

⁹ Victor Lieberman, *Strange parallels: Southeast Asia in global context, c. 800–1830*, vol. 2, *Mainland mirrors: Europe, Japan, China, South Asia, and the Islands* (Cambridge: Cambridge University Press, 2009), 92–114.

¹⁰ For the elaboration of the Arid Zone, see the articles by J. J. L. Gommans, “The silent frontier of South Asia, c. A.D. 1100–1800,” *Journal of World History (JWH)* 9:1 (1998): 1–25; “The Eurasian frontier after the first millennium A.D.: Reflections along the fringe of time and space,” *Medieval History Journal (MHJ)* 1:1 (1998), 125–45; “War-horse and post-nomadic empire in Asia, c. 1000–1800,” *Journal of Global History* 2 (2007): 1–21.

¹¹ The term is borrowed from Nola Cooke and Li Tana, ed., *Water frontier: Commerce and Chinese in the lower Mekong region, 1750–1880* (Singapore: Singapore University Press, 2004).

¹² K. N. Chaudhuri, *Trade and civilization in the Indian Ocean: An economic history from the rise of Islam to 1750* (Cambridge: Cambridge University Press, 1985); M. N. Pearson, *The Indian Ocean* (London: Routledge, 2003); Sunil Gupta, “The Bay of Bengal interaction sphere (1000 BC–AD 500),” *Bulletin of the Indo-Pacific Prehistory Association* 25 (2007): 21–30.

¹³ G. Coedès, *The Indianized states of Southeast Asia*, ed. Walter F. Vella and trans. Susan Brown Cowing (Honolulu: University of Hawaii Press, 1968); Robert L. Brown, *The Dvārāvātī wheels of the law and the Indianization of South East Asia* (Leiden: Brill, 1996); Himanshu Prabha Ray, *The winds of change: Buddhism and the maritime links of early South Asia* (New Delhi: Oxford University Press, 1998).

¹⁴ See André Wink, *Al-Hind: The making of the Indo-Islamic world*. Vol. 2, *The slave kings and the Islamic conquest, 11th–13th centuries* (New Delhi: Oxford University Press, 2001); also idem, *Al-Hind: The making of the Indo-Islamic world*, vol. 3, *Indo-Islamic society 14th–15th centuries* (Leiden: Brill, 2004); see also, idem, “From the Mediterranean to the Indian Ocean: Medieval history in geographic perspective,” *Comparative Studies in Society and History (CSSH)* 44:3 (2002): 416–45.

should be aware that as much as Turks and Afghans intensified South Asia's connections with the arid zone after 1000 AD, Europeans did the same with respect to South Asia's connections with the Indian Ocean and beyond after 1500 AD. Not surprisingly, it is exactly during and just after this "middle" period that, more than ever before, the Ganga River gradually evolved as the *sine qua none* of empire, and as such it came fully into its own under the Mughals. It is all the more surprising that although historians of early and modern Indian history have paid some attention to the environmental and ecological factors, works on medieval Indian history have largely ignored this.¹⁵ It is this omission to engage with the natural environment to explain changes in the region's political economy that constitutes the present study's point of departure.

The present work has grown out of frustrated attempts to find a monograph on early modern South Asian history that synthesizes the results of maritime historiography with works written on the different regions of the Mughal Empire.¹⁶ Although scholars working on the regions and the coasts of South Asia acknowledge the importance of both these spheres, their work always privileges one over the other. This seemingly segmented nature of historiography obfuscates a holistic picture underlining the changes in the economy and polity as a result of the interactions between the coast and the interior. Examining the Ganga as a fluvial highway connecting these two zones helps to address this ongoing neglect in the historiography.

Taking a long-term perspective, this study broadly identifies four cycles of state formation, each produced by the river's increased contacts with the outside world. The first cycle overlaps with what scholars have labeled a second wave of urbanization and begins in the first millennium BC. This became possible as a result of the migration and settlement of Indo-Aryan speakers who, from their natural grazing lands, started to develop the agrarian potential of the more humid and fertile river plains along the eastern tracks of the Ganga. The second impetus came with the immigration and

¹⁵ Among his other works, see Dilip K. Chakrabarti, *Archaeological geography of the Ganga plain: The lower and the middle Ganga* (New Delhi: Permanent Black, 2001); and more recently, idem, *The geopolitical orbits of ancient India: The geographical frames of ancient Indian dynasties* (New Delhi: Oxford University Press, 2010); for modern Indian history written from an environmental perspective, see Mahesh Rangarajan and K. Sivaramakrishnan, *India's environmental history* (Ranikhet: Permanent Black, 2012); Madhav Gadgil and Ramachandra Guha, *This fissured land: An ecological history of India* (Berkeley: University of California Press, 1993); Sumit Guha, *Environment and ethnicity in India, 1200–1991* (Cambridge: Cambridge University Press, 1999).

¹⁶ For coast-centred historiography, see Om Prakash, *The Dutch East India Company and the Economy of Bengal, 1630–1720* (Princeton: Princeton University Press, 1985); Susil Chaudhuri, *Trade and commercial organization in Bengal, 1650–1720: With special reference to the English East India Company* (Calcutta: Firma K. L. Mukhopadhyay, 1975); K. N. Chaudhuri, *The trading world of Asia and the English East India Company, 1660–1760* (Cambridge: Cambridge University Press, 1978). For works focusing on the regions of the Mughal Empire, see Kumkum Chatterjee, *Merchants, politics and society in early modern India, Bihar: 1733–1820* (Leiden: Brill, 1996); Richard B. Barnett, *North India between empires: Awadh, the Mughals, and the British, 1720–1801* (Berkeley: University of California Press, 1980); C. A. Bayly, *Rulers, townsmen and bazaars: North Indian society in the age of British expansion 1770–1870* (1983; repr. New Delhi: Oxford University Press, 2002); Muzaffar Alam, *The crisis of empire in Mughal North India: Awadh and the Punjab, 1707–48* (Delhi: Oxford University Press, 1986).

conquests of Turkish warriors from the early second millennium AD, which intensified the trade links between the Ganga River and Central and West Asia and fostered urban and economic development. The third cycle of state formation began when the Mughal emperors tightened their grip on the Ganga, from the sixteenth to the seventeenth century. This was accompanied by the Ganga plain's commercial integration into the global economy. I will argue that at the very height of this integration, the stakes of regional interest groups became so high that they could no longer be controlled from the Mughal imperial capital. Hence the mutual economic and political interests of the regional powers—including the English East India Company—may help to explain why the eastern Ganga plain seceded from the Mughal Empire. In other words, it was the collaboration of regional and maritime forces that ultimately led to the triumph of the English East India Company, ushering a fourth cycle of colonial state-formation based on the rapid development of the new metropole at the Ganga delta: Calcutta.

While the present study retraces the early history of the Ganga River, the main focus is on the historical developments during the so-called Age of Commerce.¹⁷ It seeks to position the economy of the eastern Ganga plain within the early modern global economy, roughly between the sixteenth and eighteenth centuries. In doing so, I hope to synthesize the scholarship on regional and maritime history studying the Ganga as the central highway of the Mughal Empire.

In this study I take the Ganga as a geographic entity to examine the economic and political processes along its banks. This poses a challenge to demarcate the precise region with which the study should concern itself. The terms such as the eastern tracks of the Ganga, the eastern Ganga plain, Bihar, and Bengal have been employed, although the river is always the primary point of reference. Premodern Bengal, like Bihar, constitutes a vague geographical entity with a variety of landscapes, rivers, and routes jumbled together. In a recent essay, Tirthankar Roy has thrown significant light on the problem. Broadly accepting the threefold division articulated in the *Cotton Hand-Book for Bengal* (1862), Roy divides Bengal into three parts: the western uplands, the central alluvial flats, and the southern seaboard. The western uplands were the eastern extension of the central Indian plateau, spread over Bihar and Bengal. Several overland routes passed through these uplands connecting the southern hilly zone of Bihar with Bengal. The central alluvial flats along the Ganga constituted the

¹⁷ According to Anthony Reid, the Age of Commerce in the “lands below the winds” began in the fifteenth century with the expansion of commerce and the emergence of port cities, which heralded the large-scale changes in polity, economy and society. Towards the end of the seventeenth century, according to Reid, the commercial boom and political vitality gave way to the domination of the Dutch East India Company. See Anthony Reid, *Southeast Asia in the age of commerce*, vol. 1, *The lands below the winds*; vol. 2, *Expansion and crisis* (New Haven: Yale University Press, 1988, 1993). In the case of South Asia, the Age of Commerce denotes the period between the sixteenth to eighteenth centuries when the coasts gradually became more important, and the large polities such the Mughal Empire, although centred far away from the coasts, tried to control them. The conquests of Gujarat in 1573, Bihar in 1574 and Bengal in 1576 by the Mughal emperor Akbar should be seen as an attempt to access the wealth of the coastal zones. It was largely through maritime trade that the empire could ensure a regular inflow of bullion, a vital source for managing an agricultural economy and for running the state, its armies, and bureaucracy.

largest and most dynamic area, where commercial and political centres tended to gravitate along the navigable river channel. Roy is not very explicit about the geographical extent of this zone (which probably spread through Bihar and Bengal along the Ganga) apart from observing that the Bhagirathi “provided relatively easy access to the Bay of Bengal in the south and the Mughal Empire in the west.”¹⁸ By the eastern tracks of the Ganga, or the eastern Ganga plain, I refer to the geographic zone that included Patna to the west and Hugli to the east. While analyzing the economic and political processes along the whole Ganga, I draw upon inferences and historical examples from this geographic zone.

Other Gangas

In recent decades scholars have produced fascinating works on economic and environmental history that have provided a fresh understanding of the role of rivers in the making of early modern political economies. Job Weststrate has studied trade and shipping on the Rhine and its distributaries such as the Waal and IJssel between the fourteenth and sixteenth centuries. During this period, the Rhine delta began to emerge as an important commercial zone that maintained trade network with the upriver towns of Germany and France.¹⁹ In the following two centuries, the towns of the delta such as Amsterdam became staple markets for credit and merchandise for all of continental Europe. Similarly, the Ganga delta and the middle reaches of the river also underwent unprecedented economic and commercial change in the seventeenth and eighteenth centuries, a process that gave rise to Patna, Kasimbazar, Hugli, and Dhaka. These “strange parallels,” to borrow Lieberman’s phrase, strongly suggest that economic and social change in the wider parts of Eurasia were brought about by global impulses.

Focusing on Ottoman Egypt and the flood plains of the Nile River, Alan Mikhail has reconstructed an important narrative on natural resource exploitation and environmental change during the “long eighteenth century.” Debates on Ottoman history such as core and periphery, imperial decline in the eighteenth century, and the resource-exploitation by the centralized bureaucratic regime at Cairo have important theoretical implications for the history of the early modern Ganga plain and its relationship with the Mughal Empire. Another significant work by Robert B. Marks focuses on late imperial China and takes an environmental perspective to delineate southern China’s economic and environmental trajectories. Marks explains the economic transformation in the seventeenth and eighteenth centuries by tracking environmental changes and resource exploitation, and furnishes interesting examples

¹⁸ Tirthankar Roy, “Where is Bengal? Situating an Indian region in the early modern world economy,” *Past and Present* 213 (2011): 124–25. See also *Cotton hand-book for Bengal: Being a digest of all information available from official records and other sources on the subject of the production of cotton in the Bengal Provinces*, compiled by J. G. Medlicott (Calcutta, 1862), 29.

¹⁹ Job Weststrate, *In het kielzog van moderne markten: Handel en scheepvaart op de Rijn, Waal en IJssel, ca. 1360–1560* (Hilversum: Verloren, 2008); see also Mark Cioc, “The Rhine as a World River,” in *The environment and world history*, ed. Edmund Burke III and Kenneth Pomeranz (Berkeley and Los Angeles: University of California Press, 2009), 165–90.

from southern China to compare and contrast how people utilized natural resources leading to growing commercialization and changes in the economy and polity in the Ganga plain.²⁰

Like the Rhine, Nile, Ganga, and Yangzi, the deltas of the Irrawaddy, Chao Phraya, Mekong, and Red Rivers also emerged as new centres of wealth and power from the mid-second millennium AD onward. In earlier centuries, polities in Burma, Siam, and Cambodia were centred in the middle or upper reaches of their respective rivers, in relatively dry zones where land could more easily be reclaimed for agricultural extension. If Lieberman and Buckley's climatic reconstruction for Southeast Asia is correct, then the drier climatic conditions in the centuries around 1500 AD would have given people the incentive to colonize the marshes and swamps in the lower parts of the rivers. As a result, to control the agricultural and trade resources the political centres moved downstream, from Pagan to Pegu in Burma, Sukhothai to Ayutthaya in Siam, from Angkor to Phnom Penh in Cambodia, and from Dai Viet to Champa in Vietnam.²¹ As I hope to demonstrate in this study, the Ganga River delta exhibits a more or less similar pattern of resource generation and a shift of political gravity to the coast in the second half of the second millennium AD.

By highlighting the relationship between coast and interior, this study has benefited from the theoretical model advanced by Edward Whiting Fox, whose *History in geographic perspective* contrasts coastal with continental France.²² Both these geographical zones represented different sets of economic and political interests. It is tempting to contrast core areas of the Mughal Empire in Hindustan with the eastern Ganga plain (Bihar and Bengal) as these regions developed distinct political and economic orientations. While the politico-economic system of the land-based empires hinged on the coercive exploitation of agricultural surpluses, the eastern plain was more open to the collaborative or reciprocal exchange of goods. As the European Companies' trade expanded towards the late-seventeenth and early-eighteenth centuries, eastern India became more firmly linked with the global maritime economy. This integration had important implications for the economy and polity of the Ganga plain in the eighteenth century.

²⁰ Alan Mikhail, *Nature and empire in Ottoman Egypt: An environmental history* (Cambridge/New York: Cambridge University Press, 2011); Robert B. Marks, *Tigers, rice, silk, and silt: Environment and economy in late imperial south China* (Cambridge/New York: Cambridge University Press, 1998).

²¹ For the dynamics of state formation along the river in Vietnam during the early centuries of the second millennium AD, see John K. Whitmore, "The rise of the coast: Trade, state and culture in early Dai Viet," *Journal of Southeast Asian Studies (JSAS)* 37:1 (2006): 103–22; and Lieberman, *Strange parallels*, 2.16–17. On climate change and its impact on Southeast Asian polities, see Victor Lieberman and Brendan Buckley, "The impact of climate on Southeast Asia, circa 950–1820: New findings," *Modern Asian Studies (MAS)* 46:5 (2012): 1049–96; also see Gommans, "Continuity and change." For dynamics of the delta in the nineteenth and twentieth centuries, see Michael Adas, "Continuity and transformation: Colonial rice frontiers and their environmental impact on the great river deltas of mainland Southeast Asia," in *The environment and world history*, ed. Burke and Pomeranz, 191–207.

²² Edward Whiting Fox, *History in geographic perspective: The other France* (New York: Norton, 1971).

Along with these logistical considerations the present research intends to reopen the dead-end debate of the Mughal decline by asking fresh questions. It takes a long-term view by engaging with geographical and environmental factors. More specifically, it targets the infrastructural foundations of the economy and polity. The Ganga River, as a highway of trade and commerce in the eastern Ganga plain, offers an important clue to understanding the economic dynamism of the region. In the late sixteenth and seventeenth centuries, effective control over the river showed the political vigor of the Mughal Empire. During the eighteenth century, a number of zamindars and warlords started asserting their control over the Ganga in their respective zamindaris. While such centrifugal tendencies exhibited by the warlords eroded the resource base and political authority of the Mughals, at the same time the regional chiefs were able to augment the resources they accessed via river trade and the agricultural and craft productions in their own hands.

Organization

Chapter 1 deals with the way the Ganga came to stand for Indian civilization. Moving beyond the paradigm of Orientalism, it shows that many indigenous assumptions about the river's origins in paradise were confirmed by similar views held by early European geographers and scholars.²³ By paying close attention to climate and the physical geography of the Ganga, Chapter 2 explores the transformation of the political and economic landscape in the first millennium BC, and again, in the early second millennium AD. I argue that it was the transitional environment between the drier marches and humid fertile agricultural tracts that turned out to be the centres of state-formation. Chapter 3 describes the interaction of human agents with the physical infrastructure of rivers and marchlands. Hence it highlights the human geography of navigation and communication networks through towns. The chapter stresses the mixed nature of the Ganga economy, as earlier, exchanging resources from the dry and humid zones along the river banks. It shows how the Mughal authorities were able to use the logistical facilities of river and roads to control and exploit the region. Chapter 4 goes into the expanding production centres of Bihar. As agriculture in the drier areas absorbed only a part of the available labour, many were on the lookout for alternative occupations: artisans weaving cotton fabrics, rowers manning boats, porters carrying loads. In the more humid zones more peasants toiled to grow more food and more commercial crops while labourers collected and refined saltpeter. During the lean agricultural season, peasants and labourers found employment in the urban centres or served as militiamen for local zamindars or warlords.

Chapter 5 takes a closer look at the expanding global markets for the region's primary products: saltpeter, opium, and textiles. It argues that as a result of Mughal consolidation, the Ganga plain underwent significant commercial expansion, attracting various Indian merchants as well as the European Companies. Export of commodities

²³ Edward W. Said, *Orientalism* (New Delhi: Penguin Books, 2001).

brought large amounts of bullion into the region starting in the seventeenth century. The increased wealth engendered a fresh cycle of conquest and state-formation, which undermined the Mughal political economy along the Ganga from around the early eighteenth century. This I demonstrate, in Chapter 6, by charting the trajectory of interdependency between Indian and Europeans merchants. The chapter reconstructs the migration of Jain/Marwari, Khatri, and Armenian merchants to the Ganga plain in the wake of Mughal integration and commercial expansion. After the commercial economy of the Ganga plain became more closely linked to the maritime economy, specific interests groups from Bengal forged closer ties with the European Companies. By the first half of the eighteenth century, the region slipped away from the Mughal-controlled political economy. Finally, to demonstrate a simultaneous process of regional centralization, Chapter 7 describes the local peasant economy of agricultural expansion, resource mobilization, and cash-nexus as dominated by the zamindars. In this chapter I argue that, as a result of the increasingly seaward orientation of the eastern Ganga economy, a number of merchants, bankers, administrators, and zamindars forged commercial and political alliances with the European Companies. Eventually this led to the domination of the English East India Company, which not only combined all these functions in one figure, but also added a highly effective military capacity. In contrast to earlier regimes, which had dominated the Ganga downstream from the hinterland, it was now from Calcutta that the political and commercial weight of the maritime economy was projected up the Ganga from the coast into the interior.

Sources

This work relies on various genres of sources. Although indigenous sources in Persian, Hindi, and regional languages have been utilized, the study overwhelmingly relies on the rich documentation generated by the early modern European trading companies. The indifference of Persian sources to matters of trade and commerce is well known; so it seems the Mughals were primarily concerned with administering an empire based on an agrarian system. Indifference to trade issues notwithstanding, Persian sources furnish valuable information on political matters, administrative organization, and the Mughal state's relations with the zamindars. Historical sources in Hindi and other Indian vernaculars also seem to lack an immediate concern with riverine commerce. Yet a seventeenth-century autobiography like that of the Jain merchant Banarsidas does offer a glimpse of the trading world of Hindustan. Fortunately, we can occasionally hear local voices in the European documents, as for example, in a petition written by a group of Bihari merchants to the EIC government in which they dwell upon the problems they confront when navigating the Ganga.

The documents generated by the Dutch East India Company (*Verenigde Oostindische Compagnie*, or VOC) at Patna and Hugli were exploited to garner information on trade, markets, and market institutions, merchandise production and transportation, river navigation, and political conditions in eastern India. Although we

have used several types of Dutch sources, the most fruitful for our purposes has been a particular genre of source called the *dagregister*, or the diary kept by the Dutch captains of the Patna fleet on the Ganga. These dagregisters are in the form of riverboat journals and offer eyewitness account of the political and economic situation prevailing along the Ganga between Hugli and Patna. These diaries are fairly consistent for the first half of the eighteenth century, and at times offer a detailed perspective on the changing political circumstances of the period.

Apart from the VOC sources, the documents of the EIC provide voluminous data on trade, transportation, economy, and politics along the Ganga. As commercial bodies the Companies' documents naturally furnish information on trade and commerce; political events are reported to the extent that these impinged on trade. Once the British assumed political power in Bengal after 1757, we find interesting data on agricultural expansion, commercialization of agriculture, the management of land revenue, and internal and overseas trade. Some of the eighteenth-century survey reports by British surveyors and generals give valuable information on geography, routes, and the extent of cultivation in particular areas.

Depending on their context and the agency through which these sources were generated, the Company sources have both merits and shortcomings. Matters considering trade and market situation generally come untainted. Yet at times the Dutch factors reporting from Patna or Hugli to the higher authorities in Batavia or the Netherlands tend to exaggerate adverse conditions such as competition from Asian merchants or the bad political environment in order to cover up their failure to meet the stipulated demands for merchandise. Private trade interests and the scope for smuggling sometimes make for misleading reports of the market potential to supply certain merchandise.²⁴ So even "factual" information on the problems of navigation in the Ganga such as inclement weather, storms, intelligence gathering from the regions controlled by the zamindars, and so on have been critically assessed and utilized.

As far as possible we have dovetailed the information on important events described in the Dutch and English sources. In the middle decades of the eighteenth century, the saltpeter trade from Bihar became a bone of contention between the Companies and in their respective discussions on the matter one gets a clearer picture of the involvement of Indian merchants and political elites in this lucrative branch of trade. Similarly, Dutch and English documents alike report on "harassment" by zamindars or Mughal officials while navigating in the Ganga. The same goes for other political uncertainties such as wars of succession and Maratha raids, matters of major concern to both Companies. Hence, a comparison of their often contentious reports yields a more balanced and revealing picture of the developments along the river.

²⁴ On the reforms of Gustaaf Baron van Imhoff (governor general 1741–50) regarding the private trade of the VOC employees, the functioning of opium society, and the possibility of smuggling this highly lucrative drug, see Chris Nierstrasz, *In the shadow of the company: The Dutch East India Company and its servants in the period of its decline, 1740–1796* (Leiden: Brill, 2012), 80–83.

Chapter 1

Ganga-myth: The River in the Making of an Imagined Community

*Gange cha Yamune chaiva Godavari Sarasvati Narmade Sindhu Kaveri jale asmin sannidhim kuru.*¹

*When a Hindu takes Ganges water and Toolsee in his hand he will sacrifice his life.*²

Introduction

The Ganga is one of the most celebrated rivers in the world. It is not only a river; it is an emblem of “civilization.” In terms of its capacity to nurture material well-being of society over thousands of years, it is equal to or even surpasses the Nile, Euphrates, Yellow and Yangtze Rivers. Many civilizations have taken root along the banks of these great rivers, which continue to sustain them.³ Few would argue that these rivers bring us very close to the source of the historical processes that have given rise to and nurtured civilizations. Indeed, these rivers are visible relics of the past no less than ancient monuments or ageless trade routes. Study of these rivers helps us gauge some of the structural continuities of the economy, society and geo-politics over the *longue durée*. Yet as they change their course across the landscape, these rivers influence the trajectory of history too. Thus the Ganga embodies characteristics of both continuity and change.

Generally it is assumed that from time immemorial the Ganga has displayed an extraordinary capacity to sustain human life, define social organization and facilitate state formation. As the river nurtured the material life of the people who lived along its banks, these riparians reciprocated by vividly imagining and portraying the river in scripture, art and architecture as early as the first millennium BC, if not before. Through the process of representation in art and letters the Ganga came to forge a common bond among diverse people who found themselves members of a community

¹ O Holy Mother Ganga! O Yamuna! O Godavari! Sarasvati! O Narmada! Sindhu! Kaveri! May you all be pleased to be manifest in these waters with which I shall purify myself. See Eric Newby, *Slowly down the Ganges* (London: Hodder and Stoughton, 1966), 23.

² Petition of the sepoys to the Commander in Chief, Barrackpore Parade ground, 1 November 1824. See Premansu Kumar Bandyopadhyay, *Tulsi leaves and the Ganges water: The slogan of the first sepoy mutiny at Barrackpore 1824* (Kolkata: K. P. Bagchi, 2003), 27.

³ Richard W. Bulliet et al., *The earth and its peoples: A global history*, 5th ed. (Boston: Wadsworth, 2011). For river-based ancient civilizations, see pp. 5, 26–50. Civilization is an ambiguous term which is often employed to explain a more complex form of society. However, in this study we follow the anthropologists who use it to describe any group of people who share some common cultural traits.

based not merely on the exploitation of its material bounty, but on shared cultural perceptions generated by their veneration of the river.

The cultural connection formed by the Ganga not only linked the peoples of different regions of the Indian subcontinent spatially; it also helped create a hierarchy of the people from different strata of society who worshiped and revered the river. Thus, the Ganga came to serve myriad communities across the subcontinent, from kings to commoners. We will never know how many millions of people have made a pilgrimage to the banks of the Ganga, or how many committed the ashes of their dead to the river to help them on their way to heaven in the after-life. We only know that the ancient rites and rituals around the river have persisted well into modern times. The lure of the Ganga's cultural appeal was such that even the secular-minded Jawaharlal Nehru, the first prime minister of India, wished his mortal remains to be committed to the river. As he wrote in his Will, "My desire to have a handful of my ashes thrown into the Ganga at Allahabad has no religious significance, so far as I am concerned. I have no religious sentiment in the matter... The Ganga, especially, is the river of India, beloved of her people, round which are intertwined her racial memories, her hopes and fears, her songs of triumph, her victories and her defeats. She has been a symbol of India's age-long culture and civilization, ever-changing, ever-flowing, and yet ever the same Ganga."⁴ As a leader of the new pluralist state of India, Nehru's unease in accepting the religious meanings of a handful of his ashes to be thrown in the Ganga can be imagined, although an overwhelming number of his Hindu followers believed in this ritual and its significance for the attainment of heaven in the after-life. Indeed, Nehru's invocation of the Ganga as "the river of India" helped bridge the distance between India as a cultural entity and India as a modern state desperately in need of a national community.⁵

The first Indian prime minister's attachment and love for the Ganga and his recognition of it as "the river of India, beloved of her people" brings to mind Benedict Anderson's famous description of the nation as an "imagined community."⁶ The Ganga proved one of the most obvious and enduring points of reference in creating the imagined community that is the nation India.⁷ Its appeal transcended religious boundaries, and attracted not only Hindus but Muslims as well. Muslim elites had long

⁴ Raghubir Singh, *Ganga, sacred river of India* (Hong Kong: Perennial Press, 1974), 9.

⁵ Sunil Khilnani, *The idea of India* (London: Penguin, 2003), 155. When returning from Europe and thinking as a world citizen in his youth, Jawaharlal Nehru had been acutely aware of the limiting and restricting scope of nationalism. As he wrote in his autobiography, "My outlook was wider, and nationalism by itself seemed to me definitely a narrow and insufficient creed." See Jawaharlal Nehru, *Jawaharlal Nehru: An autobiography with musings on recent events in India* (London: John Lane/The Bodley Head, 1936), 166. But in later years, Nehru believed that to maintain the newly won independence as well as the economic and constitutional developments, a nation state would be essential; see also Khilnani, *The idea of India*, 30.

⁶ Benedict Anderson, *Imagined communities* (London: Verso, 2006).

⁷ It has been suggested that rather than a nation state based on linguistic and cultural homogeneity on the European model, India should be viewed as a Civilization State, keeping in mind its linguistic, religious and ethnic plurality. See Ravinder Kumar, "India: The prospect ahead," *South Asia: Journal of South Asian Studies* 22:1 (1999): 2-4.

identified themselves with the river by drinking its water and some Nawabs made ceremonial use of it at the time of coronation. As we will see, some Muslims also composed hymns in praise of the Ganga. Thus, the river caught the imagination of both Hindus and Muslims and though they approached it in different ways, their attachment to the river helped create an imagined community that could transcend sectarian divisions.⁸

That the Ganga brought fertile alluvium to the soils in its floodplains and thereby increased the region's agricultural productivity and fostered human settlement was obvious to the early settlers on the Ganga plain from at least the late second millennium BC. Later the river was personified and hundreds of hymns were sung to the goddess Ganga for her munificence.⁹ In the later Vedic period and afterwards, poets and religious philosophers imagined supra-natural attributes of the Ganga, and the Hindu Trinity became closely joined with the river.¹⁰ The foundations of such imagery of the Ganga were so evocatively laid down that by the first millennium AD the fame of the river assumed epic proportions. The personified idol of the river was worshipped by the people who held it to be the mother goddess who ensured the fertility of the realm.

Here we may ask why a river assumed such singular importance in Indian history. How did there develop a community whose members identified so closely with the river? To answer these questions I shall explore the historical processes since the later Vedic period.

This chapter is organized in three parts. Section one discusses the representation of the river and its divine personification in the form of goddess Ganga in the course of history. As we will see, people have frequently invoked the river in cultural and political terms since the early historic period. The growing body of the imagined community of the Ganga is discussed in section two. The section further goes into the origins of pilgrimage to the river and tries to reason out why the numbers of pilgrims to the Ganga increased so dramatically over time. The last section explores the European discovery of the Ganga from a long-term perspective. The Europeans quickly grasped

⁸ The rightwing Hindu organizations in India have been trying to appropriate the cultural heritage of the Ganga to further their own agenda. They have come up with a trilogy of *gangatva*, *hindutva* and *rashtratva* as synonymous concepts for their brand of nationalism based on Hindu cultural perceptions. The Hindu rightwing draws heavily upon the European model of linguistic and cultural nationalism which has become outmoded in Europe where the larger collectives such as European Union have been formed. This study of the Ganga is broad-based and approaches cultural processes from the vantage point of political and economic formations along the river in the course of history. For the Hindu right-wing claim to appropriate the symbolism of the Ganga, see Eva Saroch, "Hydro-borders in South Asia: Geopolitical imaginations and contestations," in *Routing borders between territories, discourses and practices*, ed. Eiki Berg and Henk van Houtum, (Aldershot: Ashgate, 2003), 132–33.

⁹ Ananda K. Coomaraswamy, *The transformation of nature in art* (New York: Dover, 1956). For a philosophical discussion surrounding idol worship, multiplicity of images and assimilatory approach adopted in the ancient Hindu religious tradition, see the chapter "The Origin and Use of Images in India," 155–69.

¹⁰ The Hindu Trinity is comprised of three gods, namely Brahma, Vishnu and Mahesh or Shiva, who are considered to be responsible for creation, sustenance and destruction.

the centrality of the Ganga in Indian religious and secular writing, visual arts, rituals and performances. For the Europeans, the Ganga was also an important geographical marker that they could identify with the land of the Ganga plain and beyond. For the Indians, the perennial water resources, the fertility of its floodplain, abundant food production and complex material culture engendered an affinity with the river that found expression in devotion and worship. Thus the river has been central to the identification of India as a cultural and political entity since antiquity, a fact of which Jawaharlal Nehru was certainly aware when he declared the Ganga to be “the river of India.”

Section I: Ganga Imagined

All along their migratory route from the Indus basin to the Ganga-Yamuna *doab* (land between the two rivers), the Indo-Aryans (the Indo-European language speaking groups of people) of the *Rig Veda* revered and praised the Sarasvati, a river that disappeared in the sands of the Thar Desert in the later Vedic period.¹¹ After they settled in the Ganga plain, these same migrants substituted the Ganga for the Sarasvati. In the *Rig Veda*, which is considered to be the oldest of the Vedic text, there is but one reference to the Ganga. In the later Vedic period, the Indo-Aryans moved further down the Ganga plain in search of more pasture and arable lands, as we will see in Chapter 2. Following the river south and east they started exploiting the bounty of the Ganga and began exalting and glorifying the river with hymns of praise. The river occupied a prominent place not only in these later Vedic texts but also in the epics such as the *Ramayana* and the *Mahabharata*, believed to have been composed between 400–100 BC and 400 BC–400 AD respectively.¹² Like the Sarasvati, the Ganga was supposed to have originated from the *kamandalu* or water-pot of Brahma, the primeval grandfather of the Indo-Aryans.¹³ When the *Ramayana* was composed, the Ganga was imagined to have descended from heaven in a story nicely encapsulated in the “Gangavataran” (descent of the Ganga) episode of the epic. This myth forms an essential part of the Hindu religious tradition. The long story was narrated to young Rama by his royal Guru, the sage Visvamitra, in order to familiarize him with the legendary history of the Ikshvakus, the lineage which Rama belonged to.

¹¹ In this study, the term Indo-Aryans denotes the Indo-European language speaking people and in no way connotes any specific racial identity. On race theory of Indian civilization and the dangers of mixing race with language, see Thomas R. Trautmann, *Aryans and British India* (Berkeley and Los Angeles: University of California Press, 1997), 194–216. Madhav M. Deshpande, “Vedic Aryans, Non-Vedic Aryans, and Non-Aryans: Judging the linguistic evidence of the Veda,” in *The Aryan debate*, ed. Thomas R. Trautmann (New Delhi: Oxford University Press, 2005), 62–83; see also Romila Thapar, “The historiography of the concept of ‘Aryan’” in *India: Historical beginnings and the concept of the Aryan*, essays by Romila Thapar et al. (New Delhi: National Book Trust, 2006), 1–40.

¹² John S. Bowman, ed., *Columbia chronologies of Asian history and culture* (New York: Columbia University Press, 2000), 328.

¹³ Steven G. Darian, *The Ganges in myth and history* (Delhi: Motilal Banarsidass, 2001), 58–62.



Figure 2. Rama, Lakshmana and Visvamitra crossing the Ganga, image taken from the *Ramayana*, *Bala Kanda*. Originally produced in 1712 at Udaipur, Rajasthan. Source: BL, London.

Ganga Stories

As the story goes, once a just and righteous king of Ayodhya named Sagara wanted to perform *ashwamedha* (horse sacrifice) in order to claim the title of *chakravartin* (universal ruler), and for this purpose he let loose a sacrificial horse. Whatever lands the horse roamed in during the year became the territory of Sagara. Eventually, the gods became worried about the expansion of the king's realm and fearing that even heaven would be annexed they beseeched the sage Kapila to capture the horse. When the horse did not return to Ayodhya at the end of the year, Sagara commanded his sixty thousand sons to find out who had captured the horse. When the sons of Sagara went to the northeast of the *Jambu-dvipa* (name of the Indian subcontinent in the epics) they found the horse and the sage in the netherworld. They attacked Kapila who turned them into ashes by uttering the syllable 'Hum'. Later a great great-grandson of Sagara named Bhagiratha decided to do the funerary libation for his sixty thousand dead ancestors. Bhagiratha was told that the sixty thousand souls would reach heaven only if their ashes could be purified with Ganga water. As the Ganga was still a celestial body, Bhagiratha did penance and strove hard to bring her to earth and then carry the river to the netherworld to liberate the souls of his ancestors.¹⁴

After years-long austerities and ascetic living, Bhagiratha was able to please Brahma, who asked him to request a favour. When Bhagiratha said he wanted to be the one who could perform the funerary libations for his ancestors with Ganga water, Brahma replied that only the god Shiva could hold the fall of the Ganga on his matted

¹⁴ Valmiki, *Ramayana: Boyhood: 38–41, book one*, trans. Robert P. Goldman (New York: New York University Press, 2005), 217–29.

hair because the earth would be unable to withstand the force of such a thunderous fall. In order to please the god Shiva, Bhagiratha stood on the tip of one toe for a year and constantly worshipped him. In acknowledgment of this dedication, the god Shiva agreed to allow the Ganga to fall on his head. As the Ganga plunged from the sky, she got entangled in his matted hair and after many years Shiva released her into a lake from which the river then flowed onto the earth, this was a great event that was watched by all the celestials and worldly creatures with great astonishment. The mighty flow of the river was not uniform. In some places it flowed swiftly, winding its course while at other places the river moved slowly. In some areas it broadened out while at some other places it narrowed. Riding his celestial chariot, Bhagiratha guided the course of the Ganga to the ocean. He then entered a gaping hole in the netherworld where the ashes of his ancestors were washed in Ganga water and the sixty thousand sons of Sagara ultimately reached heaven. Then Brahma made an appearance and spoke to Bhagiratha congratulating him on his momentous feat. He named the river after Bhagiratha and called it the Bhagirathi Ganga.¹⁵ This name is applied to the river at its source in the Himalayas and again to the Hugli branch of the Ganga in modern West Bengal. The primacy of the god Shiva in the “Gangavataran” story is perhaps indicative of the Indo-Aryans’ assimilation of the traditions of the people already settled on the plain when they arrived there and shows the adaptations of the religious and cultural legacies of the pre-Aryans into hybridized Indo-Aryan-religious practices.¹⁶ The widespread appeal of such mythologies to ancient Indian traditions became possible as the Indo-Aryans subsumed and appropriated the local traditions, some of which may well have been vestiges from the erstwhile Indus Valley culture.

In another myth espoused by the *Vaishnava* sect, the god Vishnu took the *Bavan avatar* (the dwarf incarnation) in order to trick the demon king Bali out of his kingdom and thus to appropriate the entire cosmos for the gods by measuring it in three giant strides, known as *trivikrama*. In the first two strides he measured and appropriated the earth and the netherworld, but while taking the third stride to appropriate the sky his foot broke the vault of heaven. The waters stored in the vault of heaven are identified with *soma*, the nectar of the gods and the elixir of immortality.¹⁷ As soon as the toe of Vishnu touched the vault, the heavenly water gushed out in the form of holy Ganga and

¹⁵ Valmiki, *Ramayana: Boyhood: 41–43, book one*, trans. Robert P. Goldman, 231–39; see also Darian, *The Ganges in myth and history*, 17–19; C. Sivaramamurti, *Ganga* (New Delhi: Orient Longman, 1976), 13.

¹⁶ It has been suggested that Shiva and his consorts, including Ganga, personified *shakti* (the female energy) or mother goddess which combined “in one shape life and death.” The phallic symbol of Shiva characterized him as fertility god. It was only after cultural assimilation that Vedic religion included the worship of the mother-goddess and Shiva into its fold. See E. O. James, *The cult of the Mother-Goddess: An archaeological and documentary study* (London: Thames and Hudson, 1959), 102–3.

¹⁷ Diana L. Eck, “Gaṅgā: The goddess in Hindu sacred geography,” in *The divine consort: Rādhā and the goddesses of India*, ed. John Stratton Hawley and Donna Marie Wulff, 1st Indian ed. (Delhi: Motilal Banarsidass, 1984), 175.

found its way to earth through Mount Meru.¹⁸ Thus, in myth and legend, the celestial river was assumed to form a direct link between earth and heaven, the realm of the immortals.

The prevalence and popularity of mythical themes such as “Gangavataran” reached as far as southern India and the narrative was sculpted into a giant open-air bas-relief carved from a monolithic rock at Mahabalipuram as early as in the seventh century, during the reign of the Pallava kings.¹⁹ Art historians suggest that the *Gangadhara* theme depicting Shiva holding out a strand of his hair-lock to receive Ganga began to appear in south Indian cave inscriptions and temple art at this time.²⁰ These depict episodes from the “Gangavataran” theme in elaborate detail, and it is clear that an imagined community associated with the Ganga had already taken its hold in southern India—some two thousand kilometres from the Bhagirathi Ganga—by this time.²¹

The artistic representations of the Ganga as goddess may owe something to a tradition antedating the Indo-Aryans. With the Indo-Aryan migration and settlement on the Ganga plain, the image of a pre-Aryan fertility goddess might have been transposed onto the image of the goddess Ganga. A recent study mentions the existence of “religious cults of popular nature” in the Avanti *mahajanapada* (literally great country, or territory; circa. 500 BC) on the basis of finds of terracotta figurines of the mother goddess. However, the author does not discuss how a mother-goddess cult in Avanti was later appropriated by the dominant religious traditions.²² Probably as a result of cultural borrowings between earlier settled society and the Indo-Aryan settlers, the Ganga also came to be perceived as an emblem of fertility or the mother goddess, an important cultural aspect of the Indus Valley civilization.²³ Buddhist artistic tradition

¹⁸ Sivaramamurti, *Ganga*, 13. David Kinsley, *Hindu goddesses: Visions of the divine feminine in the Hindu religious tradition* (California: University of California Press, 1986), 188–89. See Vasudeva S. Agrawala, *Vamana Purana—A study* (Varanasi: Prithivi Prakashan, 1964), 55–62. Also *The Vishnu Purana: A system of Hindu mythology and tradition*, trans. H. H. Wilson (Calcutta: Punthi Pustak, 1961), 188. For a detailed description of myths about the origins of Ganga in the Shaivait and Vaishnavait traditions see Heinrich von Stietencron, *Ganga und Yamuna: Zur symbolischen bedeutung der flußgöttinnen an indischen tempeln* (Wiesbaden: Otto Harrassowitz, 1972), 48–69.

¹⁹ Sivaramamurti, *Ganga*, 78–79; *New world encyclopedia*, <http://www.newworldencyclopedia.org/entry/Mahabalipuram> (accessed on 12 July 2012).

²⁰ Archana Verma, *Temple imagery from early medieval peninsular India* (Farnham: Ashgate, 2012), 122–23. According to Verma, the parallelisms drawn between Shiva and the Pallava ruler Mahendravarman I along with their consorts, Ganga and Kaveri respectively, in the Trichy Cave inscription suggest the ruler’s control over the Kaveri just as Shiva controlled the flow of the Ganga; for the parallelism between Shiva and Mahendravarman and the Ganga and the Kaveri, see also Michael Lockwood, *Mamallapuram and the Pallavas* (Madras: Christian Literature Society, 1982), 62–73.

²¹ The occasional references to the Ganga in the works of ancient Tamil poets of the Sangam Age (third century BC to second century AD) probably point to the fascination inspired by the river. See M. Varadarajan, *The treatment of nature in Sangam literature (ancient Tamil literature)* (Madras: South India Saiva Siddhanta Works Publishing Society, 1957), 59, 121–22, 219.

²² Archana Verma, *Cultural and visual flux at early historical Bagh in central India* (Oxford: Archaeopress, 2007), 16, 37–43.

²³ For the scattered agricultural settlements in the Ganga-Yamuna River valley and the Vindhyan Plateau to the south during “the Regionalization Era of the Indo-Gangetic Tradition (4000–1000 BC),” see

probably holds a clue to such cultural mediation between the pre-existing mother goddess and the goddess Ganga.

It was not until the development of Buddhist artistic motifs in the late-Mauryan period that the rhythms of everyday life were depicted and the cult of the mother goddess representing fertility and life generation found expression.²⁴ As Buddhist ideas and cultural practices spread out from the Ganga plain, they found expression in art and architecture often drawing on local traditions. During the Mauryan period, and increasingly so during the Sunga Period (185 to 72 BC), Buddhist art depicted mythological events and people's primordial beliefs prevailing in the different parts of the Indian subcontinent. Patronized by kings and wealthy merchants, the famous Buddhist *stupas* (sepulchral mounds) at Sanchi and Bharhut in central India and the cave sculptures at Ellora in western India are replete with popular themes the depiction of which represents a fusion of both Aryan and non-Aryan themes. It has been suggested that the practice of erecting stupas represents a co-mingling of indigenous religious spirit and Vedic symbolism derived from the sacrificial altar.²⁵ Tree goddesses in the form of *yakshi* at Bharhut and Sanchi represent fertility goddesses. One figure at Bharhut is depicted as standing on a *makara* (crocodile), and in subsequent centuries the goddess Ganga is always shown associated with *makara*, and eventually the crocodile becomes her official vehicle. The themes represented in Buddhist art became the starting point from which one can trace the continuous development of the image of goddess Ganga in later art forms.²⁶

During Satavahana rule (second century BC to third century AD)²⁷ in southern India, we also find depictions of the goddess Ganga standing on a *makara* and carrying a vessel of water. Such a sculpture of Ganga (possibly second century AD) is engraved on a slab in Amaravati in Andhra Pradesh. Later sculptures from the same place depict the river goddess carrying water in a jar and food in a tray. A similar theme has been captured in a Kushan period (first and second century AD) figure carrying food and water. These sculptures show the river as a source of plenty and abundance and its maternal nurturing capacity.²⁸ It is not surprising therefore that the Ganga came to be perceived as *Ganga maiya* or *Ganga mata* (Mother Ganga) in the popular tradition of the Ganga plain. Thus the idol of Ganga the goddess and the river Ganga were mutually

Jonathan Mark Kenoyer, "Cultures and societies of the Indus tradition," in *India: Historical beginnings and the concept of the Aryan*, essays by Romila Thapar et al. (New Delhi: National Book Trust, 2006), 75.

²⁴ S. P. Gupta, *The roots of Indian art (A detailed study of the formative period of Indian art and architecture: third and second centuries B.C.—Mauryan and late Mauryan)* (Delhi: B. R. Publishing, 1980), xii. Gupta espouses the insular approach to the growth of ancient Indian art and discounts any outside influence; see also Niharranjan Ray, *Maurya and post-Maurya art: A study in social and formal contrasts* (New Delhi: Indian Council of Historical Research, 1975), 1–2.

²⁵ C. B. Pandey, *Mauryan art* (Delhi: Bharatiya Vidya Prakashan, 1982), 39–42.

²⁶ Darian, *The Ganges in myth and history*, 81–85.

²⁷ A. Ghosh, ed., *An encyclopaedia of Indian archaeology*, vol. 1 (New Delhi: Munshiram Manoharlal, 1989), 147. Ghosh states that the beginning of the Satavahana rule is controversial, although culturally the dynastic rule can be placed between the second century BC and third century AD.

²⁸ Sivaramamurti, *Ganga*, 48–1.

reinforcing and both were worshipped. Since the late first millennium BC, rulers and elites have taken advantage of the Ganga's appeal among the common folk to fashion political and cultural idioms intended to make the river a source of legitimacy for themselves.

Geography Repeats Itself

Among the kings and the empire-builders of early India the ambition to rule over the Ganga plain loomed large. This might have stemmed from the stunning wealth that the successive states since the Magadha kingdom were able to amass in the river plain owing to the rich resources and fertility of the region. The Maurya, Gupta and Harsha were all successful empires in early India and their power was centred on the Ganga plain. Thus, by the first millennium AD a direct or imagined link with the Ganga assumed a political significance that led rulers in other parts of India, particularly the south, to place images of the goddess Ganga in their temples. Since the temple embodied the ruling groups' ideology, the presence of Ganga there perhaps points to some actual or imagined link with the river and the plain. The political symbolism of the Ganga comes into sharp relief if we consider the figure of the goddess Ganga standing on a crocodile as depicted in the nicely engraved coin of Samudragupta (335 to 380 AD), the Gupta emperor. It has been suggested that the goddess Ganga was introduced on the coin in order to indicate the emperor's conquest of the Ganga plain.²⁹ The same emperor's Allahabad inscription exalted his fame "ever heaped up higher and higher by the development of (his) liberality and prowess of arm and composure and (study of) the precepts of the scriptures,—travelling by many paths, purifies the three worlds, as if it were the pale yellow water of (the river) Ganga, flowing quickly on being liberated from confinement in the thickets of the matted hair of (the god) Pasupati."³⁰ Here the Ganga is analogous to the emperor's fame and his prowess in arms. A few centuries later, the political meanings of an association with the Ganga found expression in other parts of the Indian subcontinent too.

The peninsular Indian ruling dynasties such as the Chalukyas and Rashtrakutas similarly appropriated the symbols of the northern rivers. After the death of Harsha, the last powerful emperor in the Ganga plain, in the late seventh century the Chalukyas carried out their exploits to the Ganga plain. The Chalukyan king Vinayaditya defeated a number of northern feudatories and captured many royal insignia from them. Among the great spoils and symbolic objects Vinayaditya brought to the Deccan also included the "Ganga and Yamuna", as their inscriptions note. In the mid-eighteenth century, the Rashtrakutas supplanted the Chalukyas and around 800 AD the Rashtrakuta king Govinda III led an expedition to the Ganga-Yamuna doab. Govinda III claims in his inscriptions that he "took from his enemies the Ganga and Yamuna." As Richard Davis

²⁹ Radha Kumud Mookerji, *The Gupta empire* (Delhi: Motilal Banarsidass, 1969), 34–35.

³⁰ John Faithfull Fleet, *Corpus inscriptionum Indicarum, inscriptions of the early Gupta kings and their successors*, vol. 3, *The Gupta inscriptions. Texts and translations* (Calcutta, 1888), 16. Insertions in the bracket are in the original.

remarks, “Once again epigraphs linked acquisition of the two northern rivers with the attainment of imperial sovereignty.”³¹

Perhaps a far clearer example of the Ganga exemplifying the imperial sovereignty of a king comes from the Chola reign in southern India. The emperor Rajendra Chola I (1012–1044 AD) assumed the title of *Gangaikondachola* (“the Chola who conquered the Ganga”) and founded a new capital *Gangaikondacholapuram* (“the town of the Chola who conquered the Ganga”), located in modern Tiruchirapalli or Trichy district of Tamil Nadu. Also a lake called *Gangaikondacholan* was dug up in around 1025 AD. These building activities were undertaken to commemorate his victory over the Ganga region especially of Bengal where Mahipala was defeated by the victorious arms of Rajendra Chola.³² This event took place around 1022 AD when the Chola army first defeated the Eastern Ganga ruler of Kalinga (Orissa) and then kept on marching northward up to the Ganga.³³ As soon as these conquests were made, the newly built capital was named *Gangaikondacholapuram* and the emperor fulfilled his desire of sanctifying his land with Ganga water.³⁴ The military triumph so eloquently celebrated by Rajendra Chola furnishes an example as to how deeply the ruling elites’ political ideology was entangled with the Ganga. Not only had the Ganga become a great legitimizing symbol for ruling elites, but the geographical spread of the imagined community created by the Ganga was no longer limited to the Ganga plain. It had taken root and flourished in other parts of the Indian subcontinent too.

The Cholas conquered or obtained suzerainty over many other parts of South and Southeast Asia, but their jubilation over the victory in the eastern Ganga plain remains noteworthy. The triumphant celebration of the Cholas’ conquest of the Ganga region was perhaps linked to a process, the genesis of which goes back to the early centuries AD. The fame of the Ganga was such that some of the ruling dynasties were named after the Ganga and the myths and legends were deployed to link these ruling houses to the river. Many centuries before Rajendra Chola’s assumption of the exalted title of *Gangaikondachola*, we hear of the Ganga dynasty and its separate lineages such as the Eastern Gangas and the Western Gangas, which held sway over considerable parts of south-eastern and south-western India respectively. Scholars believe that the formidable Western Ganga dynasty was founded in the second or third century AD and ruled over the Kaveri basin, also known as Gangavadi. The Eastern Gangas started their own era beginning in about 550 AD. Inscriptional sources refer to Eastern Ganga kings

³¹ Richard H. Davis, *Lives of Indian images* (Princeton: Princeton University Press, 1997), 72–73. See also, J. F. Fleet, “Sanskrit and old Canarese inscriptions, no. 27,” *The Indian Antiquary: A Journal of Oriental Research* 12 (1883): 156–65.

³² E. Hultzsch, *South-Indian inscriptions*, vol. 2, pt. 1 in *Archeological survey of India, new imperial series*, vol. 10 (Madras: Superintendent, Government Press, 1916), 108–9.

³³ K. A. Nilakanta Sastri, *A history of south India: From prehistoric times to the fall of Vijayanagar* (London: Oxford University Press, 1966), 183.

³⁴ According to the Thiruvallangadu copper charter, “the light of the solar race (Rajendra), mocking Bhagiratha who by the force of his austerities caused the descent of the Ganga, set out to sanctify his own land with the waters of that stream brought by the strength of his arm.” R. Nagaswamy, *Gangaikondacholapuram* (Tamilnadu: State Department of Archeology, 1970), 5–6.

of Kalinga in the seventh and eighth centuries, a dynasty which lasted in one form or another until the fifteenth century. It is suggested that since the Western Gangas of the Mysore region predated the Eastern Gangas, the latter could have been an offshoot of the former.³⁵ The Western Ganga dynasty claimed their lineage from the house Ikshvakus of the solar race, a lineage they shared with Rama, the legendary hero of the *Ramayana*. According to a Kallurgudda inscription of 1122 AD, one of the rulers Bharat and his wife Vijayamahadevi, who had bathed in the Ganga during pregnancy, bore a son named Gangadatta (the gift of Ganga). The dynastic line of Gangadatta came to be called the Gangas. In one of the inscriptions of the Eastern Ganga kings it is mentioned that they were related to the Western Ganga rulers of Mysore.³⁶ It is hard to verify the historicity of these claims, but that the Ganga was a central point of reference is beyond doubt. Clearly, the Ganga had seeped into the political idiom as it exalted the political status of the ruling groups, bestowed legitimacy and validated imperial-expansionist ambitions.

During the late-first millennium AD, the “political Gangocentricity” of the subcontinent’s regional powers was the result of their imperial aspirations, which were in turn inspired by the memory of the expansive empires that had emerged on the Ganga plain since the latter half of the first millennium BC.³⁷ The political success and cultural processes of these empires helped situate the Ganga plain and the river at the centre of imperial sovereignty. In the later first millennium AD, the centre of gravity of political power shifted to the north-western parts of the Ganga plain. The semi-arid upriver plain emerged as a new political frontier because of the pressures coming from the horse-mounted Turko-Afghan warriors from Central and West Asia. In spite of these geo-strategic changes, however, the Ganga-centric cultural processes already set into motion remained in force and had spread across the subcontinent as we will see below.

The cultural geography of the Ganga was not less influential than the political. Culturally the sacred geography of the Ganga was made almost hegemonic and the many rivers of the Indian subcontinent were seen as only approximating the holiness of

³⁵ R. C. Majumdar, *Ancient India* (Delhi: Motilal Banarsidass, 1964), 390.

³⁶ C. Hayavadana Rao, ed., *Mysore gazetteer*, vol. 2 (Bangalore: Government Press, 1930), 587–88; see also B. Sheik Ali, *History of the western Gangas*, in the series *Comprehensive history of Karnataka*, vol. 1 (Mysore: Prasaraanga, University of Mysore, 1976), 1–17 for different theories about the origin of the Ganga rulers. Ali suggests, “[t]he very fact that the capital of the Gangas was situated on the banks of the river Cauvery, namely at Talkad indicates that the name Ganga could have had affinity with Cauvery which was also called Dakshina Gange which could have inspired the founders to name the dynasty as the Gangas.” But the Kaveri or Dakshina Ganga did not inspire the eleventh century Chola ruler, Rajendra Chola who assumed the title *Gangaikonda* only after his conquests of the Ganga in the north. The Chola rulers did not assume this title after conquering the Dakshina Ganga or the Kaveri basin. It shows that the Ganga would have been the primary source of inspiration for the Ganga rulers of Mysore too. For the Eastern Gangas, see R. D. Banerji, *History of Orissa: From the earliest times to the British period* (Calcutta: R. Chatterjee/Prabasi Press, 1930), 242–88; J. K. Sahu, “Minor dynasties (Marathas, Eastern Gangas, Nalas and Sarabhapuriyas),” in *Comprehensive history and culture of Orissa*, ed. P. K. Mishra, vol. 1, pt. 1 (New Delhi: Kaveri Books, 1997), 142–48.

³⁷ Davis, *Lives of Indian images*, 75.

the Ganga. People performing religious rites or making ablutions in any river imagined the Ganga to be present. At times, other rivers assumed the identity of the Ganga itself. For example in southern India the Kaveri River is believed to take on the form of the Ganga for a month every year, and devout Hindus call the river *Dakshina Ganga*, or Southern Ganga.³⁸ Similarly, the Godavari River is believed to share many of the attributes of the Ganga and hence is called *Adya Ganga* or *Vridha Ganga* (the elder sister of the Ganga).³⁹ According to a late-nineteenth-century observation, people believed that the Godavari and Ganga shared the same source and hence they frequently called both rivers Ganga.⁴⁰

In regions beyond the Indian subcontinent we find the name of Ganga being used for the rivers and towns. The name of the Mekong (*Mae Khong*) River in Southeast Asia is believed to be an adaptation of Sanskrit words meaning “mother Ganga”,⁴¹ and the Bengalis would pronounce it *Maa Gonga*. Sanskrit inscriptions of Java in Indonesia frequently refer to the Ganga. The inscriptions imply that any stream identified with the Ganga could then be used in acts of ritual purification. In this sense, as Richard Solomon suggests, the Ganga assumed a metaphysical rather than a geographical identity.⁴² There are some cities such as Ganganagara in the Malay Peninsula which might have been founded by the Indian settlers there during the first millennium AD.⁴³ Many myths surrounding the river wove tales of its supernatural character and the legends projected it as a celestial body. As a result of these cultural processes, the Ganga became the hallmark of holiness and its water assumed sanctifying effect. So the imagined community around the veneration of the Ganga could be found outside of the Indian subcontinent too.

³⁸ W. S. Meyer, et al., eds., *The imperial gazetteer of India*, vol. 9 (Oxford: Clarendon Press, 1908), 303.

³⁹ Anne Feldhaus, “Mountains, rivers and Siva: Continuity among religious media in Maharashtra,” in *Intersections: socio-cultural trends in Maharashtra*, ed. Meera Kosambi (New Delhi: Orient Longman, 2000), 23.

⁴⁰ Henry Morris, *A descriptive and historical account of the Godavery district in the presidency of Madras* (London, 1878), 166. In a recent work Feldhaus has suggested that the Ganga has different meanings for the people of Maharashtra. According to her, instead of using the local names for the rivers, they often call them “Ganga.” For example, the Godavari in Nasik (Maharashtra) is called Ganga. She contends whether people actually mean the Bhagirathi Ganga (the one in the north) when they refer to a local river in Maharashtra by the name of Ganga, see Anne Feldhaus, *Connected places: Religion, pilgrimage, and geographical imagination in India* (New York: Palgrave Macmillan, 2003), 178–81. In this regard Ronald Inden is instructive when he writes that the replication of northern sacred symbols in the southern landscapes was not like paying “obsequance to some distant and awe-inspiring model of a sacred place.” Instead, people were claiming to make that place or a river homologous to its northern counterpart. See Ronald Inden, *Imagining India* (Oxford: Basil Blackwell, 1990), 256–57.

⁴¹ George B. Walker, *Angkor empire* (Calcutta: Signet Press, 1955), 9. Francesca Bray, *The rice economies: Technology and development in Asian societies* (Oxford: Basil Blackwell, 1986), 73; see also Mahesh Kumar Sharan, *Studies in Sanskrit inscriptions of ancient Cambodia, on the basis of first three volumes of Dr. R. C. Majumdar’s edition* (New Delhi: Abhinav Publications, 1974), 9.

⁴² Richard Salomon, “Indian tirthas in Southeast Asia,” in *The history of sacred places in India as reflected in traditional literature: Papers on pilgrimage in South Asia*, ed. Hans Bakker (Leiden: Brill, 1990), 160–76.

⁴³ S. Paranavitana, “Ceylon and Malaysia: A rejoinder to K. A. Nilakanta Sastri,” *Journal of the Ceylon Branch of the Royal Asiatic Society* 8:1, New Series (1962): 371.

Section II: Ganga the Holy

A host of economic, political and cultural factors contributed to the emergence of the Ganga as the river *par excellence*, and the word Ganga became a generic term for a river in the Indian subcontinent. In myths and legends the Ganga was perceived as a manifestation of the celestial body on earth and the river could transport one's soul to heaven. The notion of the Ganga as purifier who washes away all sins became deeply rooted among Hindus of all classes. Its sanctity was beyond question for most Hindus and gradually a pilgrimage to the river for the purposes of ritual ablution became one of the most common ways to purify oneself from accumulated sins. Presently I shall describe how the pilgrimage to the river evolved and became more popular over the course of time. That the Ganga was a holy river for a majority of their subjects was not unknown to the Muslim rulers who came to dominate a large part of the Indian subcontinent in the thirteenth century. As a result, many of these Muslim rulers also connected themselves with the river and its water in various ways. Some made it a habit to drink water from the Ganga alone, even though they were stationed far away from its banks. Others used its waters during the coronation ceremony. These attachments on the part of these Muslim rulers with the river might not have sprung from religious sentiments but they were certainly aware of the political meanings of such acts of association with the river.⁴⁴

Ganga Pilgrimage

In the Ganga plain the bounty that the river bestowed upon the people made it an object of worship and its water became the symbol of holiness. As a result the river attracted increasingly large number of pilgrims who sought spiritual, moral and material salvation. Injunctions about worshipping the Ganga, especially during droughts were laid down in Kautilya's *Arthashastra*.⁴⁵ Such instructions clearly show that the river owing to its role as the provider of food and nourishment was worshipped.⁴⁶ As the river constituted an essential part of people's economy and society, the worship of the Ganga as mother and pilgrimage to its sacred banks would naturally evolve in the religious culture.⁴⁷ The Sanskrit word for pilgrimage is *tirtha*, which means a place where one fords a river. It has been suggested that the term has two underlying meanings. It implies that the river in itself is a sacred place, and it suggests the idea of a

⁴⁴ Richard M Eaton, "Temple Desecration and Indo-Muslim States," in *Beyond Turk and Hindu: Rethinking religious identities in Islamicate South Asia*, ed. David Gilmartin and Bruce B. Lawrence (Gainesville: University Press of Florida, 2000), 246–81.

⁴⁵ Kautilya, *The Arthashastra*, ed. and trans. L. N. Rangarajan (New Delhi: Penguin, 1992), 107.

⁴⁶ In the 1980s, during my childhood years in a small village (Kahua) in the Darbhanga district of north Bihar, I used to see my mother sprinkling a few drops of Ganga water on the heap of seeds before labourers took it to the sowing fields. My mother firmly believed that the Ganga water increases the yield of crops. Anthropologists have yet to shed light as how widespread this practice is.

⁴⁷ The cult of mother goddess was not specific to the pre-historic Indian civilization only but was found in almost all pre-historic civilizations in the Eurasian world. For the different forms of the mother goddess in India see, E. O. James, *The cult of the mother-goddess*, 99–127; see also Richard M. Eaton, *The rise of Islam and the Bengal frontier 1204–1760* (New Delhi: Oxford University Press, 1997), 20.

crossing from the human world to the world of the divine.⁴⁸ As we will see below, in the course of time, people came to believe in the supernatural qualities of the Ganga and they worshipped it. Making a pilgrimage to its holy banks became gradually more popular. Before describing the sacred geography of the Ganga and pilgrimage to the river, in the following paragraphs I shall briefly discuss the origins of the sanctity of the Ganga.

Apart from myths about the divine origin of the river, the sacred literature in the form of epics and the *Puranas* (400 BC to 400 AD) played a crucial role in affirming and popularizing the sanctity of the Ganga by devoting numerous *mahātmyas* (praises) to her.⁴⁹ Water bodies were revered as purifying ever since the Vedic period and we have seen how the holiness of the Sarasvati River was carried over to the image of the Ganga as the Indo-Aryans made the Ganga plain their new abode. In Hinduism the moving waters and rivers have been accorded great purifying powers and a ritual bath is prescribed as the simplest way to get rid of one's accumulated impurities. The word Ganga originated from the Sanskrit verb *gam* meaning to go. Thus, it is the constant flow of the waters which signified the Ganga as being purifying in nature. Over the ages, Indo-Aryan seers and poets composed and sang hymns praising the flow and movement of Ganga waters. As water is considered a cleansing element and the moving waters as removers of the pollutions and impurities, the Ganga with its flowing waters became holy and purifying.⁵⁰

As devotion to the river persisted, pilgrimage to the Ganga assumed growing significance by the first millennium AD. Pilgrimage was preferred to the more costly Brahmanic sacrifices and was said to yield even greater religious merit. The *Matsya Purana* of Hindu scripture states that there are 35 million *tirthas* (pilgrimages) and all of them are centred in the Ganga. The *Vanaparva* of the *Mahabharata* tried to broaden the scope of pilgrims by recommending that different *varnas* and castes, including women, could reap religious merit by undertaking pilgrimage and bathing at the holy places along the Ganga. Moreover, untouchability hardly mattered while taking a holy dip with different castes at the pilgrim places.⁵¹ The literature of the second millennium AD reaffirmed the holiness of the Ganga and included more hymns glorifying the image of the river.

⁴⁸ Pandurang Vaman Kane, *History of Dharmaśāstra (ancient and medieval religious and civil law in India)*, vol. 4, *Pāṭaka, Prāyascitta, Karmavipāka, Antyeṣṭi, Āśauca, Śuddhi, Sraāddha and Tīrthayātrā* (Poona: Bhandarkar Oriental Research Institute, 1953), 554–55; Kinsley, *Hindu goddesses*, 184, 192; Subhadra Sen Gupta, *Tirtha: Holy pilgrim centres of the Hindus: Saptapuri & Char Dham* (Delhi: Rupa, 2001), 5.

⁴⁹ The *Puranas* (ancient tales), though believed to be from the eighth century BC, underwent substantial revision in the fourth century AD. Additions continued to be made to the *Puranas* during subsequent centuries. The epics such as the *Ramayana* and the *Mahabharata* were composed between 400 BC and 400 AD, see Bowman, *Columbia chronologies*, 328–31.

⁵⁰ Eck, “Ganga: The goddess in Hindu sacred geography,” 172–74; Kinsley, *Hindu goddesses*, 189; Kane, *History of Dharmaśāstra*, 4:560.

⁵¹ Kane, *History of Dharmaśāstra*, 4:560–69.

The Sanskritist and scholar Pandurang Vaman Kane refers to the manuals written in the second millennium AD which prescribe the rituals for performing pilgrimage. Such manuals include the *Gangapattalaka* of Ganesvara (1350), *Gangavakyavali* of Visvasadevi (fifteenth century) by the queen of the king Padmasimha of Mithila (the authorship of this work is also attributed to the medieval poet Vidyapati), *Gangakrityaviveka* of Vardhamana (1495) and *Gangabhakti-tarangini* of Ganapati (1740?). These works eulogizing the Ganga also prescribe the steps to be followed during the pilgrimage. The rituals of pilgrimage to the Ganga are laid out in minute detail in many digests and manuals. These pilgrimage manuals were written primarily by the literate class of the priests and Brahmans for their largely literate clientele, and the authors might have had some stakes in regulating the rituals of pilgrimage.⁵²

There seems to have been a growing interest in the pilgrimage to the Ganga and other holy places since the early second millennium AD. The pilgrim tax levied by the Muslim rulers and the expenses of travel hardly discouraged those who were determined to undertake such a journey. The thirteenth-century Hoysala king Narsimha III is said to have granted monetary assistance of 645 *niska* (coin of gold) to pilgrims from Karnataka, Telangana, Tulu, Tirhut and Gaur in order to enable them to pay the pilgrim tax to the Turks (*turushkas*). As the amount granted by the Hoysala king does not seem to have been very large, the number of pilgrims might have been rather modest, even if they were drawn from a large geographical area. In the seventeenth century a writer called Kavindracharya was able to get an exemption from the pilgrim tax for the Hindus going to Prayag and Kashi (Banaras) from the emperor Shah Jahan.⁵³ The author received accolades and congratulatory letters from the different parts of India. This certainly shows a wider interest in the pilgrimage to the holy places especially along the Ganga, but we can hardly estimate the number of pilgrims in this period. As noted, the many treatises stressing the merits of pilgrimage may have had a positive effect in inducing pilgrims to visit the holy places if they could find the means to pay for such a journey.

Many travellers to India have left vivid accounts of the pilgrimage from ancient times. Drawing on the surviving accounts of Megasthenes, the Greek ambassador to the court of Chandragupta Maurya in Pataliputra around the early third century BC, Strabo informs us that the Ganga was worshiped along with the rain god Indra and local deities.⁵⁴ The Chinese traveller Hsüan Tsang' who visited India in the seventh century, wrote of the Ganga, "In the popular literature the river is called *Fu-shui* or 'Happiness-

⁵² Kane, *History of Dharmaśāstra*, 4:572–83. For the year of composition of the *Gangakrityaviveka*, see Syed Hasan Askari and Qeyamuddin Ahmad, eds., *The comprehensive history of Bihar*, vol. 2, pt. 1 (Patna: Kashi Prasad Jayaswal Research Institute, 1983), 250.

⁵³ Kane, *History of Dharmaśāstra*, 4:571–72. For the Turks' control over Banaras before Bakhtiyar Khilji's conquest of Bengal in 1204 and a tax called *turushkadanda* (Turk's duty) levied on the people of Maner near Patna, see Askari and Ahmad, eds., *The comprehensive history of Bihar*, 33–34.

⁵⁴ J. W. McCrindle, *Ancient India as described in classical literature, being a collection of Greek and Latin texts relating to India* (Westminster: Constable, 1901), 74–75.

water' that is, the water (or river) of religious merit. Accumulated sins are effected by a bath in the water of the river."⁵⁵ Indeed, by the time of Hsüan Tsang's visit to India the Ganga had already acquired the fame of being holy and in the following centuries also pilgrims went to the river banks to pay their homage, to take a holy dip and get rid of their sins. The pilgrimage to Sagar or Gangasagar where the Ganga flows into the Bay of Bengal was very important as the Nalanda copperplate inscription of Devapala (early ninth century) particularly underlines the merits of a bath there.⁵⁶ In the fourteenth century the Moroccan traveller Ibn Battuta was duly aware that "the Ganges is the river to which the Hindus make their pilgrimage."⁵⁷ The seventeenth-century French traveller Jean de Thévenot wrote that at Allahabad occurred "at certain times an incredible concourse of People, in Pilgrimage from all parts of the *Indies*."⁵⁸ With the passage of time, the tradition became more deeply rooted and widespread and the number of pilgrims swelled by the nineteenth century.⁵⁹

John Marshall, an English East India Company (EIC) merchant who lived in Patna around 1670–71, gives interesting information on the washing festival in the Ganga. In November, thousands of Hindus used to come from great distance to the confluence of the Ganga and Gandak (near modern Hajipur, north of Patna) both to wash themselves and to carry away Ganga water in pots. Marshall further reports that they used this water to wash their old parents and friends who could not come, and after washing with the Ganga water pilgrims thought their sins were forgiven for that year. The confluence of the Ganga, Gandak and Son perhaps represented a miniature form of the famous *tribeni sangam* (literally, the confluence of the triple braid) at Prayag, where the Ganga, Yamuna and (invisible) Sarasvati meet. The number of pilgrims at this local *sangam* must have numbered several thousand as Marshall notes, "[a]t this meeting a great concourse of people & all washing on one morning & endeavouring to wash as well as [as close to as] they can in the place where these two Rivers meete, several are yearly crowded to death."⁶⁰

⁵⁵ Thomas Watters, *On Yuan Chwang's travels in India 629–645 A.D.*, vol. 1 (London: Royal Asiatic Society, 1904), 319.

⁵⁶ Samarendra Narayan Arya, *History of pilgrimage in ancient India AD 300–1200* (New Delhi: Munshiram Manoharlal, 2004), 31.

⁵⁷ Mahdi Husain, *The Rehla of Ibn Battuta (India, Maldives Islands and Ceylon) translation and commentary* (Baroda: Oriental Institute, 1976), 4, 23, 38, 104, 236.

⁵⁸ Giovanni Gemelli Careri and Jean de Thévenot, *Indian travels of Thevenot and Careri: Being the third part of the travels of M. De Thevenot into the Levant and the third part of a voyage round the world by Dr. John Francis Gemelli Careri*, ed. Surendranath Sen (New Delhi: National Archives of India, 1949), 93.

⁵⁹ A recent study on the Kumbh Mela at Prayag in Allahabad shows how the colonial state managed an increasing swell of pilgrims that gathered from all over India; see Kama Maclean, *Pilgrimage and power: The Kumbh Mela in Allahabad, 1765–1954* (New York: Oxford University Press, 2008). According to Maclean, pp. 83–109, while Magh Mela is mentioned in early sources, the reference to Kumbh Mela is conspicuously absent from both Indian and European sources before the mid-nineteenth century.

⁶⁰ British Library (hereafter, BL), Manuscript Collections, Harley MS. 4254, fo. 9r; see also John Marshall, *John Marshall in India: Notes and observations in Bengal 1668–1672*, ed. Shafaat Ahmad Khan (London: Oxford University Press, 1927), 157–58.

Almost a century after Marshall, in November 1767 the British surveyor Lewis Felix Degloss described the great event in picturesque detail. When he reached Hajipur the great celebration was fast approaching and he believed that the “Gentouse” (Hindus) used the “Great Ceremony” to keep the site of confluence holy. At the confluence, he reports, “Lacks [one lack equals one hundred thousand] of people frequent to Bath and Wash at the mouth of the Ganduc where Zoane River and Ganges have equal resource in their Discharge.” Festivities were organized with pomp and circumstance, illuminated boats lighting up the banks, and fire-works were all very much part of the ambience. A show of piety to the poor and offerings to the Ganga went hand in hand as “the natives of wealth in a lose attire assembling at the Banck [sic] of the River [were] administering their alms to the poor and Offering to the Ganges.”⁶¹ The mood at the festival certainly appears to have been jubilant. Even if we hesitate in taking “the Lacks of people” literally, Degloss would have certainly seen a very large number of pilgrims who had come to take the holy dip and to be a part of the celebration. They also constituted the part of an imagined community formed around their common allegiance to the Ganga.

When Lewis Felix Degloss was busy surveying Bihar in 1761, one Mustapha, originally a resident of Constantinople and in the employ of the EIC undertook a journey from Calcutta through southern Bihar’s mountainous route to Ramghur on company business. He went through a harrowing experience on the highway as bands of pilgrims were marching to Sagar, the holy spot where the Ganga empties into the sea. These pilgrims were of a different sort.⁶² As Mustapha reports, “A body of five thousands saniassees [*sanyasis* or ascetic warriors] or devotees was going in Pilgrimage to the waters of the Ganges. They are all of them tall, stout, well limbed men, in general stark naked, but very well armed.” Our traveller further says that they had come from far and wide, places as distant as Delhi and even from Indian provinces bordering Persia and Tartary. As these well-armed pilgrims moved on, along the way others joined them “the conflux of all the gentoos that intend to partake of the benediction arising from an ablution in the holy waters of the Ganges, and some worshipping at the temple of sagor [Sagar] and in the sea.” At times the horde numbered twenty thousand people and such a huge army must have obtained supplies locally, for as our traveller remarks, “Unhappy the country they must pass throughout! They consume the land and prove no less destructive than a host of locustes [sic]. However it must be confessed they scarcely commit any disorder.”⁶³

⁶¹ BL, Asia, Pacific and Africa Collections (hereafter, APAC), India Office Private Papers (hereafter, IOPP), Mss. Eur. Orme OV 9, “Abstract of Journal containing the proceedings of Lewis Felix Degloss Captain of Engineers and Surveyor, in coarse [sic.] of survey in the Province of Subah Bahar, commencing November 29, 1766” (hereafter, “Abstract of the Journal...Nov. 29, 1766”), fo.13r.

⁶² See William R. Pinch, *Warrior ascetics and Indian empires* (Cambridge: Cambridge University Press, 2006).

⁶³ BL, APAC, IOPP, Mss. Eur. Orme OV 6, fo. 10r. In the fourteenth century, Ibn Battuta also refers to this pilgrimage on the Ganga, though without naming Sagar. See Husain, *The Rehla of Ibn Battuta*, 235–36.

The above examples suggest that the tradition of pilgrimage to the Ganga was very old and gradually, with the passage of time, it became even more widespread. Mustapha referred to pilgrims coming all the way from the border regions of Persia and China and going to Sagar in Bengal. Thus, the members of an imagined community connected to the Ganga lived not only in the south of the Indian subcontinent, but they could also be found in the north and northwest. Thus, the Ganga attracted the pilgrims from far and wide and the imagined community of river worshippers had considerable geographic reach. As the British assumed political power since the mid-eighteenth century, they took a keen interest in observing as well as regulating the pilgrim traffic.⁶⁴ The pilgrimages such as Deoghar-Baidyanath were closely linked to the Ganga as the pilgrims were obliged to take the sacred water from the river to make an offering to the idol of the god Shiva.

Ganga Consumption

Ganga water was used and consumed in myriad ways. Some used it for spiritual salvation and for ritual performances and purification; others used Ganga water and the river for consumption and health as well as for symbolic purposes. About the ceremonial consumption of Ganga water the seventeenth-century French traveller Jean Baptiste Tavernier relates that at the occasion of a marriage guests were treated with a drink of sacred water, “for each of the guests three or four cupfuls are poured out; and the more of it the bridegroom gives them to drink the more generous and magnificent he is esteemed.” Tavernier further notes that in this way sometimes two to three thousand rupees worth of Ganga water was consumed at a wedding, the expenses being incurred chiefly by the transportation as well as the tax charged by the chief Brahman.⁶⁵ There might well have been a commercial economy in the trade of Ganga water, benefitting the Brahmans and porters, though it is hard to guess the size of such trade. The drinking of Ganga water was not limited to Hindus alone, for Philippus Baldaeus, a seventeenth-century Dutch clergyman in southern India, relates that “The *Mahometans* are to this day not free from that Superstition, the Water of the *Ganges* being sold among them in Bottles at a very good Price, as we do our Spaw-Waters; and they pay a considerable Custom for it.”⁶⁶

⁶⁴ West Bengal State Archives (WBSA), Kolkata, Revenue Department (Sayer) 14th January to 12th August 1791, vol. 2, Fort William the 15th July 1791, pp. 250–62. See for example, how the collector closely observed the Grand Ceremony at Deoghar in order to be able to regulate it on the lines of the Gaya pilgrimage. It is remarked that the ceremony consists of pouring Ganga water on the head of the image.

⁶⁵ Jean-Baptiste Tavernier, *Travels in India by Jean-Baptiste Tavernier*, trans. V. Ball, ed. William Crooke, 2nd ed. (London: Oxford University Press, 1925), 198.

⁶⁶ “De *Mahometanen* zijn mede niet vry van deze superstitie, als boven is aangewezen. Dit water van de *Ganges* word in potten en kruyken vervoert, gelijk by ons het *Spa-water*.” See Philippus Baldaeus, *Naauwkeurige Beschryvinge van Malabar en Choromandel, der zelve aangrenzende ryken, en het machtige eyland Ceylon. Nevens een omstandige en grondigh doorzochte ontdekking en wederlegginge van de afgoderye der Oost-Indische heydenen. Het Eerste Capittel: Naauw-keurige beschrijvinge der Indische kusten Malabar en de Choromandel*, (Amsterdam: 1672), 188. See also, Philippus Baldaeus, *A true and exact description of the most celebrated East-India coasts of Malabar and Coromandel and also*

For many Muslim rulers, Ganga water was a necessity.⁶⁷ When Muhammad bin Tughlaq transferred his capital from Delhi to Daulatabad (formerly Deogiri) in the Deccan in 1327 AD, Ganga water was carried there for the Sultan's use, even though it caused much inconvenience as the river was located forty days away.⁶⁸ The Mughal emperor Akbar used Ganga water both at home and while on travels and he called it "the water of immortality." If the royal chef had to use rainwater or the water from some other rivers for cooking, Akbar made sure that a little Ganga water was included.⁶⁹ Sebastien Manrique, a seventeenth-century Portuguese traveller and Augustinian friar, remarks that some Muslim rulers of Bengal washed themselves in Ganga water and used it during their coronation ceremonies.⁷⁰ Such use of Ganga water was the continuation of "an authentically Indian imperial ritual" though, in most cases, the Islamic rhetoric of kingship glossed over such association with Hindu symbols.⁷¹

Apart from the consumption of Ganga water and its use for political ends, the Ganga impinged on the health discourse as well. Walter Hamilton noted that besides its sanctity, Ganga water had a reputation for its medicinal properties and because of this many Muslims drank it. "In 1792, Abd ul Hakeem, the reigning Nabob of Shahnoor, near the west coast of India, although a Mahomedan, never drank any other water."⁷² At times the banks of the Ganga served as shelters to stem the spread of the cholera. When Muhammad bin Tughlaq was campaigning in Malabar and Telangana, cholera broke out among his troops. He rushed back to the newly founded capital at Daulatabad and from there he marched along with his army to the banks of the Ganga and encamped there.⁷³ Might we then assume that such a health restoring effect of the Ganga was not a secret for Muhammad bin Tughlaq and his cholera stricken troops? Many centuries later, Mark Twain, the American traveller and writer, related the

of the Isle of Ceylon; translated from the high-Dutch printed at Amsterdam, 1672 (1745; repr. New Delhi: Asian Educational Services, 1996), 662. Thanks to its ritual value, salt made from the sacred Ganga water in the Twenty Four Parganas and Jessore in Bengal could be sold at a higher price than the superior salt of Hijili and Chittagong. See Sayako Kanda, "Environmental Changes, the emergence of a fuel market, and the working conditions of salt makers in Bengal, c. 1780–1845," *International Review of Social History* 55 (2010): 136, Kanda cites British Parliamentary Papers, vol. 26, 1856, Appendix F, no.2.

⁶⁷ The practice of drinking Ganga water spread among the Muslim ruling elite. For a collection of notes from different foreign travellers' accounts indicating this practice see Jagamohan Mahajan, *Ganga observed: Foreign accounts of the river*, 2nd ed. (Varanasi: Indica Books, 2003), 20–24. Even the supposedly orthodox Mughal emperor Aurangzeb was no exception to this general rule as Jean de Thevenot found out that "The Great Mogul drinks commonly of the Water of the Ganges, because it is much lighter than other Waters." See Careri and Thevenot, *Indian travels of Thevenot and Careri*, 96.

⁶⁸ Husain, *The Rehla of Ibn Battuta*, 4.

⁶⁹ Abul Fazl Allami, *The Ain-i-Akbari*, trans. H. Blochmann, vol. 1 (1927; repr. New Delhi: Oriental Books Reprint Corporation, 1977), 57–58.

⁷⁰ Fray Sebastien Manrique, *Travels of Fray Sebastien Manrique 1629–1643: A translation of the Itinerario de las Misiones Orientales with introduction and notes*, trans. C. Eckford Luard, et al., vol. 1 (Oxford: Hakluyt Society, 1927), 77.

⁷¹ Eaton, "Temple Desecration and Indo-Muslim States," 268–69.

⁷² Walter Hamilton, *A geographical, statistical, and historical description of Hindostan and the adjacent countries*, vol. 1 (London, 1820), 13.

⁷³ Husain, *The Rehla of Ibn Battuta*, 147.

observations of British scientist E. H. Hankin regarding the remarkable capacity of Ganga water in neutralizing cholera bacteria.⁷⁴ Thus, the imagined community was formed not only around material bounty and spiritual salvation but also regarding the health benefits of the Ganga.

An excursion on the Ganga proved to be highly beneficial for the sick Mubarak Ali Khan, Nawab Nazim of Bengal. In September 1829 the British Civil Surgeon issued a sick certificate for the Nawab with the recommendation that he should make a three-month-long excursion on the Ganga up to Patna or Banaras “in order that he may not only have the benefit of pure air, but that his mind may be amused by the novelty of the scenery, advantages he would not derive on a shorter excursion.” It was further stated in the certificate that “His Highness has been some time past in a delicate state of health, which has of late been accompanied with a great degree of nervous debility.”⁷⁵ As it was reported from the Fort William, “[w]e were gratified to learn from the annexed correspondence that His Highness had returned to Moorshedbad in December in much better health, though not completely recovered.” Hence in March 1831 we hear that the Nazim wished “to proceed a second time on the River as far as Patna for the Recovery of his health” and such desire of His Highness was duly complied with by the Company which sanctioned 15,000 rupees to defray the estimated expenses.⁷⁶ On these long excursions the Nawab must have lived an amphibious life on the boat in the Ganga, probably taking a dip now and then. As Mark Twain notes “many sick pilgrims had come long journeys in palanquins to be healed of their maladies by a bath; or if that might not be, then to die on the blessed banks and so make sure of heaven.”⁷⁷

We have seen the consumption of Ganga water and the use of the river and its water on various occasions, for political symbolism and also for the restoration of health. Its use was not community specific and both Hindus and Muslims were served by the river and its waters. Interestingly, the best of all hymns ever composed in the river’s honour was written by a Bengali Muslim worshipper, Darab or Dharaf Khan.⁷⁸

⁷⁴ Mark Twain, *Following the equator and anti-imperialist essays*, fwd. Shelley Fisher Fishkin, intro. Gore Vidal, afterword Fred Kaplan (1897; repr. New York: Oxford University Press, 1996), 499–500.

⁷⁵ BL, APAC, India Office Records (hereafter, IOR), Board’s Collections, F/4/1329/52503, pp. 13–14. Following his transfer from Bengal to Patna, the civil servant John Adams wrote to his father on the 17 April 1796, “I am very glad I am going there for in the hot weather Calcutta is very dull, and I hear Patna is a remarkably pleasant place. It [is] about 500 miles from Calcutta by water. It is in the province of Bahar which is much healthier than Bengal.” A few months later he wrote to his father from Patna on the 24 September 1796, “it is one of the healthiest situations in India” and “I never enjoyed my health better than I do at present.” BL, APAC, European Private Papers, Mss. Eur. F 109/81, fos. 1–3, also loose sheets of paper without any folio mark.

⁷⁶ BL, APAC, IOR, Board’s Collections, F/4/1329/52503, pp. 3, 5; see also Francis Zimmerman, *The jungle and the aroma of meats: An ecological theme in Hindu medicine* (California: University of California Press, 1987). Zimmerman discusses the *anupa* (marshland) and *jangala* (dry land) conditions impinging on health in the medicinal discourses of the ancient Hindu medical treatises. On the advice of doctors, the Bengali Nawab Mubarak Ali Khan went for excursions upstream the Ganga in order to benefit from the healthy, dry air of the relatively less humid environment of Patna and Banaras and to avoid the insalubrious air of the humid delta.

⁷⁷ Twain, *Following the equator*, 473.

⁷⁸ Abhay Charan Mukerji, *Hindu fasts and feasts* (Allahabad: Indian Press, 1918), 80.

His sacred composition called *Ganga-Stotra* is still sung by the Bengali devotees of the river.⁷⁹ Also the goddess Ganga appears invariably in the mythological tales espoused by the *ghazis* and *pirs* in the Bengali Islamic syncretistic traditions.⁸⁰ Thus, the Ganga helped in shaping an imagined community which identified itself with the river by singing hymns, by making pilgrimage and using the Ganga and its water for political and health purposes. This community comprised of diverse stocks of people drawn from a number of ethnic, linguistic and religious backgrounds. They hardly knew each other yet they formed an imagined community linked to the Ganga in some way or the other.

Various mythological tales linked the river with the celestial spheres and its origin was imagined from the waters stored in the vaults of heaven as we saw above. The Ganga was also believed to have restored the sixty thousand dead sons of Sagara to heaven. Since the river was assumed to be a link between the earth and heaven, a pious Hindu always sought to be cremated on the banks of the Ganga with the belief of attaining heaven thereby. If cremation on the banks of the Ganga was not possible then a descendant was obliged to immerse the mortal remains in the river—a rite that Jawaharlal Nehru, as we have seen, sought to be performed on his demise, although he refused to attribute any religious meaning to this act. This practice had a pan-Indian appeal among all classes of Hindus. A seventeenth-century Portuguese account relates a story about the pilgrimage undertaken to the Ganga in Bengal by Ram Varma, the raja of Cochin on the Malabar Coast. The raja eventually died on 11 September 1600 when he was still about 80 leagues away from the river. He was cremated on the banks of the Ganga. The deceased raja had brought his mother's ashes too which were also committed to the river.⁸¹ More than two hundred years after Ram Varma had died, the ritual bondage between the royal household and the river remained intact, and in the early nineteenth century, the mortal remains of the Cochin rajas were carried all the way from south India to Banaras to be committed in the sacred river.⁸² The link between the Ganga and royal family, thus, seems to have remained virtually unbroken since at least the first millennium AD.

In Hindu popular tradition the Ganga is believed to be a river which ensures a pathway to heaven and millions of people still rush to the river on every possible occasion. The ancient belief of the Ganga as a celestial stream continues to form a very basic core of popular religious perception. At almost all pilgrimage centres priests called *Ganga-putras* (sons of the Ganga) monopolize the rituals connected with the worshipping as well as committal of ashes to the river. At each bathing season they

⁷⁹ Darian, *The Ganges in myth and history*, 159.

⁸⁰ Asim Roy, *The Islamic syncretistic tradition in Bengal* (Princeton: Princeton University Press, 1983), 237–39, 242–43.

⁸¹ José Leal Ferreira and Rashmi, “Relatorio da Pimenta, A Report by Francisco da Costa, 1605,” in *Portuguese presence in India during the sixteenth and seventeenth centuries*, ed. Yogesh Sharma and José Leal Ferreira (New Delhi: Viva Books, 2008), 158–59.

⁸² BL, APAC, IOR, Board's Collections, F/4/1466/57632, Extract political general letters from Fort St. George, 1834, pp. 1–11.

make a good living out of the gifts and donations received from pilgrims and bathers.⁸³ When the descendants of the “late Rajahs of Cochin” were in Banaras it was reported on 22 January 1834 that “the Ganga pootrens (sons of the Ganga) demand Rupees two thousand for being allowed to throw the Ashes into the river and for the performance of ceremonies attendant thereon.”⁸⁴ Indeed the rituals of heaven ensured steady incomes for at least one group of religious specialists.

Not only Indians believed that the Ganga originated from heaven. So did Greeks and Romans, and medieval European geographers and writers who thought that the Ganga was a river of paradise. How did such an image of the Ganga pervade the western Eurasian world, how did it generate curiosity in the Age of Enlightenment and how did Europe ultimately discover the Ganga? British surveyors of the late-eighteenth and early-nineteenth centuries were eager to explore and map out the source of the famed river by the exigencies of colonial control and the age-old European curiosity about the source of the Ganga. The following section discusses the outsider’s image of the Ganga, which largely corroborates what Indians themselves thought about the river.

Section III: Discovering the Ganga

During the medieval and early modern periods, in ecclesiastical circles as well as among secular European geographers, paradise and the source of the Ganga evoked great curiosity. It was commonly believed that the river had its origins in paradise, a belief that originated from a flawed understanding of the writings of the Greek and Roman geographers. Some armchair travel accounts of the European Middle Ages also gave currency to these myths and discussed the fabled lands and paradise at length. As books became more widely available after the growth of print culture in fifteenth-century Europe, curious readers became consumers of all sorts of travel literature. Many readers in Europe relied on these fables and believed famous rivers of the Eurasian world to have their origins in paradise. As we will see below, Christopher Columbus, the discoverer of the Americas, hoped to find the river of paradise or the Ganga. In medieval Europe when empirical geographical information was hard to come by, metaphysical speculations were given free rein. However, during the classical period geographers and scholars from the Greco-Roman world had taken a keen interest in and collected some first-hand information on India and the Ganga.

Early Contacts across Eurasia

The Persian or Achaemenid Empire (559 to 330 BC) facilitated long-distance communication across a large part of the Eurasian world. During the reign of Achaemenid kings, parts of India and most Greek cities on the coast of Asia Minor came under the suzerainty of a single polity. Such political unification facilitated manifold contacts between the Greeks and the Indians who were active as

⁸³ Mukerji, *Hindu fasts and feasts*, 78.

⁸⁴ BL, APAC, IOR, Board’s Collections, F/4/1466/57632, Extract political general letters from Fort St. George, 1834, p. 5.

administrators, mercenaries and merchants in the service of empire. In spite of such contacts, hardly any first-hand eyewitness Greek accounts of India from the Achaemenid period have been preserved, although there are some scattered references to Indians in the works of the Greeks who were in the employ of the Persians. Though there are grains of truth in these accounts, they are highly exaggerated and fantastic.⁸⁵

The extant information drawn from the fragments of the *Geography* (500 BC) of Hecataeus (549 to 486 BC), the *Histories* of Herodotus (484 to 425 BC) and *Indica* of Ktesias (late fifth to fourth century BC) do not enable us to form a sufficient and reliable picture of India. Ktesias, who worked as a physician in the Persian court at Susa from 416 to 399 BC, may have occasionally met with Indians or Persian officers who had served in the Punjab or the Indus region. His information about India is occasionally correct and at times fantastic and wondrous.⁸⁶ Ktesias does mention that “[t]hrough India there flows a certain river, not of any great size, but only about two stadia [about a quarter of a mile] in breadth, called in the Indian tongue Hyparkhos, which means in Greek the bearer of all things good.” His account seems to relate it with certain myths as the provider of amber as the Indians themselves do not produce amber. Pliny sheds some light on the course and direction of the river based on the authority of Ktesias when he writes, “Ctesias says that in India is a river, the Hyperbarus, and that the meaning of its name is the bearer of all good things. It flows from the north into the Eastern Sea [Bay of Bengal].”⁸⁷ As Alexander wanted to terminate his campaign after reaching the Ganga, which the Greeks supposed to be the end of the world, we may infer that the Ganga was assumed to be an important geographical landmark by the late fourth century BC. Alexander, after the initial success of his campaign in the Punjab, gathered information about the Ganga and the armies of the east from his local informants and allies such as Phegeus, a local prince of a region near the Beas River, and Porus. That there existed a great plain (the Ganga plain) and a great kingdom to the east were new discoveries to the Greeks.⁸⁸ This information about India’s geography aroused curiosity among the Greeks and within a decade of Alexander’s campaign we find Megasthenes at Pataliputra (modern Patna).

After Alexander’s death one of his generals Seleucus Nicator fought Chandragupta Maurya and ultimately ceded a large amount of territory in exchange for five hundred elephants, a huge military asset for waging war against his adversaries such as Antigonos in Asia Minor and Ptolemy in Egypt. This exchange resulted in a

⁸⁵ Jean W. Sedlar, *India and the Greek world: A study in the transmission of culture* (Totowa: Rowman and Littlefield, 1980), 8–15.

⁸⁶ J. W. McCrindle, *Ancient India as described by Ktesias the Knidian; Being a translation of the abridgement of his “Indika” by Photios, and of the fragments of that work preserved in other writers* (1883; repr. Amsterdam: Philo Press, 1973), 7–17. He knew about gold and silver in the mountains of India, elephants, talking parrots and so on, but he also included fabulous tales of the Indian dogs of very great size that can fight even with lions, a fountain of liquid gold and reed plants along the banks of the Indus so thick that their stems could hardly be encompassed by two persons.

⁸⁷ Cited in Darian, *The Ganges in myth and history*, 163.

⁸⁸ A. B. Bosworth, *Alexander and the East: The tragedy of triumph* (Oxford: Clarendon Press: 1996), 74–80.

marital alliance between the Seleucids and the Mauryas and a Greek bride came to reside in Pataliputra. Several Greek ambassadors visited the Mauryan court at Pataliputra and at least two of them—Daimachos and Megasthenes—are known to have written books based on their personal observation. While the work of Daimachos has been lost completely, the *Indica* of Megasthenes has survived in fragments. From this work we learn much about India during the Chandragupta Maurya's reign (321 to 297 BC) and also about the Ganga.⁸⁹

Megasthenes was much impressed with the Indian rivers generally, but he considered the Ganga the greatest of all rivers in the world and noted that “neither the Egyptian Nile, nor the Danube which flows through Europe, can for a moment be compared” with it in terms of the water the river discharged.⁹⁰ Even Arrian, who takes a critical view of the accounts available to him, seems to be in agreement with Megasthenes about the greatness of the Ganga. Thus Arrian wrote, “[w]e ought not, therefore, to distrust what we are told regarding the Indus and the Ganges, that they are beyond comparison greater than the Ister [Danube] and the Nile.”⁹¹ Megasthenes also commented on the source of “the Ganga, as some maintain, [is] rising from uncertain sources...; while others think that it rises in the Skythian mountains ... [o]thers again assert that it issues forth at once with loud roar from its fountain, and after tumbling down a steep and rocky channel is received immediately on reaching the level plains into a lake, whence it flows out with a gentle current.”⁹² It is interesting to note that neither Megasthenes nor Arrian relates the origins of the Ganga to paradise or talks about the river's celestial connections. It is possible that during Megasthenes' visit to Pataliputra the Indian myths about the celestial origins of the Ganga were yet to gain popularity. Perhaps it was only in the later period, somewhere between the third and first centuries BC, that the legends around the Ganga such as “Gangavataran” gained currency. Around the third century AD, the Ganga had already caught the imaginations of poets and literary figures of the Roman world and Christian writers began to identify the Pishon, a river of Eden in the book of Genesis, with the Ganga.⁹³

Starting in the first century AD, trade contacts between the Roman Empire and India acquired new dimensions as the direct maritime route linking India with the Red Sea was supposedly discovered by a Greek sailor called Hippalus.⁹⁴ In any case, during the Roman Empire the Red Sea port of Myos Hormos received more than a hundred ships laden with the Asian merchandise and the ship captains brought new data on

⁸⁹ Sedlar, *India and the Greek world*, 62.

⁹⁰ Megasthenes, *Ancient India as described by Megasthenes and Arrian; being a translation of the fragments of the Indika of Megasthenes collected by Dr. Schwanbeck, and of the first part of the Indika of Arrian by J. W. McCrindle*, rev. by R. C. Majumdar, 2nd ed. (Calcutta: Chuckervetty, Chatterjee, 1960), 45.

⁹¹ Megasthenes, *Ancient India as described by Megasthenes and Arrian*, 197–99.

⁹² Megasthenes, *Ancient India as described by Megasthenes and Arrian*, 63.

⁹³ Darian, *The Ganges in myth and history*, 167–69.

⁹⁴ Lincoln Paine, *The sea civilization: A maritime history of the world* (New York: Alfred A. Knopf, forthcoming, 2013) challenges the “discovery” by Hippalus and suggests that trade contacts might have developed much earlier.

astronomical observations made in India and Ceylon.⁹⁵ From the Red Sea ports, Asian goods were carried overland to the Nile and then down to the Mediterranean port of Alexandria and transhipped to Rome. As the trade expanded, Alexandria emerged as a cosmopolitan city of the Roman Empire where not only Asian goods but also merchants and scholars converged and disseminated knowledge of the eastern world.⁹⁶ Scholars at Alexandria built on legacies of the works of earlier geographers and scholars such as Eratosthenes, Posidonius, Hipparchus and Apollodorus. It has been suggested that the Roman geographer Strabo spent considerable time there and much of the material for his *Geography* would have come from the books kept in the library of Alexandria.⁹⁷ Later, in the second century AD, Ptolemy carried forward the scholarly tradition of Alexandria and bequeathed a most up-to-date work on geography.

These geographers certainly benefitted from the large repertoires of geographical works at Alexandria and gained fresh information to critique and improve upon the earlier works. Yet many imperfections and gaps in geographical knowledge of India and the Ganga remained. For example, Strabo located the source of the Ganga in the Caucasus. Subsequent historians such as Arrian and Curtius reiterated Strabo's views. Steven Darian suggests that the early geographical knowledge which conceived the source of the Ganga in the Caucasus inspired the medieval Christian theological writers of Europe. They imagined the myth of paradise and its four rivers—the Ganga among them—being located in the Caucasus.⁹⁸ As late as the seventeenth century Edward Terry, English traveller to India, was still echoing the same sentiment of the Ganga originally issuing from the Caucasus Mountains.⁹⁹ Apart from the source of river and paradise, the Ganga became an important geographical marker ever since Ptolemy drew his world map. Subsequent maps distinguished between India within and India beyond the Ganga (*India intra-Gangem* and *India extra-Gangem*), a cartographic convention that continued well into the early modern period. The Ganga thus became the pivotal marker in the western map-makers' geographical understanding of India which was essentialized by the river.

The ancient geographical tradition of the Greco-Roman world which laid much emphasis on empirical observations stagnated in the Middle Ages. Many geographical misconceptions took root, among the most glaring of which was confusing Ethiopia for India and locating there the mythical Prester John, the powerful Christian ruler who was believed to have been the potential ally of Christian Europe in its war against the Saracens. This was of a piece with contemporary geographers' conception of the Indian

⁹⁵ William Arthur Heidel, *The frame of the ancient Greek maps: With a discussion of the discovery of the Sphericity of the earth* (New York: American Geographical Society, 1937), 105.

⁹⁶ Donald F. Lach, *Asia in the making of Europe*, vol. 1, bk. 1, *The century of discovery*, (Chicago: University of Chicago Press, 1965), 16–18.

⁹⁷ Harold T. Davis, *Alexandria, the golden city*, vol. 1, *The city of the Ptolemies* (Evanston: Principia Press of Illinois, 1957), 191.

⁹⁸ Darian, *The Ganges in myth and history*, 167.

⁹⁹ Edward Terry, *A voyage to East-India: Wherein some things are taken notice of our passage thither, but many more in our abode there, within that rich and most spacious empire of the Great Mogol* (London, 1655), 88.

Ocean as an inner lake bounded by land on all sides. Indeed the Church Fathers played a great role in the making of this and many other myths that were widely circulated in medieval and early modern Europe. The Ganga too came to be discussed among the Church Fathers and Christian geographers. Many misconceptions about its origins were uncritically accepted and several myths and legends were woven around the paradise and river theme.

As the tradition of empirical geographical knowledge was lost, the literal interpretations of Biblical stories became the foundations of the Church Fathers' geographical knowledge and they located the earthly paradise, a realm of deathlessness (immortality), to the east of India. The long poem *L'image du monde* (1245 or 1247) written in French for presumably lay consumption described the terrestrial paradise and positioned India on its further side.¹⁰⁰ Others positioned paradise on the summit of the highest mountains "almost touching the moon." Medieval chroniclers such as the English Benedictine Ranulf Higden located it in a spacious country, "not less in size than Egypt or India." As a result of these metaphysical discussions, paradise was brought down from such a mountain summit to somewhere in the contiguous regions of the habitable world, because the four rivers of paradise could never have flowed through the well-known countries had paradise not been located in their vicinity.¹⁰¹

A fourteenth-century armchair travel account written by the pseudonymous Sir John Mandeville tried to lend some credence to the narrative of earthly paradise. Mandeville confessed to his reader that he himself had never been to paradise but related what he had been told by those who actually tried to reach it: "And in the most high place of Paradise, even in the middle place, is a well that casteth out the four floods that run by diverse lands; of the which the first is cleped [named] Pison or Ganges, that is all one, and it runneth throughout Ind or Havilah, in the which river be many precious stones and much *lignum aloes* and much gravel of gold."¹⁰² In addition to Mandeville, other Church Fathers, travellers, and geographers including Josephus, St. Jerome, Cosmas Indicopleustes, Isidore of Seville, Giovanni de' Marignolli, Martin Behaim described paradise and the Ganga of gold and precious stones in their respective works. A twelfth-century Latin adaptation of the fifth-century work, *Iter ad Paradisum*, explains Alexander's march to the Ganga as a search for the "Earthly Paradise."¹⁰³ Such descriptions of paradise and the Ganga formed part of the medieval European literary and scholarly discourse, and Mandeville's "best-seller" in particular,

¹⁰⁰ Lach, *The century of discovery*, vol. 1: 28. Philippus Baldaeus also espoused a similar view, see *Naauwkeurige Beschryvinge van Malabar en Choromandel*, 187. See pp. 186–89 for a discussion on the source of the Ganga, and the Indians' perception of the river.

¹⁰¹ Charles William Chadwick Oman, *Unfortunate Colonel Despard and other studies* (1922; repr. New York: B. Franklin, 1967), 218–20.

¹⁰² John Mandeville, *Mandeville's travels*, ed. M. C. Seymour (London: Oxford University Press, 1968), 235. For the sources of Mandeville's travel, see also C. Raymond Beazley, *The dawn of modern geography: A history of exploration and geographical science from the middle of the thirteenth to the early years of the fifteenth century (c. A.D. 1260–1420)*, vol. 3 (Oxford: Clarendon Press, 1906), 319–23.

¹⁰³ George Cary, *The medieval Alexander* (Cambridge: University Press, 1956), 19; Darian, *The Ganges in myth and history*, 180–83.

must have impinged upon the mind of the European reading public. The ongoing “printing revolution” in Western Europe since the fifteenth century added to the curiosity of the reading public who consumed “true” tales of travel as much as they did myth and fables about the exotic lands.¹⁰⁴ The wider circulation of travel literature also attracted those who were about to embark on the voyage of exploration in Renaissance Europe since the late fifteenth century.

Christopher Columbus, the European “discoverer of the New World”, specifically mentions those authorities who located the earthly paradise to the East.¹⁰⁵ On his fourth voyage, Columbus anchored off the coast of Panama presuming that he had reached India judging from apparent signs of civilization and an abundance of gold among the natives. From the inhabitants of Veragua he learnt that the province of Ciguare was nine days’ journey to the west. He was also told that “the sea surrounds Ciguare, and that from there it is about ten days’ journey to the river Ganges.” In believing Ciguare to be only few days away from the Ganga, where the earthly paradise was located and where plentiful gold was found, Columbus was only trying to conform to the mythical image of the river and paradise transmitted in the fantastic or legendary traditions of medieval Europe.¹⁰⁶

Cleary, the Ganga along with the earthly paradise had become an important landmark for the explorers and navigators of the Age of Exploration. While the Ganga was ultimately reached by the Portuguese by the early sixteenth century, paradise or the source of the river continued to mystify the European geographers. The European geographical interest for knowing the course as well as source of the Ganga continued in the seventeenth and eighteenth centuries. In the eighteenth century, several maps tried to depict the course of the Ganga.

Ganga Mapping

The early modern trade between Europe and India involved cross-continental interactions and the exchange not only of commodities and bullion but of ideas, geography, myths and religions. As direct maritime trade links were established between Europe and India from the late fifteenth century, the earlier geographical misconceptions were subjected to empirical data obtained from traders and travellers. João de Barros, the Portuguese compiler of information pertaining to the Indies,

¹⁰⁴ For the “printing revolution,” see, Elizabeth L. Eisenstein, *The printing revolution in early modern Europe* (Cambridge University Press, 2012), 1–12. See also, Andrew Gow, “Gog and Magog on *Mappaemundi* and early printed world maps: Orientalizing ethnography in the apocalyptic tradition,” *Journal of Early Modern History* 2:1 (1998):61–88.

¹⁰⁵ Cecil Jane, trans. and ed., *Select documents illustrating the four voyages of Columbus: Including those contained in R. H. Major’s select letters of Christopher Columbus*, vol. 2 (London: Hakluyt Society, 1933), 38. During his third voyage Columbus wrote to the Spanish king Ferdinand referring to agreement amongst Isidore, Bede, Strabo and St. Ambrose about the earthly paradise being located in the East.

¹⁰⁶ Jane, *Select documents*, 2:82–86; see also Kirkpatrick Sale, *The conquest of paradise: Christopher Columbus and the Columbian legacy* (New York: Knopf, 1990), 203–6; Alexander von Humboldt, *Cosmos: A sketch of a physical description of the universe*, trans. E. C. Otté, vol. 2 (New York, 1850), 251; and Darian, *The Ganges in myth and history*, 183–84.

published his map of the Ganga in 1550 which may be considered the first European map of the river in the Age of Exploration. Though de Barros must have relied on the data supplied by the Portuguese merchants coming to Bengal, his map lacked precision and showed only the estuary.¹⁰⁷ During the seventeenth century, Dutch merchants were able to draw a map of the Ganga but it remained imperfect. It hardly depicted stretches of the Ganga beyond that section of the river in Bengal and Bihar that was known to the Dutch owing to their trading operations in the region. As the Mughal Empire began to decline and the Europeans encountered little restrictions in their access to the hinterland, their cartographic knowledge of the river grew rapidly in the eighteenth century. With the success of the English Company a host of surveyors, missionaries and other enthusiastic cartographers and naturalists contributed to the growing knowledge of the actual course as well as the source of the Ganga, which was finally surveyed and mapped in the early nineteenth century.¹⁰⁸

The Dutch Reformed Church clergyman Francois Valentijn published his *Oud en Nieuw Oost Indie* in the early eighteenth century, comprising of eight volumes dealing with various regions of Asia. The fifth volume of Valentijn's work deals with Coromandel and Bengal. He had never visited Bengal himself and had obtained most of his information from the Dutch Company's servants active in the area. His map of Bengal was based on a map in the possession of Mattheus van den Broucke of the VOC director in Bengal from 1658 to 1663. This map shows the course of the Ganga up to Chhapra to the north of Patna. It also depicts the overland route following the river up to Taaspour (Tajpur), northwest of Chhapra on the southern banks of the Ganga. Flags shown along the course of the river indicate Dutch factories at places such as Hugli, Rajamahall, Patna and Chhapra. The course of the river is rather imprecisely demarcated, especially where it turns southeastwards from Chhapra to the Bay of Bengal. On this map the tributaries of the Ganga such as the Son, Gandak and Baghmata are not indicated.¹⁰⁹ This map clearly shows the limited cartographical knowledge about the course of the river and its tributaries at the time.

An English map of the first half of the eighteenth century depicts the entire course of the Ganga as well as the important pilgrim centres such as Haridwar, Allahabad, Banaras and Sagar. The map is drawn in two parts, the first extends from a little above Haridwar to Banaras and the second part sketches the river from Patna to Sagar, the meeting point of the Hugli branch of the Ganga and the sea. The former is very casually drawn and abstract, possibly based on an Indian original, while the latter is European in style but lacking any indication of longitude and latitude. The first part shows the Ganga splitting into more than half a dozen streams below Haridwar. These

¹⁰⁷ P. L. Madan, *River Ganga: A cartographic mystery* (New Delhi: Manohar, 2005), 76.

¹⁰⁸ Madan, *River Ganga*, 104.

¹⁰⁹ Francois Valentijn, *Oud en nieuw Oost-Indiën, vervattende een naaukeurige en uitvoerige verhandelinge van Nederlands mogentheyd in die gewesten*; pt. 5.1, *Keurlyke beschryving van Choromandel, Pegu, Arrakan, Bengale* (Dordrecht, 1726), "Nieuwe Kaarte van't Koninckryk Bengale, door last van den Ed: Heer Mattheus van den Broucke Zal:r in zijn Ed: Leven Directeur in Bengale en Raad Ordinaris van Nederlands India, Opgesteld door Joh: van Leenen," facing p. 146.

channels are shown in the shape of a cow's head with the remark, "The Rock which the Indians say is like a cows head." The toponyms of the second map, in contrast, closely resemble the Dutch convention of spelling the place and river names. On this basis it has been suggested that the English map was possibly based on the map published in the *Oude and Nieuw Oost-Indiën* of Francois Valentijn.¹¹⁰

In 1755, the Dutchman Jan de Waal drew a coloured map showing the Ganga plain between Mau in the east of Patna and Banaras in the west. Not much is known about either the mapmaker or his objectives in making this map. It is possible that he had been to Patna as a merchant or that he relied on the information supplied by Dutch merchants' residing at Patna. The map depicts the Ganga and many of its tributaries, and the land routes and towns are very distinctly marked. All these serve to show the commercial importance of the region for the Dutch. At least the nine Dutch trading posts are shown by flags, the flag indicating the Patna factory being the largest and hence suggestive of its prominence. Other Europeans such as the English were reduced to only one settlement at Saidabad to the south of Patna. Another interesting aspect of the map is the depiction of the Bhojpur region in yellow colour. It is hard to guess what exactly the map maker had in mind but we know the highlighted region had had a turbulent history in terms of its relations with the Mughals. Overall, this map underlines a keen awareness of the region's economic and political significance, and above all the central place taken by the Ganga and its tributaries.¹¹¹

A few years after Jan de Waal's map, the English Samuel Dunn drew another map based on data collected by Henry Vansittart in Bengal in the 1760s. This map seems to be the accurate and most up-to-date before the map of Major James Rennell was published in 1781. Dunn's map shows the advances in cartographical knowledge about the actual course of the Ganga. The river has been charted out in intricate detail, showing many channels, islands and most of the tributaries falling into the Ganga. Although the course of the Ganga has been shown up to Allahabad, information about the river beyond Patna was clearly limited and the number of settlements along the river thins out rapidly.¹¹²

Since the second half of the eighteenth century, the growing political dominance of the English Company coincided with increasing knowledge of the course of the Ganga. As the coast became the new centre of political power, the Company projected the economic and political dominance of the maritime zone onto the hinterland. The Ganga channelized the British power to the upriver right in the heart of Hindustan. The British colonial expansion and the charting of the course of the Ganga progressed hand

¹¹⁰ J. J. L. Gommans, Jeroen Bos, Gijs Kruijtzter, et al., *Grote atlas van de Verenigde Oost-indische Compagnie*, vol. 6, *Voor-Indië, Perzië, Arabisch Schiereiland* (Voorburg: Atlas Maior, 2010), sheet 406.

¹¹¹ Nationaal Archief, The Hague, 4VELH 121; Gommans, et al., *Grote atlas*, sheet 408.

¹¹² BL, Map Room, Maps K. Top. 115.31. A map of Bengal, Bahar and Orixia, laid down by Samuel Dunn from original surveys and journals kept by Henry Vansittart, 1765–1770 AD. For the Company's efforts to map out Bengal and to keep geographical information secret, see Matthew H. Edney, *Mapping an empire: The geographical constructions of British India, 1765–1843* (Chicago: University of Chicago Press, 1997), 132–45.

in hand in the second half of the eighteenth century. By the second decade of the nineteenth century, the scientific mapping of the source of the Ganga and the emergence of the British as paramount power after their victory over the Marathas, a formidable contender for the Indian empire, were not a mere coincidence. From the European viewpoint, the discovery of the source of the Ganga was as unexpected and exciting as the British Indian Empire formation. However, there is a long history of European fascination about the source of the Ganga, particularly in the Age of Exploration.

Several myths about the source of the Ganga were circulating among the geographers and cartographers during the sixteenth century. The “Lago de Chiamay,” the supposed source of the Ganga, was believed to be located in the northeast corner of Assam. Lago de Chiamay first appeared in the preface to Giovanni Battista Ramusio’s edition of *The Book of Marco Polo* in 1553. According to Sven Hedin “Ramusio had access to Barros’ geographical manuscript, which, although the preface is dated July 1553, may easily have taken place a few years earlier.” Hedin further suggests that Lago de Chiamay already appeared in the maps of Gastaldi before 1550, and he quotes Nordenskiöld “[t]hat the first volume of Ramusio’s work was laid under the press in 1550.” Hedin argues that “Gastaldi got the information of the lake’s existence from Barros, probably at the same time as Ramusio got the short text of it.” It has been suggested that Barros got his information from traders and travellers to the east who might have heard of the discovery of the lake in the 1540s from the Portuguese traveller, Fernão Mendez Pinto.¹¹³ Later on, the Lago de Chiamay turned out to be a figment of Pinto’s imagination.

As the Age of Exploration continued, there was a heightened urgency among the European missionaries and travellers to find and locate the source of the Ganga. As the Portuguese Jesuit fathers came into contact with the Mughal court circles, the source of the Ganga generated curiosity among some of the Indian rulers. The Mughal emperor Akbar is believed to have dispatched a fact-finding mission to the source of the Ganga in the late sixteenth century.¹¹⁴ It has been suggested that after the Mughal expedition to the source of the Ganga the Indians came to know that *Gomukh* (lit. the cow’s head) was not the source of the river but that it “rises much higher in the Country towards the middle of Great Tartary.”¹¹⁵ In the seventeenth century, Edward Terry writes of Haridwar and *Gomukh* that the Ganga “passing through or amongst large Rocks, makes presently after a pretty full Current: ... That principal Rock, through which this river *Ganges* there makes a Current, is indeed, or (if not) according to the fancy of the Superstitious *Indians*, like a *Cow’s Head*...” (Italics in the original).¹¹⁶

¹¹³ Sven Hedin, “Early European knowledge of Tibet,” *Geografiska Annaler* 1 (1919): 316–18, 334; see also Fernão Mendez Pinto, *The travels of Mendes Pinto*, ed. and trans. Rebecca D. Catz (Chicago: University of Chicago Press, 1989), 266.

¹¹⁴ Niccolao Manucci, *Storia do Mogor or Mogul India 1653–1708*, ed. and trans. William Irvine, vol. 1 (1907; repr. Calcutta: Temple Press, 1965), 139–40; Madan, *River Ganga*, 102.

¹¹⁵ Hedin, “Early European knowledge of Tibet,” 294.

¹¹⁶ Terry, *A voyage to East-India*, 88.

After the British assumed political power, James Rennell published his survey of the course of the Ganga and Brahmaputra Rivers in 1781.¹¹⁷ The subsequent publication of his map charted the course of the Ganga with a fair degree of precision, though the source of the river still remained imprecisely located on the map. Rennell's map was largely based on a corrected map of Tibetan Lamas by Jean Baptiste Bourguignon d'Anville (1697–1782), the cartographer of the king of France and also on the information provided by a Jesuit missionary in India, Joseph Tieffenthaller. In the early eighteenth century, the Chinese emperor Kang-shi had sent two Lamas trained in geometry and arithmetic to survey the source of the Ganga and to bring water from it. However, it was discovered that the Lamas never reached the source themselves but that they had based their map on oral information collected from other Lamas residing in those parts of Tibet. In correcting the Lama's map d'Anville removed the head of the Ganga from latitude 29½° and carried it higher up to nearly 32°, although the actual source was located at Gomukh in the Gangotri glacier at 30° latitude. His map also placed the early course of the Ganga much to the north-west of the Himalayas. Rennell had himself expressed some doubts about the correctness of Lamas' map, as did Anquetil du Perron (1731–1805), who published the geographical researches of Tieffenthaller about the source of the Ganga in 1784. But the inadequacy of Tieffenthaller lay in the fact that he himself never made a journey to the source of the Ganga and obtained geographical information from native informants.¹¹⁸ Thus, it appears that even in the late eighteenth century the source of the Ganga was still shrouded in mystery and that geographical knowledge about its actual position relied only on inferred sources.

According to Dilip Chakrabarti, the works of Anquetil du Perron mark the beginning of theoretical research on the historical geography of the subcontinent. Chakrabarti quotes Carsten Niebuhr: "One still finds among the Indians, one of the oldest nations of the world, so many valuable remains of antiquity, which deserve more attention from the literati of Europe, than has been hitherto bestowed on them."¹¹⁹ In order to expand their horizons beyond Judaeo-Christian thought, the Western philosophers and the French encyclopaedists in particular were taking serious interests in the antiquities of India. Many believed India to be the source of culture and religion. For example, the French philosopher Voltaire was "convinced that everything has come to us from the banks of the Ganges, astronomy, astrology, metempsychosis, etc."¹²⁰ The

¹¹⁷ James Rennell, *An account of the Ganges and Burrampooter rivers* (London, 1781), 1–26.

¹¹⁸ H. T. Colebrooke, Esq. "On the sources of the Ganges, in the *Himádri* or *Emodus*," *Asiatic Researches comprising history and antiquities, the arts, sciences, and literature of Asia*, vol. 11 (1818; repr. Delhi: Cosmo Publications, 1979): 429–33. For the location of the confluence of the Alakhnanda and Bhagirathi streams at Devprayag (30° 9' N. latitude and 78° 31' E. longitude), see also James Bell, *A system of geography, popular and scientific, or A physical, political and statistical account of the world and its various divisions*, vol. 4 (Glasgow, 1832), 469.

¹¹⁹ Dilip K. Chakrabarti, "The development of archeology in the Indian subcontinent," *World Archaeology* 13:3 (1982): 326–27.

¹²⁰ Léon Poliakov, *The Aryan myth: A history of racist and nationalist ideas in Europe* (London: Sussex University Press, 1974), 185; also Chakrabarti, "The development of archeology," 328; For special

British explorations of the source of the Ganga may also have been inspired from the philosophical undercurrents sweeping Europe in the eighteenth century.¹²¹

With the assumption of the East India Company's rule since the second half of the eighteenth century, committed efforts were directed towards mapping and surveying the newly acquired territory. The new regime needed to generate geographical knowledge for purposes of administrative control of their new empire. The significance of the Ganga for the prosperity of the colonial possession was obvious to the early British administration who set about to undertake its scientific mapping. Thus, from the second half of the eighteenth century, much attention was directed to surveying the river and its source. According to the early colonial administrators, it was also a matter of the British national pride to map out the source of such a celebrated river. In the words of the late eighteenth-century orientalist H. T. Colebrooke, Esq., "Perhaps the national credit was concerned, not to leave in uncertainty and doubt a question which the *English* only have the best opportunity of solving; and one at the same time so interesting, as that of exploring the springs of one of the greatest rivers of the old continent, and whose waters fertilize and enrich the *British* territories, which it traverses in its whole navigable extent" [italics in the original].¹²²

The Hindu cosmography and other religious texts often located the source of the river in the Mansarovar (Sanskrit *Manas*, mind; *sarovar*, lake). Accordingly the Lamas also believed the river's source to be a lake which they called Mapama. These speculations came to an end with the survey by Lieutenant William Webb in the first decade of the nineteenth century. As a result of this survey previous knowledge about the Ganga rising in the lake Mansarovar to the north and west of the Himalayas was rejected. Further, Webb's survey found out that the source of the Ganga was south of the Himalayas.¹²³ In the first half of the nineteenth century, the great trigonometrical survey of India was able to dispel many myths about the source of the Ganga as well as speculations about the actual height of the Himalayan Mountains. The progress of British arms into the Himalayas after the Gurkha War (1814–15) paved the way for further geographical explorations. The trigonometrical survey was conducted by Lieutenant Webb, Captain John Hodgson and his successor James Herbert and as a result the actual source of the Ganga and the real height of the Himalayan Mountains were ascertained by the 1830s.¹²⁴ Interestingly, the British scientific discovery of the

interest taken by philologists and orientalists in nineteenth-century continental Europe in the study of the Sanskrit language and the Vedas that engendered "a second renaissance" in Europe, see Trautmann, *Aryans and British India*, 26–27, 188–89.

¹²¹ A similar quest to solve the geographical mystery led the British explorers to reach the source of the Nile in the nineteenth century, see Tim Jeal, *Explorers of the Nile: The triumph and the tragedy of a great Victorian adventure* (London: Faber and Faber, 2012). See also, John Keay, *Mad about the Mekong: Exploration and empire in South East Asia* (London: HarperCollins, 2012).

¹²² Colebrooke, "On the sources of the *Ganges*, in the *Himádri* or *Emodus*," 441.

¹²³ Colebrooke, "On the source of the *Ganges*, in the *Himádri* or *Emodus*," 442.

¹²⁴ John Keay, *The great arch: The dramatic tale of how India was mapped and Everest was named* (London: Harper Collins, 2000), 115–20; see also Bell, *A system of geography, popular and scientific*, vol. 4, 467–69. Bell writes, "From the brow of this curious wall of snow, and immediately above the

source of the Ganga confirmed one Indian legend that the river originated in the *Gomukh* at the Himalayas.

Conclusion

The external perception about the Ganga as the defining river of India confirms Indians' perception of the river as the well-spring of Indian civilization. Since evidence from both within the subcontinent as well as without suggests the centrality of the river, it is hardly surprising that an imagined community emerged in India which associated itself with the river in one way or another. The pilgrimage to the holy places on the banks of the Ganga, the purifying powers of its waters, and the river being a visible link between the earthly and celestial realms helped create a huge community of people with a firm attachment to the river over the course of several millennia. This helps explain why the ruling dynasties sought an actual or imagined association with the Ganga. Can it be then assumed that for the pre-modern Indian dynasties, the river was a source of legitimacy? How else can we explain the prominence given to the Ganga by the several rulers who placed the image of the Ganga in the royal temples or jubilant celebrations of the Chola emperor on his conquest of the eastern Ganga plain? The Muslim Nawabs and the Mughal emperors did not believe in the sanctity of the Ganga, yet many of them associated themselves with the river. With Nehru's secular invocation of the Ganga as the river of India in the twentieth century, we come a full circle.

As we have noted above, the roots of an imagined community of the Ganga may be traced to the early migration and settlement in the Ganga plain since the late second and first millennium BC. The cultural processes through which the Ganga was mythologized went hand in hand with the significant economic and political transformations of the Ganga plain. After the decline of the urban society of the Harappan civilization, from the end of the third and early second millennium BC, there appears to be a pull towards the Ganga plain where people and resources gravitated. From the first millennium BC, the Ganga plain witnessed significant economic change, the urban growth and state formation. Why was it that the Ganga plain underwent momentous changes since the first millennium BC? As I explore this question in the next chapter, we will see that the Ganga remained central to the processes of the economic and political changes.

outlet of the stream [of the Bhagirathi], large hoary icicles depend. These an illiterate Bramin who accompanied captain Hodgson from Gangoutri [in 1817], called 'the hair of Mahadeva [Shiva]', whence the Ganges is said in the Shasters to flow. It is this extraordinary outlet that, in Hodgson's opinion, the appellation of 'the cow's mouth' is aptly given." 468.

Chapter 2

Gangascape: Opening up of the Ganga Plain

[A] history whose passage is almost imperceptible, that of man in his relationship to the environment, a history in which all change is slow, a history of constant repetition, ever-recurring cycles.¹

Introduction

In Chapter 1, we have seen the evolution of an imagined community centred on the Ganga River over the course of several millennia. The fame of the river spread far and wide and the myths of its origin in paradise found currency even in the Greco-Roman world. With the European discovery of the source of the Ganga in the early nineteenth century, the myths about its origin in paradise were debunked. Yet in spite of the scientific mapping of its source, people continued to venerate and worship the Ganga, the practice of which had taken root millennia ago. In the course of history, the Ganga became associated with a rich civilization and material life that emerged and flourished along its banks. This chapter examines the earliest history of the Ganga River and its plain and explores the material life, early settlement, and historical dynamics that underlie state formation along the river. A *longue durée* approach is employed to underline the processes by which humans transformed and appropriated the natural environment of the Ganga plain. South Asian historiography on these historical geographical issues is still in its infancy, though. Therefore, we approach the history of the Ganga plain from an environmental perspective that analyses historical events by connecting them to the ecological specificities of the landscape such as soil, productivity, climate and vegetation.

By taking a historical geographic approach with a focus on environment, the present chapter seeks to understand the interaction between human beings and their natural environment. Human agency is essential for the transformation of geography and natural surroundings into an environment conducive to the growth of civilizations and the movement of history. This fact singularly invalidates the argument about environmental determinism. As Whiting Fox suggests, the nineteenth-century German historian George Wilhelm Friedrich Hegel dismissed such determinism when he remarked: “where geography had produced Greeks, I now see only Turks.”² In the case of the geography of the Ganga plain a similar point may be put forward. Indo-Aryan-

¹ Fernand Braudel, *The Mediterranean and the Mediterranean world in the age of Phillip II*, trans. Siân Reynolds, 2 vols. (Berkeley: University of California Press, 1995), 1:20.

² Edward Whiting Fox, *History in geographic perspective: The other France* (New York: Norton, 1971), 19.

speakers, Shakas (Scythians), Kushanas, Hunas, Turks, Mughals and British in turn dominated the plain in the course of three millennia.

In his work *Geography and history: Bridging the divide*, Alan Baker argues for the mutuality of the disciplines of history and geography to help us comprehend and analyse past events. By way of example, Baker suggests that while practising geohistory (*géohistoire*), the French historian Fernand Braudel was, in fact, able to demonstrate his geographical awareness. For Braudel geohistory implied an intertwining of the disciplines of history and geography by “making historians more geographically aware and geographers more historically sensitive.” In his classic work *The Mediterranean and Mediterranean World in the Age of Philip II*, Braudel sought to gain a historical understanding of the geographical and environmental contexts of human activities. After Braudel set the example by analysing the interactive relationship between human beings and the environment, historians began considering the merit of linking history and geography from a *longue durée* perspective.³ Such an exercise gives depth and nuance to historical explanations. Taking a long term perspective, this study too looks at the Ganga plain through the prism of geography and history.

This chapter is organized into two parts. Section one questions the conventional threefold division of the Ganga plain, i.e. the upper, middle and lower, and its usefulness in explaining historical processes. Instead it studies the plain by paying close attention to the rainfall regime, which helps us to comprehend historical events better. After introducing the Ganga plain, the focus shifts at Gangetic Bihar and it discusses the fertile and productive agricultural zones along the Ganga as well as the comparatively less productive land further south of the riverbanks of the Ganga. After a discussion of geographical problems, section two moves further to situate the historical events on the landscapes of the Ganga plain. Why did certain areas become the lynchpin of state formation? To answer this basic question it demonstrates how the transitional zone (which implies interstitial areas between drier and more humid parts of the Ganga plain) had attracted migrants and resources and how early states were formed. It further discusses the monsoons and climate change and their influence on the historical trajectories of South Asia. In order to take a long term perspective, the section briefly recapitulates the historical developments since the decline of the Harappan civilization. It takes into account the geographical factors, climate change and the interaction between the people of a semi-pastoral nomadic background from the predominantly drier zone and those of a settled, agricultural society of the humid zone. As the pastoral nomads moved along the river banks and drier marches of the plain with their cattle and horses, they interacted increasingly with the people and resources of the humid zones. Once the migrants settled and began exploiting the fertile plain, states began to form. Urban developments began around the mid-first millennium BC

³ Alan R. H. Baker, *Geography and history: Bridging the divide* (Cambridge: Cambridge University Press, 2003), 22; Braudel, *The Mediterranean and the Mediterranean world*, vol. 1.

and it was from these that the continental empires of the Mauryas and Guptas, the first in South Asia, later emerged. State formation and economic growth in the late first millennium and early second millennium AD were stirred by the horse-riding pastoral nomads of the arid zone, the Turko-Afghan groups, who established their political supremacy in South Asia. Their migration appears to have followed the same route through which the Indo-Aryan-speakers reached the Ganga plain. However, the historical processes attending to the migration of the Indo-Aryans and Turks were quite different, as I shall show towards the end of this chapter.

Section I: The Ganga Plain and the Transitional Zone of Bihar

In this section first I will introduce the Ganga plain and its geological evolution. Subsequently I discuss rainfall and other environmental predispositions of the plain and will make a distinction between drier zones of the plain receiving between 25 to about 45 inches annual rainfall and more humid zones receiving more than 45 inches. A simple distinction of the plain on either an east-west or a north-south axis poses problems. The rainfall map of the Ganga plain shows a long parallel region of the drier and more humid zones that follows the Yamuna and Ganga rivers and extends from northwest to southeast and tapers off in Bihar.⁴ The aridity- and humidity-based division corresponds to the agricultural regime, with the predominantly wheat and barley-based economy of the drier parts and the rice-based economy of the humid parts. Along with these two broad environmental divisions, we try to underline the sub-regional or sub-zonal characteristics such as rainfall, soil types, crop patterns and productive capacity in the different parts of the Ganga plain. Gradually I zoom in on the transitional environment zone in Gangetic Bihar which was the nerve-centre of early empires.

The confluence of the Ganga, the Yamuna and the invisible Sarasvati was considered to be the eastern limit of *Aryavarta* or *Madhya Desha* around 900 BC by the Indo-Aryan-speakers.⁵ A few centuries later, as the frontier of the Indo-Aryan settlers moved eastward, the region around the confluences of the Ghaghara, Son, and Gandak with the Ganga in Bihar emerged as a new frontier. This eastern frontier along the river confluences also falls between the relatively dry zone to the south and the humid zone to the north of the Ganga. The transitional area between these two different environment zones played an important role in the state formation process since around

⁴ O. H. K. Spate and A. T. A. Learmonth, *India and Pakistan: A general and regional geography* (London: Methuen, 1967). See the rainfall maps on p. 47.

⁵ For Patanjali, the great Sanskrit scholar of the second century BC, *Aryavarta* was “bounded by Adarsa [probably Kurukshetra] in the west, Kalakavana [probably Allahabad] in the east, Himavanta in the north, and Pariyatra (that is, Vindhya) in the south.” According to *Manusmriti* (first century BC) *Aryavarta* was located between the two seas (in the west and east) and between the Himavanta and the Vindhya. See M. A. Mehendale, “Indo-Aryans, Indo-Iranians, and Indo-Europeans,” in *The Aryan debate*, ed. Thomas R. Trautmann (New Delhi: Oxford University Press, 2005), 48. On chronology of *Manusmriti* or *Manu-Dharmasastras*, see John S. Bowman, ed., *Columbia chronologies of Asian history and culture* (New York: Columbia University Press, 2000), 260.

the middle of the first millennium BC. This study is mostly concerned with this transitional zone of the Ganga plain.

There are many overlapping as well as contrasting geographical features in different parts of the Ganga plain and this complexity demands careful attention. The so-called upper Ganga and middle Ganga plains cannot be taken as homogeneously defined geographic units. Thus, in a way, this is an exercise aimed at moving away from the unsatisfactory macro divisions of the Ganga plain to more local-level divisions. A comprehensive treatment of the Ganga plain's geography is beyond the scope of this study, but my effort stands rewarded at least if the problem inherent with such macro-division of the plain can be admitted. It is hoped that the professional geographers will be able to shed more light on the problem and will show us the local and sub-regional characteristics of the plain in greater detail.

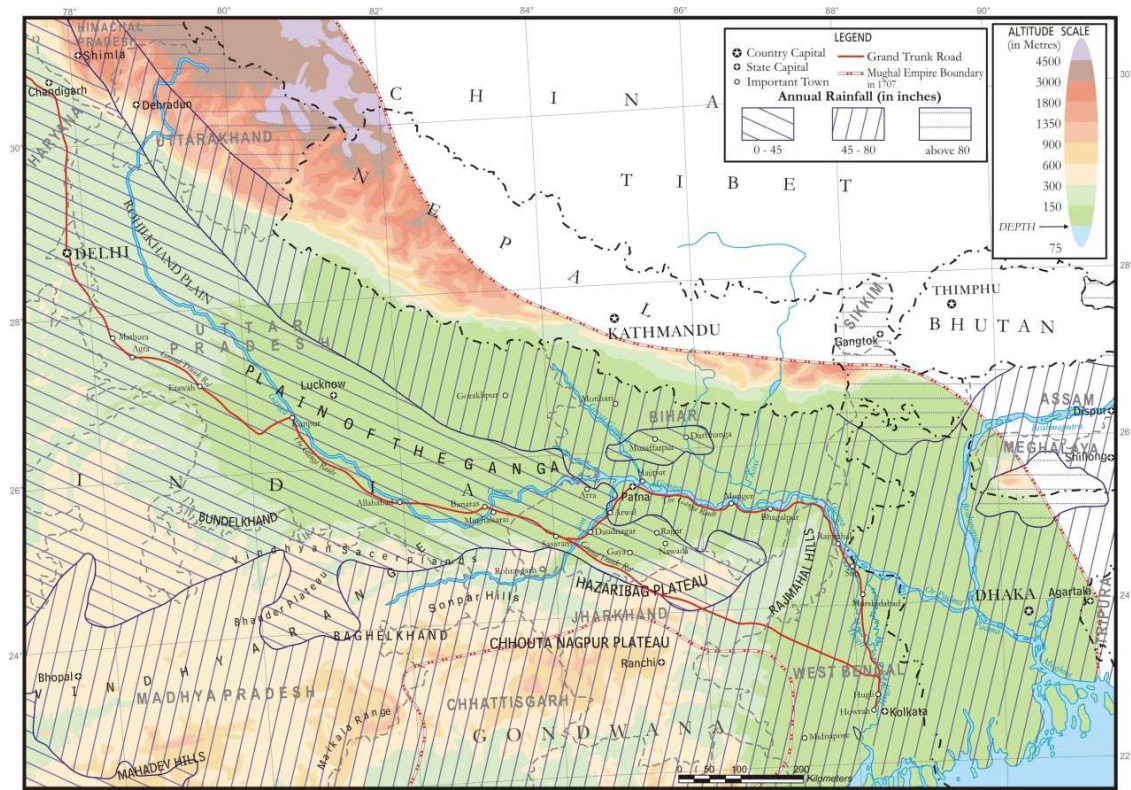
Geological Evolution of the Ganga Plain

During the Pleistocene Period (from 2.5 million to 10,000 BC), geologists believe that a depression existed between the Himalayas in the north and the Chhota Nagpur Plateau and Vindhya Range in the south. In the course of time this deep depression received silt from the Himalayan and Vindhyan rivers and the plain was gradually built up. Towards the end of the Pleistocene Period and during the early Holocene Period (around 8,000 BC) constant silting helped form the Ganga plain.⁶ It is believed that during the tail-end of the late Pleistocene Period (16,000–9,000 BC) there was a climate change leading to extremely dry weather. As a result of drying conditions the rivers issuing from the Vindhya Range assumed a narrower course through their floodplain and they further deepened the old channels.⁷ During the dry weather of the late Pleistocene Period, the Ganga shifted its course through the newly deposited sands of the plain. In the middle stretches of the Ganga plain, in the transitional zone in eastern Uttar Pradesh and Bihar, the river started cutting its bed and receding to the southern fringe of the plain until it almost touched the northern limits of the Vindhya Range and Chhota Nagpur Plateau. In the course of the river's southward shift several meanders of the old bed of the Ganga became ox-bow lakes, traces of which can still be seen in the topography of northern Bihar. The mild climatic conditions of the Holocene Period around 8000 BC brought about transformations in the topography and the marshy land of the waterlogged Ganga plain was gradually transformed into grassland

⁶ V. D. Mishra, *Some aspects of Indian archaeology* (Allahabad: Prabhat Prakashan, 1977), 24. Also Shibani Bose, "Human-plant interactions in the middle Gangetic plains: An archaeobotanical perspective (from the Mesolithic up to c. third century BC)," in *Ancient India: New research*, ed. Upinder Singh and Nayanjot Lahiri (New Delhi: Oxford University Press, 2009), 71–5; Basudev Narayan, *Prehistoric archaeology of Bihar: A survey of Stone-Age industries in environmental context from the Palaeolithic to Neolithic times* (Patna: K. P. Jayaswal Research Institute, 1996), 26–27.

⁷ Govardhan Raj Sharma, et al., *Beginnings of agriculture: From hunting and food gathering to domestication of plants and animals* (Allahabad: Abinash Prakashan, 1980), 4–5.

giving support to vegetation, plant and animal life.⁸ According to geologists and archaeologists, this was how the Ganga plain came into being.



Map 1. The semi-arid and humid zones of Ganga plain.

Problems with Traditional Division of the Ganga Plain

Traditionally, geographers divide the Ganga plain into three parts. However, they find it difficult to give a satisfactory explanation for such a division and often making a virtue of convenience type arguments are resorted to. According to O. H. K. Spate, J. N. L. Baker treats the landmass from the Yamuna to the deltaic margins as the “Indo-Gangetic Plain East,” which appears to be reasonable in physiographical terms, but Baker “takes no account of the big difference between the dry Delhi-Agra country and the wet jute-growing east of Bihar.” Further, despite finding problems with L. D. Stamp’s emphasis on the 40-inch isohyet in the area from the Ganga-Yamuna confluence at Allahabad across to the NNW-SSE section of the Ghaghara, Spate chooses to follow Stamp on the basis of the cropping pattern between “the upper Gangetic Plains” and “Middle Gangetic Plains”; the former region is one of mixed main crops while the latter is one of rice dominating the “acreage at least double that of wheat.” In the end Spate confesses it to be “an unsatisfactory solution.”⁹ R. L. Singh

⁸ Radha Kant Varma, “Pre-agricultural Mesolithic society of the Ganga valley,” in *Old problems and new perspectives in the archaeology of South Asia*, ed. Jonathan Mark Kenoyer (Madison: Department of Anthropology, University of Wisconsin, 1989), 55.

⁹ Spate and Learmonth, *India and Pakistan*, 545–6, 564; L. Dudley Stamp, *Asia: A regional and economic geography* (1929; repr. London: Methuen, 1959), 316–26; see also Birendranath Ganguli, *Trends of agriculture and population in the Ganges Valley* (London: Methuen, 1938), xvii–xviii.

concurs with Spate in criticising Baker's two-fold division of the Indo-Gangetic plain, but he also questions Spate's division of the upper and middle Ganga plains along 40-inch isohyet. Instead, Singh takes the "the eastern limit of the Upper Ganga Plain" to be the 100-metre contour that effectively divides the agricultural regime between the east, where rice is the chief crop, and the west, where wheat, barley and millet predominate. Singh's upper Ganga plain seems to be largely homogeneous, except along its northern and southern fringes. He states that "the region markedly differs in physical, social and economic characteristics from the northern and southern bordering regions but it is devoid of any such limits on the west and the east where the lie of the land with imperceptible physical, climatic and economic variations seldom provide[s] any landmark to put a precise divide between its counterparts, the Punjab Plain on the west and the Middle Ganga Plain on the east." However, for his "Middle Ganga Plain" Singh asserts, "[t]hough it is a region in its own right, it is highly diversified in its different parts which all have their specific geographic settings, problems and resources."¹⁰

According to Birendranath Ganguli, "the Upper Ganga Valley, the Middle Ganga Valley and the Ganges Delta" constitute three distinct rainfall tracts. Further, though the natural boundaries of these rainfall tracts overlap "by imperceptible degrees, yet these regions, as classified on the basis of the variability of the agricultural-economic environment, have, broadly speaking, distinctive characteristics."¹¹ In this study we are more interested in the "distinctive characteristics" of the micro-regions. Although Ganguli is mindful of the artificiality of such division of his agricultural regions, he accepts its utility for the convenience of economic analysis. Perhaps we should further add that the artificial division of the plain needs to be problematized in order to understand the political importance of different regions too.

While demarcating the western boundaries of his "middle Gangetic plains" Spate differs somewhat from Ganguli, who puts Banaras (now Varanasi) as its western limit. According to Spate the middle Ganga plain consists of "what is left between the Upper Gangetic Plains and Bengal: roughly the eastern third of Uttar Pradesh and the northern half of Bihar."¹² Thus, southern Bihar, particularly the plain south of the Ganga River, which is crucial to understand the earliest state formation processes, somehow vanishes from the geographical scheme of Spate's middle Ganga plain. The divisions proposed by geographers appear too artificial and the historical developments do not appear to correlate to them. Apart from the artificiality of such divisions, we should keep in mind many features that serve to make the Ganga plain a unitary region. For example, the Ganga itself makes transportation through the length of plain easy and so links contrasting ecological zones. As a result of such linkages, many of the economic, political and cultural patterns evolved across the entire plain. Furthermore,

¹⁰ R. L. Singh, ed., *India: A regional geography* (Varanasi: National Geographical Society of India, 1971), quotes are from pp. 124, 249.

¹¹ Ganguli, *Trends of agriculture*, xviii.

¹² Spate and Learmonth, *India and Pakistan*, 563–64.

the resources of the drier and more humid zones complemented each other and interactions of the people of these two zones encouraged trade relations. In the present chapter, I will highlight the differentiating as well as unifying components of different regions within the Ganga plain.

The so-called lower Ganga plain which we identify as the deltaic Ganga plain has different characteristics because of the distribution of rainfall and areas of old and new alluvium, and the predominantly rice-based agrarian economy. The Bihar region of the Ganga plain appears to be more of an intermediary/transitional zone between the rice-based economy of the delta and the primarily wheat-based economy of the drier parts of the plain to the west. As we will see in the following paragraphs, the so-called upper Ganga plain too has significant regional characteristics that engendered different forms of economy and polity during the early historical as well as later periods.

Ganga's "Arid Zone"

The weather in the north-western parts of the Ganga plain may be divided into four seasons: the hot summer, the wet summer, the pre-winter transition, and the winter. The climate is sub-humid and more arid than the eastern parts of the Ganga plain. Climatic conditions along the Shiwaliks and Himalayas are different from the rest of the plain. The annual rainfall along the Shiwaliks and the Himalayas reaches around 50 inches while in the western parts of the plain it is only 25 inches. Thus, the tracts along the Shiwaliks and Himalayas share the intensity of rainfall obtained in the humid parts of the Ganga plain.

O. H. K. Spate subdivides the upper stretch of the Ganga plain broadly into the Ganga-Yamuna doab, extending up from the northern approaches to the Malwa passage into the Deccan, Rohilkhand, and the erstwhile Kingdom of Awadh. These subdivisions reflect distinct climatic and cropping patterns. While the doab and the Awadh region lie in the dry zone, receiving between 25 and 40 inches of rain, the northern and north-eastern areas from Saharanpur and Bijnor to Bareilly are more humid (40–50 inches rainfall) where the rice economy is more important.

The prosperity of Rohilkhand depended on the exploitation of the resources of the dry zone to its southwest and the humid zone along the foothills. In the northeast of Rohilkhand, in the higher-rainfall zone of the *Terai* (a belt of marshy grasslands, savannahs and forests), there was considerable jungle cover, generally at the intersection of the Shiwaliks and the Himalayan Range. Meena Bhargava assumes that originally the jungle and marshes of the Terai covered a zone 50–60 miles wide extending from Awadh and to the middle of the Ghaghara River.¹³ Land reclamation for agriculture and settlement began in the eighteenth century with the Rohilla expansion and continued during the early colonial period.¹⁴ In the drier zone to the west

¹³ Meena Bhargava, *State, society and ecology: Gorakhpur in transition 1750–1830* (Delhi: Manohar, 1999), 67–69.

¹⁴ J. F. Richards, *The Mughal empire* (Cambridge: Cambridge University Press, 1995), 191; J. J. L. Gommans, *The rise of the Indo-Afghan empire, c. 1710–1780* (Leiden: Brill, 1995), 145–46; see also

of the Yamuna, there is no Terai as the Shiwaliks stand far away from the Himalayas. Further west, in the Punjab, at the intersection of the Shiwaliks and the Himalayan Ranges, it is too dry for the Terai to develop. In the east, the Terai develops where the Shiwaliks are separated from the snow-mountains by the longitudinal valleys of Nepal. In this region an annual precipitation of more than 50 inches ensures the growth of the Terai.¹⁵

The lithology of the Ganga plain is characterized by *khadar* (newer alluvium) and *bhangar* (older alluvium).¹⁶ The khadar floodplain is formed by the silt, clay, and sand deposited by rivers every year and is very fertile. The bhangar lands occupy the interfluvies above the flood catchment area. The gravels of the Terai area consist of “loosely set sediments, ranging from fine silt or clay particles to coarse sands, pebbles and sometimes even boulders” spread across the slope of the foot of the Shiwaliks.¹⁷ The soil types are largely homogeneous throughout the upper stretches of the Ganga plain. The alluvial soils include *usar* (salt-efflorescence), *domut* (soil mixed with sand and loam), and *bhur* (sandy patches) that cover an extensive area. The tract along the eastern banks of the Ganga in Moradabad and Bijnor Districts is characterized as *bhur* proper. This tract, being located in the rainfall zone of 40 inches, is generally arid at higher elevations and waterlogged in the low-lying areas, especially in wet years.¹⁸

Southwest of this tract, on the western banks of the Ganga, the area between Farrukhabad and Agra falls in a zone that receives 30–40 inches of rainfall annually. Located close to the Ganga, Farrukhabad was one of the most fertile areas. The subsoil was firm and water was close to the surface, which ensured good production of both summer and winter crops. In the lowlands, prone to flooding from the Ganga, the autumn harvest could not be produced.¹⁹ In the zone of comparatively meagre rainfall west of Farrukhabad the water table dips far below the surface of the land, which makes artificial irrigation very expensive and renders this tract largely unfit for cultivation.²⁰ In the early modern and earlier periods these conditions were hardly suitable for agriculture and they played an important role in the way the local economy and polity were organized. While the higher-rainfall zone became the hub of sedentary society,

Sayako Kanda, “Environmental changes, the emergence of a fuel market, and the working conditions of salt makers in Bengal, c. 1780–1845,” *International Review of Social History* 55 (2010): 145, for example, high prices of firewood in northern Indian cities along the Ganga in the early nineteenth century are believed to have resulted from deforestation; see also Henry T. Bernstein, *Steamboats on the Ganges: An exploration in the history of India’s modernization through science and technology* (Bombay: Orient Longmans, 1960), 111.

¹⁵ Spate and Learmonth, *India and Pakistan*, 546–50.

¹⁶ The khadar are lowlands formed by the deposition of new detritus of new alluvium in the riverbeds or floodplains. The bhangar are the uplands formed by the deposition of the older alluvium.

¹⁷ Singh, ed., *India: A regional geography*, 130–31.

¹⁸ Spate and Learmonth, *India and Pakistan*, 546–50.

¹⁹ E. T. Atkinson, *Statistical, descriptive and historical account of the North-Western provinces of India*, vol. 7, *Farrukhabad* (Allahabad, 1874–84), 261. Cited in Gommans, *The rise of Indo-Afghan empire*, 132.

²⁰ For the precarious state of late eighteenth- and nineteenth-century agriculture in this region, see C. A. Bayly, *Rulers, townsmen and bazaars: North Indian society in the age of British expansion 1770–1870* (New Delhi: Oxford University Press, 2003), 79.

agricultural production and wealth, the areas receiving less rainfall followed a different political-economic trajectory.

Since agriculture was labour-intensive and water was scarce, people in the dry zone devised alternative survival strategies by taking up economic activities such as animal husbandry, cattle and horse tending, banditry and hiring out themselves as mercenaries.²¹ Furthermore, as the overland and riverine routes also passed through the comparatively drier areas, the porters, *banjaras* (grain traders cum transporters) and boatmen eked out a living by offering transportation services. The people in this zone viewed the agricultural communities of the humid zone to the east as a source of riches, and with their mobile resources they were often successful in raising armies and asserting their authority over their agrarian neighbours.²² Although the settled society produced agricultural resources, it was also dependent upon the mobile wealth and infrastructure of the dry zone. The peasants needed the improved breed of cattle for agriculture and transport and depended on mobile traders such as *banjaras* for the transportation of goods and conversion of agricultural surpluses into money.²³ Thus, rather than being diametrically opposed to each other's interests, societies of the drier and more humid zones existed in complementary opposition to each other. Such dynamics were already at work in the period of Magadhan and Mauryan expansion, when people of the relatively dry zone of south-western Bihar expanded their political domination by incorporating the sedentary society in the more fertile areas to the north of the Ganga. This pattern has been analysed for peasants and nomads in the Arid Zone but it is my contention that it equally applies to this part of the Ganga plain.

Transitional Zone: Bihar

Historical Bihar (including the Indian state of Jharkhand, which was spun off from it in 2000 AD) is situated between latitudes 22°N and 27°31'N, and longitudes 83°20'E and 88°17'E. It became a Mughal *suba* (province) in 1574 and shared its boundaries with the *suba* of Bengal in the east and Awadh and Allahabad in the west. Its northern parts extended up to the foothills of the Himalayas and in the south it comprised the Chhota Nagpur Plateau, called Khokrah by the Mughals. The boundary of Bihar *suba* left the

²¹ For an impressive military capacity of Bhadauriya Rajputs in the drier zone of the doab along the Yamuna, in the area to the east and south-east from Agra town, see K. K. Trivedi, "Non-ruling Rajputs families in the Mughal nobility in *suba* Agra," *Indian History Congress, Proceedings of the Thirty-Ninth Session, 1978* (Aligarh, 1979): 337–344. Trivedi cites Persian Mss. of *Zakhiratu-l Khawanin*, fo. 108 a.

²² J. C. Heesterman, *The inner conflict of tradition: Essays in Indian ritual, kingship, and society* (Chicago: University of Chicago Press, 1985), see chap. 11. For the pastoral occupations in the drier parts of the Ganga plain, see Irfan Habib, "The pastoral sector," in *Economic history of medieval India, 1200–1500*, ed. Irfan Habib (New Delhi: Pearson Education India/Centre for Studies in Civilization, 2011), 59–62. (This is volume 8, part 1, in the series *History of science, philosophy and culture in Indian civilization*, series editor D. P. Chattopadhyaya.)

²³ R. V. Russell, *The tribes and castes of the central provinces of India*, assisted by Rai Bahadur Hira Lal, 4 vols. (London: Macmillan, 1916), 2:162–63; see also Ian J. Kerr, "On the Move: Circulating Labor in Pre-Colonial, Colonial, and Post-Colonial India," in *Coolies, capital and colonialism: Studies in Indian labour history*, ed. Rana P. Behal and Marcel van der Linder, *International Review of Social History*, Supplement 14 (Cambridge: Cambridge University Press, 2006), 91–93

Banaras and Jaunpur area to the west and encompassed the Rajmahal Hills in the east. From north to south, the suba included the relatively flat Terai area with high rainfall and the hilly and forested region with relatively drier conditions to the south.

Flowing in between the two landscapes, the Ganga dissected the whole suba as it flowed from west to east. The north-western parts of the suba included the forested Himalayan foothills and the hilly region known as the Someshwar and Dun Ranges. The western boundary of the modern province of Bihar starts where the Gandak River leaves Nepal and mostly keeps the river to its west, except for a triangle of land between the Gandak and Ghaghara. South of the confluence of the Ghaghara and Ganga, the boundary turns west and southwest toward Buxar reaching up to the Karamnasa River.²⁴ After the Karamnasa, the boundary proceeds further southward and cuts across the Kaimur Range and passes beyond the Son River, west of Patna. After the Son, the boundary extends into the Chhota Nagpur Plateau and runs southeast through hilly, forested country, roughly along the Kanhar River, a tributary of the Son. The eastern boundary includes Bhagalpur and Santhal Pargana within the province and moves parallel to the Rajmahal Hills, which is a forested, and highly fractured region formed by lava rocks.²⁵ As we will see below, the physiography of northern Bihar is flat and well drained by numerous snow-fed rivers whose fertile valleys constituted the heartland of the agrarian economy. Except for a narrow belt along the southern banks of the Ganga, the southern region is mostly hilly and dry; agriculture is precarious and food production could be effected only with labour-intensive artificial irrigation. These contrasting geographical factors in Bihar had important implications for state formation in the course of history, as we will see in the next section.

The Ganga plain in Bihar covers about 28,000 square miles or 42 per cent of the undivided Bihar province.²⁶ The northern plain rises to less than 250 feet above sea level in the western-most parts such as Champaran and northern Saran. Along the Ganga, the plain falls almost imperceptibly to 200 feet in the west and to under 100 feet in the east.

The southern Ganga plain can be broadly divided into two parts, the first being a narrow belt of highlands along the Ganga, and the second the zone more to the south, dotted with hills and plateaus.²⁷ Numerous isolated or long narrow hills such as the Barabar Hills of Gaya or the Kharagpur Hills in Munger punctuate the plain. Rising to

²⁴ The western boundary of Bihar province appears to be arbitrarily drawn. There is hardly any natural geographical barrier between the Banaras and Jaunpur regions on the one hand and the Bhojpur and Sasaram regions on the other. Culturally and linguistically there is much in common among the Bhojpuri-speaking people of eastern Uttar Pradesh and western Bihar. This Bhojpuri-speaking region was historically known as *Purab* (literally “the east”) and its inhabitants were known as *Purabiyas*, or easterners. As D. H. A. Kolff has shown, this region was a leading supplier of labour for the early modern military markets, see *Naukar, Rajput, and sepoy: The ethnohistory of the military labour market in Hindustan, 1450–1850* (Cambridge: Cambridge University Press, 1990).

²⁵ Enayat Ahmad, *Bihar: A physical, economic and regional geography* (Ranchi: Ranchi University, 1965), 1–3.

²⁶ For the historical treatment of the region, the province of Bihar here includes the recently created Jharkhand state, carved out from southern Bihar.

²⁷ Ahmad, *Bihar*, 21–2.

altitudes of 500 feet, these are northern extensions of the Chhota Nagpur Plateau. In the eighteenth century these hills often gave shelter to the chiefs who fought the Mughals who were often at their wits end to contain and chastise them.²⁸ The alluvium found in this region is coarse, more so as one advances southward from the Ganga. The natural means of irrigation such as snow-fed streams, natural lakes, tanks and marshes, so conspicuous in the northern plain, are scarce here.

The productivity of the region north of the Ganga depended on the quality of soil, the formation of which has been dependent largely on the drifting process. This involves soil being brought down from the Himalayan Mountains by rivers and filling in the low-lying depressions or floodplains. The Ganga alluvium is mostly loamy, with variable amounts of sand and clay. Many tracts in the floodplains of the Ganga, Ghaghara, Gandak and Kosi comprise fertile and productive bhangar and khadar soils leached of harmful substances such as saline and alkaline materials, and crops could be grown even without artificial irrigation. Bhangar and khadar are light friable loams with a higher admixture of sand and silt, similar to the leached and non-calcareous alluvia of the Yangtze and Sinkiang (Xinjiang) floodplains of China.²⁹ Since these soils come down from the Himalayas, they are rich in organic mineral contents and, consequently, more productive than the soil types obtained in the southern Bihar plateau region. The plateau soils are called residual soil because they are formed as a result of the decomposition of one kind of rock and are poor in lime, magnesia, phosphorous, nitrogen and potash. Some of these soils are laterite soils, which are red in colour because of the presence of iron oxides. In order to take a closer look at the productive and less-productive tracts of the Ganga plain in Bihar, in the following section I shall discuss the *Gangascapes* to the south and north of the Ganga. For the southern *Gangascape* I will guide the reader by taking detour from Rajmahal in the east to Patna and Shahabad to the west.

South of the Ganga

Rajmahal is positioned at the junction of the transitional zone to the west and the Bengal delta to the east. To the west of Rajmahal and Sahebganj, the Bhagalpur and Munger regions fall along the banks of the Ganga. On the southern bank of the Ganga between Kahalgaon in the east and Munger in the west is a raised belt of limestone

²⁸ Nationaal Archief (hereafter, NA), Accession Number 1.04.02 (hereafter, VOC from *Verenigde Oost-Indische Compagnie*), Inventaris Nummer (hereafter, Inv. Nr.) 8765, From Hugli to Batavia 30.11.1730, "Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen," signed by Jacob Sadelijn at Hugli on 23.08.1730, p. 1072. This source reports that one Raja Bakhtawar Singh was harassing the indigenous merchants on the Ganga around the Munger region. The English and the Patna Nawab's force had apprehended him but he later fled into the mountains. In 1729, another Dutch boat journal reports that, "het Raadja Mhamed Asiem [of Kharagpur] door het volk van den Nawab van Pattenen uijt zijn rijk na de gebergte Gangelde gejaagd" ("the army of the Nawab of Patna chased away Raja Muhammad Asim to the mountain Gangelde"), see NA, VOC, Inv. Nr. 8760, From Hugli to Batavia 18.12.1728, "Dagregister gehouden door den Capitain Samuel Martinus Hogerwerf, gedurende den optogt naar Pattenen in het Jaer 1728," signed by Samuel Martinus Hogerwerf at Hugli on 21.11.1728, see entry of 14.09.1728, pp. 50–51.

²⁹ Ahmad, *Bihar*, 63–4.

roughly two miles broad and more than sixty-two miles long.³⁰ The limestone and hard soil prevented southward erosion of the Ganga and this southern belt witnessed the growth of habitation settlements from early historic times. On this elevated ridge urban centres such as Champa and Munger emerged around the mid-first millennium BC. It is in this region that the mahajanapada of Anga was located. To the south of this limestone belt, the low-lying fertile agricultural area produced rice, opium and other cash crops during the early modern and colonial periods. Fed by numerous hill streams, the Chandan is the principal river of this fertile tract, but it runs only during the rainy season and is barely deep enough for navigation.³¹ Further south, the landscape is dotted with outcrops of the Chhota Nagpur Plateau and rain forest, and the soil hardly supports good agriculture. In the southern Bhagalpur area mineral products such as iron and copper are reported. Silkworm was amongst the forest products of the region, and silk textile production continued to be a significant part of the local economy until the late twentieth century.³² In 1671 the English traveller John Marshall while on his way to Patna around the Rajmahal area, saw an “abundance [sic] of fields of Mulberry trees.”³³

The *Gangascape* of the Munger region comprises two river plains dissected by the Kharagpur Hills lying in the north-south direction. During the eighteenth century, Dutch sources mention the chief of “*seckwaards*” (probably refers to the Chakwar of the Bhumihar caste) living in this region.³⁴ On a late-eighteenth-century map the Kharagpur Hills are depicted as covering an area of about twenty square miles with villages and habitation surrounding the hills. The “Gorgot Nullah” is shown skirting the hills from the eastern side and flowing in from south to north for about thirty miles before falling into the Ganga at a place between Jahangeera and Paharpur to the east of Munger. On the map, a road is also shown following the *nullah*, or stream.³⁵ Apart from the Gorgot stream, rivers such as the Kiul and Man drain into the Ganga from the south, the Kiul falling into the Ganga near Surajgarha and the Man between Munger

³⁰ W. W. Hunter, *A statistical account of Bengal*, vol.14, *Districts of Bhagalpur and Santhal parganas* (1877; repr. Delhi: Concept Publishing, 1976), 23.

³¹ C. E. A. W. Oldham, ed., *Journal of Francis Buchanan kept during the survey of the district of Bhagalpur in 1810–1811* (Patna: Superintendent, Government Printing, 1930), 13.

³² Hunter, *Statistical account of Bengal*, 36. Among other hill and forest products of Bhagalpur were game, millet, wax, hides and honey. See Reginald Heber, *Bishop Heber in northern India: Selections from Heber's journal*, ed. M. A. Laird (Cambridge: Cambridge University Press, 1971), 98. Bhagalpur still produces silk textiles of different varieties.

³³ John Marshall, *John Marshall in India: Notes and observations in Bengal, 1668–1672*, ed. Shafaat Ahmad Khan (London: Oxford University Press, 1927), 113.

³⁴ NA, VOC, Inv. Nr. 8762, From Hugli to Batavia 25.01.730, “Journaal in form van een dagregister gehouden door den Luijtenant Commandant Jacob van der Helling,” signed by J. V. D. Helling at Hugli on 10.12.1729, entry of 17.10.1729, p. 73. Around the Surajgarha region near Munger the “*seckwaards*” had built some sort of mud fortress on an island in the Ganga in 1725 but at the time of the journey of Van der Helling it was in ruins.

³⁵ “A Set of General and Particular Maps of Bengal and Bahar with General Maps of Ellahabad and Awd drawn from actual surveys taken between the years 1763 & 1774 by the Honourable East India Company's Surveyors, Constructed from the Original Surveys by James Rennell, Surveyor General,” BL, IOR, X/995, Map no. XVII.

and Bhagalpur. These *nullahs* are scarcely navigable and swell only during the monsoon.

According to a nineteenth-century source the *kewal* soil (fertile loam) along the banks of the Ganga River produced such crops as “rice, tobacco, wheat, barley, rye, poppy, ruhur dal [lentil], murrooa, vetches of all kinds, sugarcane, indigo, Indian corn or maize, junera” and so on.³⁶ The southern parts of Munger were rich in minerals such as nodular iron ores and various types of rocks such as quartz and chlorite. Among the forest products supplied by the region were hard wood, fragrant resins, and lac.³⁷ Animal resources must have been important in the economy as the southern rim of the Ganga had large tracts of pasture.³⁸ But as one ventures further south, the region becomes agriculturally less productive and hills and jungle abound in the landscape, as was noted by an eighteenth-century British surveyor.³⁹

Further west of Munger, the Surajgarha *pargana* (a fiscal sub-division of several villages) lay between the southern banks of the Ganga and the Kharagpur Hills. From a mid-nineteenth century settlement report we know that the region along the banks of the Ganga River was well cultivated. The rich *kewal* soil produced abundant quantities of rice, poppy, indigo, arhar dal and some sugarcane. Toddy and mango fruit provided other sources of income. While the eastern tracts of the *pargana* had thick vegetation, the western parts of the area along the confluence of the Kiul and Ganga were flat and produced such crops as wheat, barley, gram and junera, and agriculture was chiefly concentrated in the fertile tract along the Ganga.⁴⁰ Further south of this fertile area, the landscape is given to hills, jungle and defiles. The red soil found in the region does not support profitable agriculture and people devised alternative sources of livelihood. The Surajgarha area has a notorious reputation in Dutch sources and in the early eighteenth century the Kharagpur raja and the Chakwars maintained a large retinue of militiamen as well as a flotilla of armed boats. The confluence of the Kiul and Ganga Rivers was a difficult point for boats to negotiate during the rainy season, and local chieftains often apprehended the merchants and took “customs duties” from the boats passing through the Ganga.

Between Lakhisarai on the Kiul River in the east and Patna in the west there is an open and low-lying tract subject to annual inundation by the Ganga. This tract to the east of Patna, made up principally of Behar or Bihar District, was highly fertile owing

³⁶ Captain W. S. Sherwill, *General remarks on the District of Monghyr* [with a map] (Calcutta, 1848), 1–2; Comte de Modave, who was passing through Bihar in 1774, noted richly cultivated fields around Munger, see Comte de Modave, *Voyage en Inde du comte de Modave 1773–1776 (nouveaux mémoires sur l'état actuel du Bengale et de L'Indoustan)*, ed. Jean Deloche (Paris: École Française d'Extrême-Orient, 1971), 129.

³⁷ L. S. S. O'Malley, *Bihar and Orissa district gazetteers: Monghyr* (Patna: Superintendent, Government Printing, 1926), 11–12, 14.

³⁸ Dilip K. Chakrabarti, *Archaeological geography of the Ganga plain: The lower and middle Ganga* (New Delhi: Permanent Black, 2001), 163.

³⁹ BL, APAC, IOPP, Mss. Eur. F331/36, Vansittart Collection, Journal of a Survey of the Passes and Western Boundary of Bengal taken by Thomas Carter, 1767, pp. 1–6.

⁴⁰ Sherwill, *General remarks*, 9.

to the rich alluvium and silt deposited by the floodwaters. In this area wheat, rice and poppy were produced in good quantities and artificial irrigation was effected by means of *pynes* (narrow artificial channels), *ahars* (rain or floodwater conserved in earth cisterns) and wells. Hill streams such as the Sukree (Sakri) and Punchaneh (Panchami) were also important sources of irrigation. The surveyor Captain Sherwill remarked that during the rains the Sakri was a formidable stream at the point it entered Behar, but after flowing through the district from south to north it was “a puny and feeble watercourse, in fact, a mere ditch.”⁴¹ Drier conditions prevailed as one moved further south from the Ganga and agriculture required arduous feats of artificial irrigation and water management.

Around Patna, the southern banks of the Ganga formed a high ridge that proved very suitable for the emergence of large towns and urban markets. On this elevated belt bazaars and towns such as Maner, Dinapore, Bankipur, Patna and Fatwa (Fatuha) were conveniently located. As a settlement officer noted, “from Fatwa on to Barh and again from Barh to Mokameh, large bazars [*sic*] and villages succeed one another at short intervals.” On the south side of this elevation there is a low-lying tract, varying from about five or six to twenty-four miles in width and subject to inundation during the rains from the Sakri, Panchami and Punpun rivers coming from Gaya District.⁴² Patna’s southern *Gangascape* included the marshes created by the Punpun River. Although Patna lay on the south side of the river, geographically speaking it had more in common with the plain of northern Bihar than with southern Bihar. As Dilip Chakrabarti suggests, this probably explains why Pataliputra functioned as the frontal projection of the ancient Magadha kingdom to contain the might of the Vajji confederacy to the north of the Ganga.⁴³ Indeed, Pataliputra was located right at the heart of the transitional zone from where the ruling groups deftly exploited the resources of both the dry and humid zones.

Along the southern banks of the Ganga, the westernmost parts of the suba were comprised of Shahabad, which was located in the drier zone. Parts of Shahabad were well watered by rivers such as the Ganga and Son, the banks of which were fertile and well cultivated.⁴⁴ The landscape of Shahabad District presents a diverse terrain with hills and jungles in the southern parts and the Ganga floodplains to the north. Apart from the Son River, a number of minor hill streams passed through the district from the

⁴¹ Captain W. S. Sherwill, *Statistics of the district of Behar* [with a map] (Calcutta, 1845), 1–2. For remarks on the fertility of Behar, see also BL, APAC, IOPP, Mss. Eur. Orme OV 9, Abstract of the Journal...Nov. 29, 1766, fo. 7v; see also BL, APAC, IOPP, Mss. Eur. Orme OV 67, “December 1763 to 25th January 1764: Journal of Captain Maclean’s March from Ukra in Beerboin to the Caramnassa beyond the Town of Sant,” fos. 7–10, for a general idea of the hilly and jungle terrain as well as cultivable strips of land in southern parts.

⁴² H. Coupland, *Final report on the survey and settlement of the government and temporarily settled estates and of certain private estates in the Patna District, 1901 to 1904* (Calcutta: Bengal Secretariat Book Depot, 1907), 1.

⁴³ Chakrabarti, *Archaeological geography*, 176.

⁴⁴ BL, APAC, IOPP, Mss. Eur. F349/2; see the journal written in 1819 by a cotton factor, Richard Kay, who remarks of the well-cultivated tracts above Patna where opium, grain and castor oil grew, entries of 16 and 21 December 1819.

southern hills and joined the Son and the Ganga. As was the case with Munger and Behar, in Shahabad the tracts along the Ganga were highly productive and grew lucrative cash crops such as cotton, sugarcane, and opium, while the southern tracts along the hills were less fertile and given to hilly jungle and mountainous terrain.

While reporting about animal resources and the availability of pasture, Buchanan Hamilton gives an idea of the land use and the general terrain of Shahabad. The largest part of Shahabad, around 780 square miles, consisted of hills, mainly table land which was quite accessible for cattle, and the area contained a great variety of woods. This tract lay in the southern parts of Shahabad through which the Mughal Trunk Route passed.⁴⁵ According to Buchanan the rent for crops along the Ganga was paid exclusively in cash while in areas farther from the riverbanks, crop sharing was commonplace. In the southern parts of Shahabad, agriculture was a more precarious affair, which helps explain why the region was an important source of military labour in the early modern period, as has been demonstrated by Dirk Kolff.⁴⁶ In strategic and political terms, the intersection of hills, rivers and plains made this area subject to independent-minded autonomous chiefs. It was only with difficulty and through constant negotiation that the Mughals were able to keep them under control in the seventeenth century. In the eighteenth century, the situation became fluid precluding effective Mughal control in these outlying areas. With the weakening imperial structure the Rajput zamindars and Bhojpur chiefs began to control the riverine and overland routes passing through the region. The yellow mark on a mid-eighteenth century Dutch map depicting the Bhojpur region is perhaps suggestive of the military and strategic significance of the area.⁴⁷

North of the Ganga

North of the Ganga, the plain was more humid with relatively higher rainfall that supported a more abundant agriculture. Another contrast with the southern region was the existence of numerous navigable channels and the *jheels* (lakes), which were also used for irrigation in the dry season and also for freshwater fish.⁴⁸ In the following paragraphs I shall begin the survey of the northern *Gangascape* with Bhagalpur in the east and end with Saran and Champaran in the west.

In the nineteenth century, Bhagalpur recorded an annual rainfall of 51.2 inches. In the northern parts of Bhagalpur District, in the parganas of Daphar and Khubkhand,

⁴⁵ BL, APAC, IOR, Mss. Eur. D 89, Buchanan Hamilton Ms, "An account of the District of Shahabad," p. 66. For the reference to jungles and tigers in the southern countries along the Son near Rohtasgarh fort, see BL, APAC, IOPP, Mss. Eur. Orme OV 9, Abstract of the Journal...Nov. 29, 1766, fo. 4r. For the state of cultivation and poor quality of soil in the southern tracts, see BL, APAC, IOPP, Mss. Eur. F331/36, Vansittart Collection, "Patna to Rohtas and back, Feb. 7 to Feb. 19, 1772," n.f. Further west to Shahabad, near Ara, there was "a great deal of long grass jungle," see entry of 10. 01. 1772, n.f.

⁴⁶ Kolff, *Naukar, Rajput, and sepoy*, chaps. 2 and 4.

⁴⁷ Nationaal Archief, The Hague, 4VELH 121; see also J. J. L. Gommans, Jeroen Bos and Gijs Kruijtzter, *Grote Atlas van de Verenigde Oost-indische Compagnie*, dl. 6, *Voor-Indië, Perzië, Arabisch Schiereiland* (Voorburg: Atlas Maior, 2010), sheet 408.

⁴⁸ Spate and Learmonth, *India and Pakistan*, 565.

the soil was very fertile and well watered by numerous river channels. In the Daphar pargana the Daus, an offshoot of the Kosi, irrigated and fertilized large tracts of rice land. A hill stream called the Demra also irrigated a considerably big area of the pargana. In the colonial period the land supported two large market towns, Buluah bazaar and Bhirpur, where merchants from Bengal and the north-western provinces had settled down and carried out a large export trade in rice and oilseeds from the Daphar pargana and Nepal. These merchants exploited the river routes for their export trade. The soil of Khubkhand pargana was also well suited for paddy. There were many sunken tracts of land that were ideal for paddy cultivation with little need of artificial irrigation. However, the land along the Tiljuga and Dumra had clayey soils, which needed irrigation before paddy (the *bhadai* rice crop) was sown in April. The irrigation was effected by means of *dhose* or *krine* (a tool made from a hollowed-out tree trunk for lifting water from a *pyne* or canal) before sowing paddy.⁴⁹ To the west of Daphar and Khubkhand was Farkya pargana in the northern part of Munger District, north of the Ganga and opposite Munger town. The pargana had 200 square miles of land, one-third of which consisted of rich alluvial tract along the northern banks of the Ganga. The northern part of the pargana had a large tract of highland dotted with mango groves. Between the south and north, the middle portions of the pargana were subject to inundation from the Bur Gandak, Tiljuga and Kosi.

Bullia pargana was located to the north of the Ganga and further west of Farkya pargana. It was a large pargana with an area of 290 square miles bordered on the north by the Tirhut division and on the east by the Ganga. Flowing from west to east, the Bur Gandak River divided the pargana into two unequal parts. The annual inundation from the Ganga and Bur Gandak was the source of fertility and agricultural wealth. As the survey officer noted of Bullia, it was “a fine rich country, well wooded, cultivated and watered; producing abundant crops of tobacco, wheat, rye, barley, rice, junera, arhur, sugar-cane, indigo and a small quantity of opium; the Pergunnah is well populated, and contains several fine towns.”⁵⁰ More or less similar agricultural conditions and products were obtained in Mulkee pargana, which was divided into two unequal parts by the Ganga. The larger and more important part was located further west of Bullia pargana.⁵¹

To the north of the Ganga, Darbhanga and Muzaffarpur Districts received 49.8 and 45.9 inches of annual rainfall respectively and the region is drained by several Himalayan streams. The Ganga skirted Darbhanga District for about twenty miles in the south. Farther north from the Ganga, especially in the *thanas* (administrative units or police stations) of Rusera and Bahera, several jheels were connected with the hill streams that passed through the Madhubani subdivision and joined the Ganga.

⁴⁹ E. W. Collin, *Survey and settlement of the Srinagar-Banaili estates, 1887–1894* (Calcutta: Secretary, Board of Revenue, 1895), 28.

⁵⁰ Sherwill, *General remarks*, 5.

⁵¹ Sherwill, *General remarks*, 9. In the smaller, southern half of the pargana the Ganga and its sandbank occupied twenty two square mile area.

According to a late-nineteenth-century observation, the lowlands of Rusera and Bahera produced prodigious quantities of winter or *aghani* rice if early floods did not submerge the crop. The area was not suitable for *rabi* crops (sown in winter and harvested in March-April) as several tracts of land remained waterlogged and did not dry until well into the winter months.

Further north of these low-lying tracts, in the Madhubani subdivision, several elevated stretches of land with *balsundari* soil produced both the *aghani* and more valuable *rabi* crops. The areas were flooded by the annual inundation but the water drained off quickly into the low-lying south-eastern parts of Bahera and Rusera thanas. Rivers such as the Bur Gandak, Baya (a distributary of the Great Gandak), Baghmati and Tiljuga provided communication channels that linked the local marts and centres of production. The rivers linked the important marts and the sub-divisional headquarters of Darbhanga, Samastipur and Madhubani. Apart from these towns, Naraya in Phulparas thana was an important mart which handled the local and Nepalese grain traffic. Before the opening of the railways, Rusera was a great mart owing to its location on the Bur Gandak, which gave it access to the Ganga near Munger.⁵²

In Muzaffarpur District, several tracts of land were richly-cultivated, though the topography displays marshland and lakes at various locations. The geography of the district can be divided into three parts: the tract south of the Bur Gandak; the doab between the Bur Gandak and the Baghmati; and the areas north of the Baghmati which touched the borders of Nepal. The first area bordered the Ganga on the south and Darbhanga on the east. The tract is generally elevated upland with, in the southeast, a depression with several lakes, the largest being the Tal Baraila. This area used to be the most fertile and intensively planted. According to the testimony of a mid-nineteenth-century surveyor, Mr Wyatt, there was hardly any room left for the expansion of cultivation.⁵³ The area produced both the *rabi* and *bhadai*—quick-growing rice, millet, maize, jute—crops and the soil got fertilized from the overflow of the Ghaghara and Ganga. Wyatt further reported that two-thirds of the land in Hajipur pargana, on the northern banks of the Ganga, was under cultivation and mango groves, village sites and waste plots covered the rest.

The second geographical area, the doab between the Bur Gandak and Baghmati constituted the lowest part of the district. The old beds of the shifting rivers formed numerous semi-circular oxbow lakes that were sources of irrigation and fishing. The area produced paddy as well as different *rabi* and *bhadai* crops. The third area of the district, to the north of Baghmati, was the relatively low-lying plain, marshy in most places but ringed by ridges of uplands. The types of soil found were “*dorus muttyar*”

⁵² Kerr, *Final report*, 5–9; C. J. Stevenson-Moore, *Final report on the survey and settlement of the Narhan Ward's estate, in the Monghyr District, Bengal, seasons 1893–98* (Calcutta, 1898), 1–3; see also Jean Deloche, *Transport and communications in India: Prior to steam locomotion*, vol. 2, *Water transport* (Delhi: Oxford University Press, 1994), 23.

⁵³ C. J. Stevenson-Moore, *Final report on the survey and settlement operations in the Muzaffarpur District, 1892 to 1899* (Calcutta: Bengal Secretariat Press, 1901), 9. Wyatt is quoted by Stevenson-Moore.

and crops obtained were “bhadoi, kharif, and rabi, and the principle crops [included] paddy, grain, wheat, barley, mussur, soothnee, vegetables, chillies, tobacco, indigo, and poppy.”⁵⁴ Rivers such as the Saligrami Gandak, Bur Gandak and Baghmata and their tributary systems provided communication links to the area.

In the relatively humid zone, the Tirhut region’s prosperity derived from the productive land, the rivers as a source of irrigation and fertile silt and, above all from the well-populated and settled villages as suppliers of labour. This region was a part of the Vajji *ganasangha* (confederacy) during the second half of the first millennium BC. Perhaps the productivity of land and rich resources of the region explains why the ancient Vajji confederacy resisted Magadha’s expansion for a long time. However, the latter’s access to the dry zone resources (militiamen, supplies of iron, and jungle products such as elephants and wood) proved crucial for its political ascendancy over the people of the Ganga plain. Also, in the sixteenth century, the Hajipur fort had become a powerful stronghold of the Afghans who opposed the Mughals’ expansionist drive in the Tirhut region. Further west along the Ganga is Saran District, to the north of which is Champaran District. As noted above, both districts are in an elevated position and slope gradually south-eastward toward the Ganga. While Saran receives 44.9 inches of annual precipitation, Champaran gets 54.1 inches. These areas were highly fertile and richly-cultivated in the early modern and colonial periods. George Forster, who visited the collector’s office at Chhapra in the 1780s, reports that Saran and Champaran together produced annual revenue of fourteen and a half lac rupees, or 145,000 British pounds.⁵⁵ Overall, we can observe that the northern part of the Ganga plain, which was relatively more humid and received higher rainfall, was very fertile and double-cropping was practiced in many tracts. The ease of irrigation through the perennial streams, higher rainfall and fertile soil contrasted with areas south of the Ganga.

In the above section I presented a broad geographical survey of the Ganga plain. In order to situate the historical events in the plain in a long-term perspective, in the following section I will explain the historical trajectories such as migration, settlement and state formation in South Asia by paying close attention to the monsoon and climate change.

Section II: Climate and Migration, 1000 BC–AD 1500

It is hard to find authoritative studies on the migration and settlement pattern of Indo-Aryan-speakers in the Ganga plain during the early historic period. This is primarily because research in geography, history and archaeology has yet to be fully integrated, and the fragmentary treatment of the subject in the historiography gives a rather confusing picture. Theories based on textual interpretation suggest that Indo-Aryan-

⁵⁴ Stevenson-Moore, *Final report.... the Muzaffarpur District*, 10–11; for embankments see also Sir John Houlton, *Bihar the heart of India* (Bombay: Orient Longmans, 1949), 106.

⁵⁵ George Forster, *A journey from Bengal to England, through the northern part of India, Kashmere, Afghanistan, and Persia, and into Russia, by the Caspian Sea*, 2 vols. (London, 1798), 1:26.

speakers migrated to the Ganga plain from the northwest. However, such theories do not elaborate on why these peasants with cattle moved and precisely which route they followed. For example, did they follow the river course of the Yamuna and Ganga or, rather, did they avoid the riverbanks because of the supposedly dense forest?⁵⁶ Also, little light has been shed on why they chose particular regions for settlement in the expansive Ganga plain. Historians explain the Indo-Aryan settlement in the plain in terms of early political formations such as mahajanapadas and ganasanghas.⁵⁷ According to historians, people gradually migrated from the northwest to the southeast in the Ganga plain, but there has been little effort to explain why Indo-Aryans gravitated toward the more humid zones of the eastern Gangetic plain in the first millennium BC. Archaeologists, on the other hand, suggest that people also moved from east to west and sometimes even from south to north in South Asia.⁵⁸ Given the poor state of the archaeological excavations in the Ganga plain, archaeologists are as yet unable to explain whether there was any set pattern in the way people moved.⁵⁹

An alternative approach to this problem is to look at the geographical-logistical (geo-logistical) and environmental influences on migration and settlement. I shall suggest that as herders of cattle and horses with a predominantly pastoral or “mixed economy” based on animal tending and limited food production, the Indo-Aryans

⁵⁶ Rakesh Tewari, “The myths of dense forests and human occupation in the Ganga Plain,” *Man and Environment: Journal of the Indian Society for Prehistoric and Quaternary Studies* 29:2 (2004): 102–5.

⁵⁷ A. L. Basham, *The wonder that was India: A survey of the history and culture of the Indian sub-continent before the coming of the Muslims*, 3rd ed. (London: Sidgwick and Jackson, 1967), 38–43; Romila Thapar, *Early India: From the origins to AD 1300* (Berkeley: University of California Press, 2002), 137–56; Ram Sharan Sharma, *The state and varna formations in Mid-Ganga plains: An ethnoarchaeological view* (New Delhi: Manohar, 1996).

⁵⁸ Dilip K. Chakrabarti, “Prehistoric Ganga basin,” *Journal of the Economic and Social History of the Orient (JESHO)* 15:1/2 (June 1972): 216–17; D. K. Chakrabarti, “Iron age,” in *An encyclopaedia of Indian archaeology*, ed. A. Ghosh, 2 vols. (Delhi: Munshiram Manoharlal, 1989), 1:109. For the problems of Indo-Aryan migration theory, see Sumit Guha, *Environment and ethnicity in India, 1200–1991* (Cambridge: Cambridge University Press, 1999). Guha argues that “when the second urbanisation and agrarian settlement in the great river valleys began to elaborate the outlines of a sub-continental political and cultural system during the first millennium C.E., the nascent centres of that civilization were part of an interacting continuum of communities that occupied, thickly or thinly, the whole of South Asia” (26).

While Guha tries to evade the centrality of the Ganga plain and the Ganga River in state formation and urban developments in the first millennium BC, his argument is of little help in guiding us as to why the process unfolded during that particular period and whether there were some stimuli coming into the fertile Ganga plain which transformed the agrarian economy. However, people might have been migrating in different directions across South Asia for a variety of reasons. But if the ancient Indian textual sources can be relied upon, then the dominant form of migration which actually transformed the political and cultural landscapes of South Asia seems to have come from the northwest. Historian Romila Thapar suggests that some major changes in the societies of the Indo-Ganga plains “resulted from the coming of the Indo-Aryan speakers;” see *Early India*, 134. For the linguistic evidence of the migration of Indo-Aryan-speakers to India, see also Hans Henrich Hock, “Out of India? The linguistic evidence,” in *Aryan and non-Aryan in South Asia: Evidence, interpretation and ideology; Proceedings of the international seminar on Aryan and Non-Aryan in South Asia University of Michigan, Ann Arbor, 25–7 October 1996*, ed. Johannes Bronkhorst and Madhav M. Deshpande (Cambridge: Harvard University, Department of Sanskrit and Indian Studies, 1999), 1–18.

⁵⁹ As noted by Thapar, *Early India*, p. 139, the archaeological sites of the Ganga plain still await horizontal excavation.

probably kept gravitating toward the grasslands where sufficient fodder could be had for their animals. Since the variability of rainfall and water resources largely determined the areas of grassland, fodder and food production in the Ganga plain, therefore I will first give a brief description of the monsoon pattern and rhythms of agriculture.

The Monsoons and Rhythm of Agriculture

In India, fertility, growth and plenitude are closely linked to the seasonal change of wind direction and related phenomenon that affect all lands bordering the northern Indian Ocean and China Seas and which the Arabs called *mausim*, literally season.⁶⁰ In India, the summer monsoon lasts from June to September and the winter monsoon from December to February. The former, known as *varsha ritu* (the rainy season), is the most important for ensuring good harvests as it brings about 90 percent of the country's total annual rainfall. In the Ganga plain the summer monsoon lasts from June until September. During the summer monsoon the plain wears a lush green look as the crops and flora surge into life after the dry hot season comes to an end. The rhythm of agriculture is heavily dependent upon the timely arrival of the *varsha ritu* and has been much celebrated since antiquity. For example, Kalidasa, a fifth-century AD poet, in his *Ritusamhara* attributes lovely verses in praise of the rainy season.⁶¹ The sixth-century *Brhat Samhita* of Varahamihira contains important astronomical observations predicting rainfall.⁶² Issues relating to agriculture and forecasting rain by observing nature and wind patterns were carried over into an eleventh-century eastern Indian text called the *Krsiparasara* (Extension of agriculture), the author of which is believed to have partly relied on the *Brhat Samhita*.⁶³ The rainfall and monsoon entered these texts primarily because of their overwhelming importance for agriculture and material wellbeing of society.

The rhythm of agriculture neatly follows the monsoon. The double-crop pattern of India, that is *rabi*, and *kharif* (a crop sown in late summer and autumn and harvested in winter), is organized along the two monsoons.⁶⁴ The winter or *rabi* crops—wheat,

⁶⁰ Henry Yule and A. C. Burnell, *Hobson-Jobson: A glossary of colloquial Anglo-Indian words and phrases, and of kindred terms, etymological, historical, geographical and discursive*, ed. William Crooke (London: John Murray, 1903), 577.

⁶¹ R. S. Pandit, *Ritusamhara, or The pageant of the seasons: Translated from the original Sanskrit lyrics of Kalidasa* (Bombay: National Information & Publications, 1947), 35–36. For the life and historicity of Kalidasa, see P. von Bohnen and Herman Kreyenborg, *Kalidasa: Der kreis der jahreszeiten (Ritusamhāra)* (Leipzig: Insel-Verlag, 1919), 36–38. It is believed that the poet was born in a north Indian city of Ujjain in the early fifth century AD.

⁶² Varahamihira, *Varahamihira's Brhat Samhita with English translation, exhaustive notes and literary comments*, by M. Ramakrishna Bhat, 2 vols. (Delhi: Motilal Banarsidass, 1981), chapters 19–28.

⁶³ Ryosuke Furui, "The rural world of an agricultural text: A study on the *Kṛṣi-pāraśara*," *Studies in History* 21:2, n.s. (2005): 154–55; Also see *Kṛṣi-pāraśara*, ed. and trans. Girija Prasanna Majumdar and Sures Chandra Banerji (Calcutta: Asiatic Society, 1960).

⁶⁴ The origin of the *rabi* and *kharif* crops in South Asia is believed to go back to the sixth and early second millennium BC respectively. The former is associated with wheat and barley cultivation and the latter with sorghum, various millets and rice. See Richard H. Meadow, "Continuity and change in the

barley, oilseeds, and various types of lentils—need less water than the kharif crops and are sown after the rainy season is over. In the humid areas of the Ganga plain the rabi crops benefit from the irrigation carried out from the rivers and stagnant pools of water while in the drier zones of the plain and in the Punjab the crops depend on the precipitation during the winter monsoon.

The summer or kharif crops may be divided into two types: bhadaï and aghani—predominantly high-quality rice. These summer crops chiefly rely on the downpour during the summer monsoon. The sowing of bhadaï crops commences with the onset of rains in June/July and harvesting is done in August/September. The aghani paddy crop is sown in August/September and relies chiefly on the monsoon rainfall and in the later months on the availability of water through artificial irrigation. Harvesting of the crops is done in November/December. After the bhadaï crop is reaped the peasants sow lucrative rabi crops in the same field. Further, the bhadaï-rabi combination offers more security against the failure of the rains. In the case of aghani rice, the crop takes longer to mature and only inferior rabi crops can be cultivated in the same ground.⁶⁵

The rabi crops sown in the more arid zone differ from those cultivated in semi-arid areas. For example, in the areas west of Allahabad valuable crops such as wheat, barley, and oilseeds are produced while in Bihar the inferior cash crops such as *khesari* (chickling-vetch) and gram are sown on the fields cleared after aghani paddy is harvested.⁶⁶ The rabi crops in the more humid parts of the Ganga plain are less dependent on winter precipitation as the summer monsoon recharges the water table and numerous tanks and pools retain sufficient water for irrigation. Thus, the monsoon rainfall and the constant water supply from the snow-fed rivers, ponds and tanks ensure fertility of the more humid parts of the Ganga plain and as a result it became one of the most densely populated areas in the world.

The French geographer Paul Vidal de la Blache (1845–1918) correctly assumed ancient centres of dense population to have been “confined approximately to a zone bounded by the Tropic of Cancer and the fortieth parallel of latitude.”⁶⁷ Humid and wet parts of the Ganga plain squarely fit the example of zones that historically maintained a high population density and it was in this area that ancient civilizations flourished. The whole Ganga plain is characterized by dry winters and wet summers. As we already noted the plain is in no way homogeneous and the crop patterns, methods of agriculture and productivity show contrasts from one area to the other depending upon the variability of rainfall. The summer monsoon gradually diminishes as it moves northwest from the Bay of Bengal toward the Indus plain. From east to west, the monsoon gives more rain in the northern sub-montane tract of the Ganga plain than in

agriculture of the greater Indus valley: The paleoethnobotanical and zooarchaeological evidence,” in *Old problems*, ed. Kenoyer, 61.

⁶⁵ O. H. K. Spate et al., *India, Pakistan and Ceylon: The regions*, 566–68.

⁶⁶ Spate and Learmonth, *India and Pakistan*, 566–68; J. J. L. Gommans, *Mughal warfare: Indian frontiers and high roads to empire, 1500–1700* (London: Routledge, 2002), 8–9.

⁶⁷ Vidal de la Blache, quoted in Ganguli, *Trends of agriculture*, xvii.

the southern tracts of the Vindhya Range and western parts of the Chhota Nagpur Plateau, and in the course of its westward movement it gradually weakens in intensity.⁶⁸

The relatively dry conditions to the south of the Ganga had significant implications for state formation in ancient India. Human settlement, urban developments and state formation were firmly rooted in this strategic region, and Pataliputra remained the imperial centre for many centuries. Why should Pataliputra have become a favoured seat of imperial power since the late first millennium BC? Does climate change hold the clue?

Climate Change

While the analysis makes use of climatic and geographical data to make for the deficiencies of textual and archaeological sources, I do not intend to write a geography- or climate-determined history of the settlement pattern in the Ganga plain. Apart from the natural environmental factors, the migrants themselves played an active role in adopting new technologies, experimenting with the agrarian economy and interacting culturally with an already-settled population in the Ganga plain. At the same time it will be hard to ignore the natural environmental factors as too benign or insignificant to warrant any historical attention. At best our exercise is aimed at striking a balance between the two to offer a broad-based historical interpretation.

Recent data on climate change, though far from conclusive, broadly correlate with wider historical developments in South Asia. It is assumed that around 16000 BC, at the height of the last glacial peak, the summer monsoon was much weaker and summer rainfall far less than what it is in contemporary South Asia. This meant unfavourable conditions for agricultural development in the drier parts. Around 9000 to 8000 BC summer precipitation peaked, and then followed a gradual trend of drying. The period from around 8000 to 1000 BC has been divided into four climatic phases. Phase one (before 8000 BC) marks a watershed which ended with an increase in rainfall compared to the pre-9000 BC; phase two (8000–7500 BC) remained a wet period with relatively less rainfall than the earlier period; and phase three (7500–3000 BC) saw a weakening of rainfall and an increase in aridity compared to the previous phases, although it was not too dry to effect any ecological dislocation. Phase four (3000–1000 BC) has been divided into three sub-phases. Sub-phase one (3000–1800 BC) is believed to have witnessed a dramatic increase in rainfall which might have been slightly higher than the present day; sub-phase two (1800–1500 BC) was a short spell with decreased rainfall; and sub-phase three (1500–1000 BC) had a slight increase in rainfall although arid conditions continued.⁶⁹ There were short-term climatic

⁶⁸ Ganguli, *Trends of agriculture*, xvii–xviii; see also Spate and Learmonth, *India and Pakistan*, 54–63. See particularly the map on p.55 for the rainfall zones.

⁶⁹ Jim G. Shaffer and Diane A. Lichtenstein, “Ethnicity and change in the Indus valley cultural tradition,” in *Old problems*, ed. Kenoyer, 120. See also V. N. Misra, “Climate, a factor in the rise and fall of the Indus civilization: Evidence from Rajasthan and beyond,” in *India’s environmental history: From*

fluctuations and changes in local precipitation across this whole period, and while historians disagree about certain specifics, certain broad trends have been identified.⁷⁰

If the climatic data summarized by the historians Herman Kulke and Dietmar Rothermund are correct, it is interesting to note the patterns of climate change and historical shifts in South Asia over the past millennia. They have identified trends that suggest that the climate of the last two millennia, up to the present, follows a pattern similar to a mean value between the extremes found in the period between 2500 and 400 BC. It is believed that in the third millennium BC there was a sudden rise in the rainfall which reached its peak by 2500 BC but, by the end of that millennium the precipitation receded as quickly as it had risen and, from around 1800 to 1500 BC rainfall was far less than the 3000 BC level. Between 1500 and 1000 BC there was another slight increase in rainfall before it receded again. Around 500 BC the rainfall increased, but the century around 400 BC was perhaps the driest period on record. In the following centuries the rainfall became more abundant but never reached the level of 2500 BC.⁷¹

In the first and second millennia AD two major climatic phases are identified which have had important economic and political repercussions throughout Eurasia. The Medieval Warm Period 800/850 or 900/950 to 1250/1300 AD (also known as the Medieval Climatic Anomaly) has been identified primarily on the basis of European data and corresponds to demographic and economic growth in the European high Middle Ages.⁷² According to Victor Lieberman, at the same time monsoon Asia is believed to have witnessed high precipitation and a corresponding increase in agricultural activity. Sceptics suggest paying attention to the local variations in climatic patterns that might not follow the Medieval Warm Period climatic trends. In the case of Central Asia, for example, Richard Bulliet notes a lack of demographic and economic growth between the eleventh and twelfth centuries when an intense cold wave and snowfall marked the winter months and famines were frequent.⁷³ The efforts of the steppe-dwelling Central Asian populations to venture toward more moderate climate zones was perhaps the result of complex circumstances involving a colder climate, difficult agricultural and cattle-herding conditions and a harsh economic life. The Turko-Afghan raids in the eleventh and twelfth centuries and their eventual success in

ancient times to the Colonial Period, ed. Mahesh Rangarajan and K. Sivaramakrishnan, (Ranikhet: Permanent Black, 2012), 53–64.

⁷⁰ Meadow, “Continuity and Change,” in *Old problems*, ed. Kenoyer, 61–62.

⁷¹ Hermann Kulke and Dietmar Rothermund, *A history of India* (New York: Routledge, 2004), 30.

⁷² Victor Lieberman, *Strange parallels: Southeast Asia in global context, c. 800–1830*, vol. 2: *Mainland mirrors: Europe, Japan, China, South Asia, and the islands* (Cambridge: Cambridge University Press, 2009), 80; Victor Lieberman and Brendan Buckley, “The impact of climate on Southeast Asia, circa 950–1820: New findings,” *MAS* 46:5 (2012): 1050, see for Medieval Climatic Anomaly beginning in 900/950 AD; Richard Bulliet, in his study on Iran, suggests that there occurred a “prolonged climatic cooling” from the first half of the ninth century to the early twelfth century in a geographical area encompassing Iran, Central Asia and Mesopotamia as far south as Baghdad, Anatolia and Russia. See Richard W. Bulliet, *Cotton, climate, and camels in early Islamic Iran: A moment in world history* (New York: Columbia University Press, 2009), chap. 2.

⁷³ Bulliet, *Cotton, climate, and camels*, 69–95.

establishing the Delhi Sultanate may perhaps be viewed from the perspective of diminishing economic and political opportunities in Central Asia as a result of adverse climatic conditions.

Lieberman argues that the so-called Little Ice Age from 1580 to 1680 contributed to a series of political crises, failed monsoons and famine in different parts of Europe and Asia. In Europe, the periods between 1470 and 1560 and again between 1710/1720 and 1805 witnessed a partial reversal of the cooling trend, which meant agriculturally more propitious conditions in both Europe and Asia. It has been rightly suggested that such hemisphere-encompassing climatic phenomena varied with altitude, latitude, and the geomorphology of a given area, and significant differences can be noted in the rate of climate change from one region to another. At the same time, long-term climatic trends in a given region could coexist with annual and decadal fluctuations.⁷⁴

Despite these problems and the fragmentary nature of climatic data generally, if we correlate the broad historical trends since the Harappan civilization with the climatic and rainfall trends noted above, it is tempting to see a correspondence between them and the cycles of historical patterns in South Asia. A relatively higher precipitation in the third millennium BC witnessed the full-blown Harappan urban civilization while the growing aridity at the end of the third millennium BC coincided with the Harappan decline. The influx of Indo-Aryan-speakers into the Indo-Ganga plain corresponds with the largely arid but slightly increased rainfall between 1500 and 1000 BC. The available climatic data also agree with the migration of the Indo-Aryans from the Indo-Ganga divide to the south and eastward into the Ganga plain as the weather became drier again after around 1000 BC. Improved rainfall around 500 BC would have further accelerated agrarian expansion and state formation in the areas straddling the dry and humid zones of the Ganga plain.

The recent study of Sanai Lake in the Ganga plain seems to confirm the above hypothesis on climate change based on the palaeobotanical findings in Rajasthan. The researchers of Sanai Lake concluded that “[t]he climatic oscillation recorded from the Sanai lake match broadly with the climatic records from other parts of the Indian subcontinent, suggesting that these oscillations are an expression of broad scale probably global climatic changes rather than local climatic variations.”⁷⁵ Whether global or local, if the climatic data discussed in the above paragraphs are correct, it is easy to correlate them with the historical processes in South Asia. Eurasia—and particularly South Asia—underwent significant economic and political change during

⁷⁴ Victor Lieberman, *Strange parallels: Southeast Asia in global context, c. 800–1830*, vol. 1: *Integration on the mainland* (Cambridge: Cambridge University Press, 2003), 102. In a recent article, the earlier understanding of a “markedly unfavorable climate in the mid and late seventeenth century” as espoused by Lieberman and Anthony Reid, has been revised in the light of new climate data from mainland Southeast Asia, see Lieberman and Buckley, “The Impact of Climate,” 1088–89.

⁷⁵ S. Sharma, et al., “Late-glacial and Holocene environmental changes in Ganga plain, Northern India,” *Quaternary Science Reviews* 23 (2004): 145–59; see also Purushottam Singh, *Archaeology of the Ganga plain*, 33.

the period between the tenth and thirteenth centuries AD. Partly as a result of an improved monsoon after the end of the first millennium AD, the arid zones of South Asia (receiving about 45 inches or less rainfall per annum) were increasingly brought under the plough, leading to increased agricultural production, on lines roughly comparable to what happened in Pagan in Burma during this period.⁷⁶ Another development in the Eurasian context was perhaps a remarkable population growth. André Wink suggests that between the seventh and early eleventh centuries the population in some parts of Central Asia might have doubled.⁷⁷

Demographic growth would have been more pronounced especially during the mild climatic phase between the seventh and tenth centuries. It was during this period that Iran witnessed rapid economic growth and expansion of cotton cultivation thanks to a warmer climate. Subsequently, in the eleventh and twelfth centuries, Central Asia suffered agricultural and economic reverses primarily as a result of climatic cooling as noted by Bulliet. During the period of reverses, there occurred a series of plundering raids in India beginning with Mahmud of Ghazni around the turn of the eleventh century. A part of the semi-nomadic population of the Eurasian steppe was lured into the raiding expeditions on the agriculturally rich and resourceful Indo-Ganga plain. The horse-based armies of Inner Asia (including modern Afghanistan, southern Iran, Turkmenistan, and Kazakhstan) were able to establish their political dominion over the Indo-Ganga plain by the thirteenth century. The favourable monsoons during the early centuries of the second millennium AD would have assisted agrarian expansion and economic growth in South Asia. Impetus to economic growth also came after the establishment of the Turkish Sultanate when long-distance trade linked the entire Ganga plain closely with the wider Eurasian economy. This trade network incorporated large parts of Asia and as far west as the eastern Mediterranean.⁷⁸ As the Ganga plain lies in the “exposed zone,” to use Lieberman’s term for parts of Eurasia within easy reach of semi-nomadic conquerors from Central Asia, the connection between climate change and such gradual migrations from the northwest of the Indian subcontinent can be traced at least to the end of the third millennium BC, when the western migratory routes from Central Asia to the Indus plain had become active again as we will see shortly.⁷⁹ To analyse the possible effect of climate change on the pattern of migration

⁷⁶ Lieberman, *Strange parallels*, 1:88–119. It is suggested that in the arid zones a strong monsoon would have influenced agricultural activities by providing rain water and by making the construction of dams on the rain-fed streams worthwhile. For example, between AD 1000 and 1300, in the Deccan’s dry Telangana region around 5,000 such water reservoirs were constructed; see Lieberman, *Strange parallels*, 2:690; M. K. Dhavalikar, on the basis of Nile flood data, suggests that between AD 600 and 1000 droughts and famines were probably frequent in India, “Green imperialism: Monsoon in antiquity and human response,” *Man and Environment: Journal of the Indian Society for Prehistoric and Quaternary Studies* 26:2 (Jul–Dec 2001): 25–6.

⁷⁷ André Wink, *Al-Hind: The making of the Indo-Islamic world*. Vol. 2, *The slave kings and the Islamic conquest, 11th–13th centuries* (New Delhi: Oxford University Press, 2001), 168.

⁷⁸ Janet L. Abu-Lughod, *Before European hegemony: The world system AD 1250–1350* (New York: Oxford University Press, 1989), 170–84.

⁷⁹ For the exposed zone, see Lieberman, *Strange parallels*, 2:92–114.

and settlement in the Ganga plain, I shall briefly recapitulate the dislocation of the population as a result of the Harappan decline.

The migration of the Harappans indicates serious trouble in the sustainability of the lower Indus region as a habitat zone. These would have resulted from increasing aridity around 2000 BC. Other climatic factors such as a shift in the river course as a result of seismic activity cannot be ruled out. Robert Raikes suggests that after the diversion of the Ghagghar and consequent decline of Kalibangan around 1800 BC, the inhabitants moved upstream to the Ganga river system.⁸⁰ Such upstream movements perhaps reflect the distress resulting from the scarcity of water resources. For the abandonment of Kalibangan, Raikes argues that the theory of “sudden and dramatic” climate change must be discounted. The archaeologist D. P. Agrawal, on the other hand, holds climate change to be a probable factor in the Harappan decline and believes that increasing desiccation would have given a final blow to a people already exhausted from their efforts to control the menace of floods.⁸¹ Scholars of environmental history have shown that during the third and early second millennium BC there was an erratic pattern of global climate and rainfall. Gurdip Singh’s research based on pollen identification from twenty-two old lake sediments in Rajasthan shows that between 3000 and 1800 BC there was substantially higher rainfall and the decline of the Harappan civilization coincided with the rise in aridity toward the end of that period.⁸²

Historians such as Shereen Ratnagar have raised several objections to this proposition about the rise in aridity for the general decline of the Harappan civilization. It has been suggested that the impact of such dry weather would be different in Sind, receiving less than two inches of annual rainfall and, at Ropar in the Punjab, which receives five to six inches.⁸³ Indeed, the different rainfall zones of Sind and Ropar would have been affected differently by climate-related change, and the decline of the latter was probably linked more to the end of its entrepôt function than to its aridity. As B. D. Chattopadhyaya suggests, Ropar was a nodal point facilitating the linkages between the pastoral and agricultural modes of economy, and it is possible that the decline of the lower Indus towns would have adversely affected the fortunes of Ropar as a supply centre for the goods of the pastoral economy.⁸⁴ Furthermore, since eastern

⁸⁰ Robert Raikes, “Kalibangan: Death from natural causes,” in *The decline and fall of the Indus civilization*, ed. Nayanjot Lahiri (New Delhi: Permanent Black, 2002), 210.

⁸¹ D. P. Agrawal, *The Indus civilization: An interdisciplinary perspective* (New Delhi: Aryan Books, 2007), 9. For flooding as a cause of the decline of Harappan civilization, see George F. Dales, “Civilization and floods in the Indus Valley,” *Expedition* 7:4 (1965):10–19. Experience from the Indian subcontinent shows that famines or dry seasons were generally accompanied by excessive rains and flooding, and the vice versa. If the unprecedented flooding of the Indus in Pakistan in 2010 and again in 2011 is any guide, we can assume that such extreme weather conditions would have contributed to the decline of the Harappan civilization.

⁸² Gurdip Singh, “The Indus valley culture (seen in the context of post-glacial climate and ecological studies in North-west India),” *Archaeology and Physical Anthropology in Oceania* 6:2 (1977): 177–89.

⁸³ Shereen Ratnagar, *The end of the great Harappan tradition* (New Delhi: Manohar, 2000), 16.

⁸⁴ Brajadulal Chattopadhyaya, *Studying early India: Archaeology, texts, and historical issues* (New Delhi: Permanent Black, 2003), 52. For a survey of the Harappan landscape and environment, see Jane McIntosh, *The ancient Indus Valley: New perspective* (Santa Barbara: ABC-CLIO, 2008), 9–26.

Punjab received higher rainfall than Sind, in a drier climatic condition the migration would tend to be more toward the higher rainfall zone and to the upper reaches of the Himalayan glacier-fed perennial rivers of the Indo-Ganga plain after the early second millennium BC.

Migration and Settlement

It is quite possible that climatic disturbances forced the people to migrate and settle in the areas that offered greater security in terms of the possibilities of river irrigation and comparatively higher rainfall. Many late-Harappan sites overlap with the Painted Gray Ware⁸⁵ culture sites at Bhagwanpura and Dadheri in Haryana and Katpalon and Nagar in Punjab⁸⁶ in the relatively higher-rainfall zone. The late-Harappan sites also coincide with the Ochre Colour Pottery⁸⁷ levels at the sites of Bargaon and Ambakheri in western Uttar Pradesh. Thus, we may discern a pull toward the Indo-Ganga plain where the late-Harappans and new migrants from Central Asia settled in the second millennium BC. Insufficient climatic data from Central Asia do not permit us to suggest whether it was a drier and colder climatic regime around 2000 BC that pushed the Central Asian steppe dwellers to seek better pasture lands for their livestock.⁸⁸ That a gradual, protracted migration took place is beyond doubt as is evidenced from the archaeological and linguistic works. The north-western route of the Indian subcontinent facilitated migration of horse-riding pastoral nomads who moved into the more fertile and agriculturally stable regions of the upper Indus plain in the Punjab.⁸⁹ Following some of the early Indo-Aryan-speakers, it is believed that the Sanskrit-speaking Rig Vedic Aryans started migrating to South Asia from about 1400 BC, and they made the *Saptsindhu* (the land of seven rivers) region of the Punjab their new home.⁹⁰

⁸⁵ This was wheel-turned, well-fired gray pottery. It bore many imaginative designs of various shapes. It is supposed to belong to the later Vedic period but is generally not related to the Indo-Aryans. Recently, this pottery culture has come to be dated between 1100 and 500 BC. It is suggested that it would have been produced by local people who were low in the Indo-Aryan social hierarchy.

⁸⁶ R. S. Sharma, "Problems of continuity and interaction in Indus and post-Indus cultures," *Social Scientist* 28:1/2 (2000): 5–6.

⁸⁷ This pottery type is found at the lowest levels of the major sites containing materials dating pre-900 BC, and therefore is assumed to belong to the early Rig-Vedic Aryans.

⁸⁸ Andre Gunder Frank, *The centrality of Central Asia* (Amsterdam: VU University Press, 1992), 9.

⁸⁹ See Shereen Ratnagar, *Understanding Harappa: Civilization in the greater Indus valley* (New Delhi: Tulika, 2001), 134–5, for the opening of the Central Asian migration route around 2000 BC. For horse domestication, see Sandor Bökönyi, "The Earliest Waves of Domestic Horses in East Europe," *Journal of Indo-European Studies* 6:1–2 (1978): 17–64. Evidence of sporadic horse domestication appears in southern Ukraine from the fifth millennium BC. The practice became widespread throughout East Europe only by the end of the third millennium BC. A parallel move toward horse domestication seems to have occurred in Kazakhstan and Central Asia at the turn of the fourth millennium BC. In the course of the third millennium, the use of horses became more widespread across Central Asia. It is in this context that the migration of horse-mounted pastoralists to the Indian subcontinent at the end of the third millennium BC should be seen. Horse domestication is also discussed in Richard W. Bulliet, *Hunters, herders, and hamburgers: The past and future of human-animal relationships* (New York: Columbia University Press, 2005), chaps. 5–7.

⁹⁰ Burjor Avari, *India: The ancient past: A history of the Indian sub-continent from c.7000 BC to AD 1200* (London: Routledge, 2007), 66.

One can form an idea about the Rig Vedic Aryans' geographical knowledge from their naming of the rivers located in their habitation zone. The western rim of their region was bound by rivers such as the Indus, Gomāl, Kurram and Kubha. To the north they mention the Swat River, the valley of which was inhabited by the migrating Indo-Aryans. The core region of the Rig Vedic Aryans' geographical horizon was the drier but well-watered zones in the Punjab. Apart from the Indus, the seven rivers of the *Saptsindhu* region were the Sarasvati, Drishadvati, Sutlej, Beas, Ravi, Chenab and Jhelum. The eastern boundary of this zone was marked by the Yamuna and the Ganga; the last river is mentioned only once in one of the latest hymns of the *Rig Veda*. It was in this habitation zone where the early generations of Indo-Aryans had settled and led pastoral and semi-nomadic lives while growing some barley and other cereals.⁹¹ By around 900 BC, however, the Indo-Aryans had entrenched themselves in the Ganga-Yamuna doab.

Ancient Indian texts speak of five geographic components of the Indian subcontinent: *Madhya Desha* or middle country; *Uttarapatha* or northern India; *Prachya* or eastern India; *Dakshinapatha* or southern India; and *Aparanta* or western India. The centre of gravity of this fivefold division was firmly rooted in *Madhya Desha*, also known as Aryavarta or the home of the early Aryans, and its symbolic boundary extended from the west in the dry zone of Haryana where the Sarasvati River is lost into sand and reached the east in the relatively less arid area at a place where the Sarasvati is believed to resurface and join the confluence of the Ganga and Yamuna. The Sanskrit word *patha* refers to a road, hence *Uttarapatha* and *Dakshinapath* signified the northern and southern roads. Both these long-distance arteries of India remained crucial for migration and movement till the nineteenth century when the railroads were laid down mostly parallel to the tracks of these ancient roads. While *Uttarapatha* linked the Ganga and Yamuna river systems and the Punjab to Central and West Asia, *Dakshinapatha* or the southern road connected *Madhya Desha*, Malwa and the Deccan Plateau. Interestingly, both these highroads pass along the eastern and southern extensions of the semi-arid zone.⁹² Does such alignment of roads along the margins of the semi-arid zone offer any hint about the migration of Indo-Aryans to the Ganga plain?

The precise migratory routes followed by the Indo-Aryans to reach the Ganga plain are still shrouded in mystery. Historians are vague about whether they followed the Himalayan foothills or simply kept to the riverbanks of the Yamuna and Ganga to reach the agriculturally more fertile semi-arid zone of the Ganga plain. Archaeological data and textual sources have been of little help in solving this riddle. Far from claiming to solve this problem, we suggest that the Indo-Aryans moved through the drier, more accessible zones where the requirements of their mixed economy (cattle

⁹¹ Bridget Allchin and Frank Raymond Allchin, *The rise of civilization in India and Pakistan* (Cambridge: Cambridge University Press, 1982), 306.

⁹² Gommans, *Mughal warfare*, 17; for the geographical details, see Joseph E. Schwartzberg, ed., *A historical atlas of South Asia* (New York: Oxford University Press, 1992), 161– 63.

tending and growing a little wheat and barley) could be met. They found well-drained arable, meadow-type older alluvium and prairie soils, drainage and pasture along the banks of the Yamuna and Ganga rivers and moved along this ecological zone to exploit their resources.⁹³ After 1000 BC drier weather conditions would have opened up more areas of the Ganga-Yamuna doab for agriculture and settlement with the attendant result of demographic growth. Pushed by the need for more arable land and pasture the Indo-Aryans continued moving eastward along the semi-arid and well-watered zones. Along their migratory route through the doab they would have encountered landscape and ecological settings not dissimilar to their earlier homelands in the drier part of the Punjab. Furthermore, the dry weather might have assisted them by thinning the jungles in the humid parts of the Ganga plain and making it easier for them to reclaim the fertile floodplains of the Ganga, Ghaghara and Gandak rivers as they moved eastward.

The need for both arable land and pasture would have lured the migrant population toward the floodplains and it is possible that following the Ghaghara and Gandak rivers they would have reached the Himalayan foothills to the north of the Ganga where the fertile older alluvium and prairie-type soils abounded. This was the region where the early ganasanghas were formed before the age of the Buddha. In the existing literature, migration toward the Himalayan foothills has been explained in terms of the endeavours of the later Vedic Aryans to escape the monarchical control of the kingdom of the Kuru-Panchalas (700–600 BC) in the Aryavarta.⁹⁴ But more than monarchical control, it was perhaps the growing need for food and fodder that drove a part of the population to move from the semi-arid to the well-watered zones to the east along the Ganga. As the Indo-Aryans moved eastward onto the Ganga plain they assimilated the previously-settled groups and incorporated them into the Varna and caste hierarchy, while other earlier groups peopled the fringes of arable land and the rainforest further east and south of the plain.

From the Ganga plain the later Vedic Aryans migrated southward into the semi-arid zone probably following the drier marches along the Vindhya Range. Though historians find it difficult to ascertain the chronological sequence and the exact route for the southern migration, some hypotheses have been proposed. On the basis of the epics and Puranas, some claim that peoples of the Yadu clan Aryanised Malwa, Gujarat, Maharashtra, and Orissa. Traditionally, it is suggested that the Yadu clan lived in the vicinity of Mathura and that after being driven away by the Kuru-Panchalas they went to the south of the Chambal River to “the Cedi, Dasarna, Avanti, Mahisamati, Saurashtra, Vidarbha and Dandaka regions of pre-Aryan sedentary agricultural settlements.”⁹⁵ Rather than attributing every Indo-Aryan migration to the growing monarchical control of the Kuru-Panchalas, it seems more likely that the drier climatic conditions facilitated Indo-Aryan groups to follow the semi-arid zone towards the south

⁹³ Spate and Learmonth, *India and Pakistan*; see the adaptation from the Russian geographer Schokalskaya's map for soils on the Ganga plain, 96.

⁹⁴ Kulke and Rothermund, *A history of India*, 50–1. Also Thapar, *Early India*, 149–55.

⁹⁵ Schwartzberg, *A historical atlas of South Asia*, 163.

to reach the agriculturally more propitious regions of Malwa, Saurashtra and Vidarbha. With its huge tracts of fertile prairie soil, Malwa would have been an important launching pad for further southern migration.⁹⁶ Interestingly, all these central and southern regions fall in the rainfall zone of 30–45 inches and the agriculturally fertile river valleys would have been another potential pull factor.⁹⁷ Again, a combination of arable fields and pasture along the drier zone sustained the migrants' mixed economy as they followed the foot of the Vindhya Range southward.

Many of the areas through which the Indo-Aryans migrated had been settled since the Neolithic-Chalcolithic period, and these demographic movements gave rise to cultural interactions and linguistic borrowings between various groups of people. More important, the earlier inhabitants of the Ganga plain had an economy based on hunting, fishing and only limited food production. Though the earlier population practiced cultivation, it was fairly limited and the subsistence requirements were supplemented by foraging and hunting. The sizable pastoral assets of the Indo-Aryan migrants would have acted as a catalyst in boosting the agricultural production when they reached the fertile floodplain of the Ganga River. They might have benefited from the agricultural knowledge of the pre-existing population; evidence of this comes from the borrowing of proto-Munda words related to agricultural implements into the Indo-Aryan lexicon.⁹⁸ A switch from barley and wheat to wet rice cultivation was probably due in part to the pre-existing population's agricultural practices in the less dry, transitional zone of the Ganga plain.

Here, archaeological evidence points to the Neolithic-Chalcolithic settlements in Mirzapur, Gorakhpur and Varanasi Districts as well as in Saran and Gaya Districts in the Ganga plain.⁹⁹ The excavation of the Neolithic site at Maner, a few miles west of Patna, at the confluence of the Ganga and Son rivers, shows its wider links with the other Neolithic sites.¹⁰⁰ These sites suggest human settlement between the northern

⁹⁶ Instances from the *Mahabharata* indicate that the region of Gwalior (between the Chambal and Betwa) witnessed the branching off of many routes and arteries toward the Deccan. *Aranyaka Parvan*, 59.2, mentions: *Ete gachchhanti bahavah panthāno dakshināpatham* (from here go many roads southward) See V. S. Agrawala's introduction to Moti Chandra, *Trade and trade routes in ancient India* (New Delhi: Abhinav Publications, 1977), vii.

⁹⁷ F. R. Allchin, *The archaeology of early historic South Asia: The emergence of cities and states*, (Cambridge: Cambridge University Press, 1995), 116, for the map of mahajanapadas; for rainfall zones, see *The Imperial gazetteer of India*, vol. 26, Atlas (Oxford: Clarendon Press, 1931), 9; for the severe aridity in the Deccan, central and western India from 1000 to 500 BC, see Dhavalikar, "Green Imperialism," 22.

⁹⁸ Thapar, *Early India*, 106; for linguistic borrowings between Indo-Aryan-speakers and other linguistic groups, see George Cardona and Dhanesh Jain eds., *The Indo-Aryan languages* (London: Routledge, 2003), 29– 36.

⁹⁹ T. N. Roy, *The Ganges civilization: A critical archaeological study of the painted grey ware and northern black polished ware periods of the Ganga plains of India* (New Delhi: Ramanand Vidya Bhawan, 1983), 10–11. The archaeological finds excavated at Narhan, on the left bank of River Ghaghara in Gorakhpur District, shed some light on cultures that evolved there after the middle of the second millennium BC. See Purushottam Singh, "The rise of cultures in the Saryupar plain with special reference to excavations at Narhan," in *Old problems*, ed. Kenoyer, 243–7.

¹⁰⁰ Narayan, *Prehistoric archaeology*, 493.

edge of the Chhota Nagpur Plateau and the Ganga River, an area that was better drained and therefore more suitable for communication and food production. This stretch of the Ganga plain has yielded evidence of agriculture from the Neolithic-Chalcolithic period onward. From the Neolithic sites north of the Ganga such as Chirand, on the banks of the Ghaghara River about 7 miles east from Chhapra town, archaeologists have found evidence of the cultivation of various cereals such as wheat, barley, lentil and green gram. Evidence of paddy husks and charred grains of rice shows their familiarity with rice. The Chalcolithic people of the Sarayupar plain have also been found to have engaged in growing crops. From the archaeological excavations of these sites it has been established that the Neolithic-Chalcolithic people had combined agriculture with hunting and gathering.¹⁰¹ Later, during the first millennium BC, these riparian regions attracted Indo-Aryan migrants from the drier zones of the western and northern Ganga plain. The earlier mixed economy of the Indo-Aryans perhaps made a smooth transition to the large-scale agrarian economy as the new migrants exploited the fertile agricultural land with the help of the traction power of their cattle. Thus, an interaction of the people and resources of the arid and humid zones brought about fundamental changes in the agrarian economy of the Ganga plain during the first millennium BC. This probably explains why the urban centres, state system and social complexities developed there starting around 600 BC.

The first textual reference to migration into the areas toward the foothills to the north of the Ganga appears in the Brahmana text of *Satapatha Brahmana* (800 to 600 BC) in which reluctance was expressed to go beyond the Sadanira or the Gandak as Agni or the fire god “did not burn over” the river. Once Agni was made “to taste it [the river] through [Brahmanic] sacrifices” the Brahmins crossed the river and the region became fit for the settlement and cultivation.¹⁰² Called Videh or Mithila, this region was settled by Videgh Mathava of the *Satpatha Brahmana* and lies mostly in northern Bihar, extending up to the Himalayan foothills of Nepal. The bhangar floodplain along the banks of the Gandak would have offered sufficient arable land and pasture following which the Indo-Aryans moved up to the Himalayan Terai where the important ganasanghas or mahajanapadas of Vajji and Malla emerged around the sixth century BC. Except for a few swamps and khadar, the bhangar parts of the region are well-drained and highly fertile. Irrigation is ensured by the snow-fed Himalayan streams as well as from the precipitation during the monsoon. Except for the few months of the rainy season, the area is dry for most of the year. The topography of what today comprises north-western Darbhanga, Muzaffarpur, and Madhubani Districts is generally elevated with some low lying depressions. Until the nineteenth century, when innumerable embankments were made, the rivers in those parts overflowed during

¹⁰¹ Purushottam Singh, “Origin of agriculture in the middle Ganga plain,” in *History of agriculture in India, up to 1200 AD*, ed. Lallanji Gopal and V. C. Srivastava (New Delhi: PHISPC, Centre for Studies in Civilizations & Concept Publishing, 2008), 7–12.

¹⁰² *The Satapatha-Brahmana, According to the text of the Mādhyandina School*, Part 1, bks. 1 & 2, *Kānda 1, 4 Adhyāya, 1 Brāhmana, verses 14–17*, trans. Julius Eggeling, 2nd edn. (1882; repr. Delhi: Motilal Banarsidass, 1966), 105–6.

heavy floods but the waters quickly drained off into the low-lying areas to the southeast.¹⁰³ A settlement officer, Mr Wyatt, who conducted the survey of this region in 1847, noted that the luxuriant soil along the rivers and water-courses produced sufficient quantities of grass throughout the year for cattle and horses.¹⁰⁴ This observation gives a clear hint as to how the ancient migrants with their cattle gravitated along the grassland and reached northern Bihar and the Himalayan foothills.

The southern parts of the Ganga plain—the modern districts of Patna, Munger, and Bhagalpur—also have meadow-type soil on older alluvium along the riverbanks. The grassland along the southern banks of the Ganga has a general elevated position and is well-drained. The root systems of grasses protect the land from soil erosion during the torrential tropical rains, while the decomposition of plants supplies nutrients to the soil and increases fertility. Such ecological advantages of the region make it ideal for sedentary agriculture. Further, with an annual rainfall of around 42 inches, the areas around Patna form the heart of a transitional zone between the higher rainfall zone to the east and north and the drier area to the west.¹⁰⁵ Thus, the accessible dry areas with the possibilities of irrigation along the banks of the Ganga would have been very suitable for wet rice cultivation. A shift from wheat and barley to rice cultivation enhanced food production and laid the material basis for early state formation in the Ganga plain. Exploitation of the resources of dry and humid areas played a critical role in giving solid political foundations to the ancient mahajanapadas such as Magadha and Anga. In a way, the location of Magadha forms one of the last outposts of “the much wider, frequently broken, ecological continuum sometimes called Saharasia which includes all the drier zones of Eurasia.”¹⁰⁶ “Saharasia” extends from the Atlantic coast of North Africa and reaches all the way up to the eastern and southern parts of the Indian subcontinent.

Interestingly, the mahajanapada of Magadha was located along this stretch of the Ganga plain, to the south of the river, at the interface of comparatively arid and humid zones. From this strategic location and by exploiting local resources such as iron, war-elephants and wood, the mahajanapada of Magadha emerged victorious over other kingdoms of the Ganga plain. In the centuries preceding the emergence of Magadha as a large empire under the Mauryans, there were serious efforts to extend agriculture. While dry accessible areas within the easy reach of river irrigation were

¹⁰³ To form a general idea of the topography and landscape of this region, see the settlement reports by J. H. Kerr, *Final report on the survey and settlement operations in the Darbhanga District, 1896 to 1903* (Calcutta: Bengal Secretariat Press, 1904), 5–9, and for a succession of highly fertile and richly-cultivated upland in Muzaffarpur District, see C. J. Stevenson-Moore, *Final report.... the Muzaffarpur District*, 9–12.

¹⁰⁴ Stevenson-Moore, *Final report.... the Muzaffarpur District*, 9, quoting Mr Wyatt.

¹⁰⁵ H. Coupland, *Final report*, see p. 4 for 42 inches rainfall. Another source based on “Report, Indian Irrigation Commission,” gives an annual average figure of 43 inches rainfall for the districts south of the Ganga such as Patna, Gaya and Shahabad, see Malabika Chakrabarti, *The famine of 1896–1897 in Bengal: Availability or entitlement crisis?* (New Delhi: Orient Longman, 2004), 46.

¹⁰⁶ Gommans, *Mughal warfare*, 10; also see, J. J. L. Gommans, “The silent frontier of South Asia, c. A.D. 1100–1800,” *JWH* 9:1 (1998): 4.

easily brought under the plough, an increased use of iron tools would have assisted in clearing tropical *sal* (*Shorea robusta*) forest in the more humid and higher-rainfall zones.

In the South Asian context, iron technology is assumed to have appeared around 1200 or 1100 BC and in the Painted Gray Ware culture (PGW, dated between 1100 BC and 500 BC) the use of iron technology diffused further.¹⁰⁷ Historians and archaeologists debate whether the adoption of iron technology in itself would have been enough to bring about large-scale political and economic changes. However, there is general agreement that when iron technology was exploited under a particular political and economic system it played a crucial role in agricultural expansion and surplus production. In the course of the first millennium BC, the proliferation of iron technology appears to have been slow and protracted. While few iron implements have been reported from the PGW sites, Northern Black Polished Ware (NBPW, dated between 700 and 200 BC) sites such as Atranjikhara in the Ganga plain have yielded a number of agricultural implements such as sickles, spades, ploughshares, hoes, and so on. The increasing number and variety of agricultural tools clearly indicate that farming had become an important economic activity. In the later Vedic period, the *Yajur Veda* refers to a field ploughed by “teams of a dozen oxen.”¹⁰⁸ Animal traction power, an important asset long since available to the essentially pastoral-nomadic Indo-Aryans, would have partly met the large labour requirements of paddy cultivation.

As Vibha Tripathi suggests, a Jain text of around the third century BC mentions paddy transplantation techniques in Rajgriha, Magadha, Mithila and Anga where the older alluvium and prairie soils particularly suited rice cultivation. New techniques of intensive agriculture probably point to the growing need for food to support artisanal as well as other non-food producing classes. The rice-economy made available a higher calorie intake and increased the human fertility leading to demographic rise. According to Tripathi an “imminent rise in the population” led to the expansion of settlements away from the riverbanks to other sources of water such as lakes and marshes.¹⁰⁹ Such expansion of settlements around 400 BC (which climatologists believe to be a period of scant rainfall) would have put extra pressure on the available sources of water. In the drier climatic conditions, more humid areas would have been reclaimed for cultivation and settlement.

Often, it was local communities that channelled their efforts for land reclamation, agricultural extension and hydraulic works, and not necessarily the “hydraulic societies” based on centralized state control as suggested by Karl A.

¹⁰⁷ On the basis of new archaeological findings, Chakrabarti suggests the use of iron in parts of the Ganga plain from 1800/1700 BC. Dilip K. Chakrabarti, *The Oxford companion to Indian archaeology: The archaeological foundations of ancient India: Stone age to AD 13th century* (New Delhi: Oxford University Press, 2006), 292–301. Even if iron was used at such an early date, it did not bring about economic transition until the mid-first millennium BC.

¹⁰⁸ Schwartzberg, *A historical atlas of South Asia*, 163.

¹⁰⁹ Vibha Tripathi, “Agriculture in the Gangetic plains during the first millennium BC,” in *History of agriculture in India*, ed. Lallanji Gopal et al., 356–59.

Wittfogel.¹¹⁰ Since paddy crops needed more water, irrigation projects, dam-building and river embankments required labour mobilization at the community level. While the state could support the collective efforts of peasants in terms of tax remissions for building dams and undertaking similar irrigation works to enhance agricultural productivity—and, by extension, tax collection—such endeavours by peasants cannot be solely attributed to centralized political authority.

As noted already, the availability of strategic assets such as iron and elephants in the hilly and forested zones to the south would have facilitated the rise of Magadha and, in later centuries, the Mauryan and Gupta empires. From the comparatively drier location of Pataliputra rulers could project their power onto the Ganga plain and beyond. While the productive agrarian heartland of the plain furnished revenue, pottery and other craft productions and long-distance overland and overseas trade were other sources of income. The overland route led towards the north-western parts of the subcontinent while the Ganga provided an outlet to the overseas trade from the Tamralipti port on the Bay of Bengal.¹¹¹ The imperial capital of Pataliputra not only controlled these route systems, it also projected imperial power over the entire Ganga plain during the late first millennium BC and early first millennium AD.

The Indo-Aryan penetration in the humid zones of the delta was slow and came about much later. Archaeological evidence attests to the existence of settlements going back to prehistoric times. Pandu Rajar Dhibi (literally, the place of the Pandava kings of the *Mahabharata* epic) in the floodplain of the Ajay River in Burdwan District of West Bengal has yielded evidence of habitation from at least 1500 BC. Excavations at this site exhibited three cultural phases belonging to Chalcolithic culture, the Iron Age and the early historic period respectively.¹¹² Copper objects of the Chalcolithic Age have been found at locations such as Parihati village in Midnapur District. As has been suggested by Dilip Chakrabarti, the settlement sites chosen by the Neolithic-Chalcolithic settlers laid the basis for future habitation sites and they continued to be peopled by subsequent settlers.

Thus, the historic urban centres of the humid zone in the Ganga plain such as Kotasur, Mangalkot, Pokharna, and Tamluk all had a Chalcolithic and/or Iron Age

¹¹⁰ Karl A. Wittfogel, *Oriental despotism: A comparative study of total power* (New Haven: Yale University Press, 1957). In community-based irrigation works, known as the *gaom* system, one adult from every family benefiting from irrigation volunteered for the repairing works of dams and embankments in Patna District. Though the system was regulated by the zamindars, the participation of villagers was customary, see Coupland, *Final report*, 2; see also Gyan Prakash, *Bonded histories: Genealogies of labor servitude in colonial India* (Cambridge: Cambridge University Press, 1990), 21–25; Nirmal Sengupta, “The indigenous irrigation organization of south Bihar,” *Indian Economic and Social History Review (IESHR)* 17:2 (1980): 157–90.

¹¹¹ Steven G. Darian, “The economic role of the Ganges to the end of Gupta times,” *JESHO* 13:1 (Jan. 1970): 62–87; Chakrabarti, *Archaeological geography*, 125.

¹¹² V. K. Jain, *Prehistory and protohistory of India: An appraisal (Paleolithic–non-Harappan chalcolithic Cultures)* (New Delhi: D. K. Printworld, 2006), 169–70. See also Chakrabarti, *The Oxford Companion*, 261–3, and Reba Ray, *Ancient settlement patterns of eastern India: Pre-historic period* (Calcutta: Pearl Publishers, 1987), 280–84.

base,¹¹³ and later these sites attracted migrants from the drier parts of the Ganga plain from about the late first millennium BC. The Brahmanic textual sources of the later Vedic period showed contempt for the lower Ganga plain and such sentiments continued to be expressed in the Buddhist and Jain texts of the later period. Still, we find many ancient historical settlements in Bengal, including the Buddhist site of Paharpur on the Atrai River (in Bangladesh), Mahasthangarh or Pundravardhana on the Karatoya River, Mainamati, Chandraketugarh and so on.¹¹⁴ These settlements assumed an urban character and the Mauryan punch-marked coins circulated from around the third century BC. Archaeological finds and literary texts attest to the maritime seafaring activities as well as agrarian expansion in the region from the late first millennium BC and during the early centuries AD.¹¹⁵ Indo-Aryan penetration of the delta was possibly accentuated by the need for more irrigated agricultural land in the dry period around 400 BC as well as by the possibilities of overseas trade.

We get more evidence of the agrarian expansion and sedentary settlement in the delta from the late first millennium AD. On the basis of an inscription from Bangladesh, Ranabir Chakravarti suggests of “the largest known brahmanical colonization program in north India planned and designed by a political authority,” as a result of which an extensive settlement emerged in the tenth-century Sylhet area. Such settlements resulted from giving *brahmadey* (revenue-free grants) to Brahmins from outside the region to bring the swampy and forested land under the plough. In the same humid zone of the delta, according to Chakravarti the Palas (especially Ram Pala 1072–1127) resettled the war-ravaged agrarian economy of Varendri or Varendra (comprising Rajshahi, Bogra and Dinajpur Districts of Bangladesh), constructed a huge lake and imposed mild taxes to ensure continued agriculture. It has been suggested that northern Bengal had a complex agriculture-based economy from the third century BC until the early seventh century.¹¹⁶ In the subsequent drier centuries, agriculture and settlement appears to have gravitated east to a zone of more rainfall and closer to the sea.

Unfortunately, the literature on the historical dynamics of the late first millennium Ganga plain is rather incoherent and many issues such as agricultural expansion and resource mobilization by the new kingdoms are only poorly understood. Existing scholarship suggests that during this period a host of dynasties such as the Palas and Senas in the humid areas of Bengal and the Gurjar-Pratiharas of the dry zone

¹¹³ Chakrabarti, *The Oxford companion*, 305.

¹¹⁴ Nitish Sengupta, *Land of two rivers: A history of Bengal from the Mahabharata to Mujib* (New Delhi: Penguin, 2011), 16–24.

¹¹⁵ Suchandra Ghosh, “Business in early Bengal (pre-Gupta phase): A numismatic approach,” in *Business history of India*, ed. Chittabrata Palit and Pranjal Kumar Bhattacharyya (Delhi: Kalpaz Publications, 2006), 77–86, for the archaeological finds of the Kushana coins that might have reached Bengal by way of trade. The existence of Kharosthi-speaking merchants and agriculturists from the north-western parts of the Indian subcontinent has also been noted by Ghosh. Reference to *Kodihalka*, that is a person having 10 million ploughmen, probably indicates the agrarian expansion in ancient Bengal.

¹¹⁶ Ranabir Chakravarti, “Natural resources and human settlements: perceiving the environment in India,” in *The world in the year 1000*, ed. James Heitzman and Wolfgang Schenkluhn (Lanham: University Press of America, 2004), 54–55, 61.

emerged in the Ganga plain. Others such as the Chandelas and Kalachuris in the drier parts of Malwa and the Rashtrakutas in the semi-arid zone of the Deccan were all vying for a larger share of territory. Around the turn of the millennium, the fragmentation of political power continued across South Asia as Hindu Shahis, Chandelas, Kalachuris, and Paramaras contended for hegemony. The proliferation of numerous dynasties from the later centuries of the first millennium AD may be understood in terms of agrarian expansion, colonization of far-flung areas and efficient hydraulic management to make up for the deficiencies in water supply that resulted from a drier climate. While the resource base of these dynasties was adequate to run their smaller kingdoms, in itself it was not sufficient for any of them to control the entire Ganga plain and South Asia. Another problem lay in their lack of access to an uninterrupted supply of warhorses and new techniques of warfare. As a result, none of these feuding kingdoms could establish and hold their political hegemony over a large part of the Indian subcontinent. They were easily swept away by the cavalry of the Turko-Afghan warriors by the thirteenth century.

As we discussed above, the transitional zone of the Ganga plain centred in the geographical area of modern Bihar proved to be the locus of early state formation where large empires of Mauryas and Guptas had flourished. In the latter half of the first millennium AD the transitional zone appears to have ceased to be the centre of any large scale political and economic activities. While the dry climatic conditions favoured the delta as an advancing frontier for agrarian expansion and colonization, new modes of warfare privileged the arid marches from where political power could be projected toward the agrarian society of the humid zone. Agrarian expansion and land reclamation in the arid zone received momentum from about the eleventh and twelfth centuries, probably aided by more propitious rain and a moist climate. Contemporary inscriptions as well as Jain sources from Rajasthan and Gujarat attest to the hydraulic projects aimed at storing water and using them for agriculture.¹¹⁷

Apart from agriculture, the typical economic activities of the dry zone included breeding such animals as horses, cattle, sheep, and the newly-introduced camels and dromedaries, which further augmented resources.¹¹⁸ As the economic lot of the people in the drier zones improved somewhat, they ventured out with their mobile resources (war-animals, arms and cash) and were able to undermine the existing political order in the humid areas of sedentary agriculture. The movements and conquests of Turks, Afghans and Rajputs in the first half of the second millennium AD may be seen in the light of their capacity to impose political domination over more prosperous agrarian societies. Long-distance connections, new technologies, animals and cash brought in by mobile forces injected vigour into the agrarian economy of the humid zone. For

¹¹⁷ Chakravarti, "Natural resources and human settlements," 55–57.

¹¹⁸ In the context of Central and West Asia, this point is nicely driven home by Bulliet. A significant economic activity followed animal herding from the arid zone to the north-western Indian subcontinent. According to Bulliet, the one-humped camel came to northern India along with the Ghaznavid campaigns that would have required thousands of baggage animals. Bulliet, *Cotton, climate, and camels*, 113.

example, the Afghan horse traders, banjara transporters, and other mobile groups linked the fairs and pilgrimage centres of widely dispersed areas spanning the arid and semi-arid zones of South Asia.¹¹⁹ Many urban centres developed and towns grew up in the wake of the establishment of the Delhi Sultanate. The Ganga plain once again experienced agricultural and economic growth and dynamism after the so-called second urbanization during the second half of the first millennium BC. Areas at the interstices between the drier and humid zones such as Jaunpur, Sasaram, Maner and Hajipur became new centres of state formation and economic activities in the first half of the second millennium AD.

Conclusion

In the entire Ganga plain, the productive capacity and fertility of the well-watered semi-arid zone is beyond doubt. Without external stimulus in the form of cattle, technology and liquid money, productive capacity in itself does not sufficiently explain state-formation and urban developments. This discussion of the large-scale economic and political transformations in the Ganga plain between the second half of the first millennium BC and the first half of the second millennium AD has revealed numerous changes in the economy and polity heralded by the meeting of people and resources from the arid and humid zones. Early state formation in the transitional zone of the Ganga plain largely depended on the exploitation of resources in both the environmental zones. In the early second millennium AD, Turks and Afghans from the Arid Zone represented the so-called horse-warrior revolution and they succeeded in establishing their political dominion over the productive and agriculturally rich humid parts of the Ganga plain. Although the process was disruptive politically, the access to new resources such as horses and cattle, links to long-distance markets, new skills and irrigation technologies had far-reaching economic consequences for the humid areas.

Another point to stress is the problems inherent in interpreting the history of this region in terms of the modern geographical division of the Ganga plain. A simple twofold division based on rainfall variability and aridity proves to be a more useful model for historical explanation rather than the threefold conventional geographic division. To test this model, I have described the historical developments and state formation in the transitional zone of the Ganga plain in Bihar. We noted that the regions further south of the river were comparatively dry, hilly and agriculturally less productive while the fertile lands along the southern banks of the Ganga and the plain to the north of the river were rich in agricultural resources. Therefore in this strategic zone of Bihar, the state-formation processes unfolded in the early historical, medieval and early modern periods successively. It was from this transitional environmental zone that the Mauryas and Guptas had held sway over the entire Ganga plain in the ancient period. The area remained strategically significant during the so-called medieval period. In the fifteenth century, the Sharqis of Jaunpur and in the sixteenth century Sher

¹¹⁹ Gommans, "Silent frontier," 9–10.

Shah of Sasaram displayed great potential for political consolidation of the plain from the relatively dry zone. As I hope to demonstrate in this study, the transitional environmental zone remained crucial to the process of state-formation when agrarian expansion, resource generation and commercialization of the economy peaked between the sixteenth and eighteenth centuries, and when the Mughals were mostly the dominant political power.

Proceeding to the “Age of Commerce”, in the following chapter I shall discuss the natural infrastructure that facilitated the transportation of goods and movement of people along the riverine and overland arteries of the Ganga plain. The critical significance of these transportation networks lay in the fact that they not only linked the different ecological zones to the north and south of the Ganga but they also connected the humid Ganga delta and maritime spheres to the east with the drier parts to the west of the Ganga plain. Thus it becomes clear that the Ganga plain lies at the environmental crossroads that proved to be crucial for the growth of agriculture, trade and the economy generally and thus led to the generation of the stunning wealth on which the Indian empires depended and endured. Cumulatively, these factors propelled the processes of state formation in the plain. But what did these arteries of communication look like and, why were they so critical for the state and society? We explore these questions in Chapter 3.

Chapter 3

Ganga-flow: The Riverine and Overland Routes

There is no river in the world, unless those of China be exceptions, on which there is so large a navigation as on the Ganges and its tributary streams.¹

And truly the Grand Trunk Road is a wonderful spectacle. It runs straight, bearing without crowding India's traffic for fifteen hundred miles—such a river of life as nowhere else exists in the world.²

Introduction

The previous chapter discussed migration in the Ganga plain and raised questions about the tripartite geographic division of the plain and proposed a division based on aridity and rainfall. The interface between the drier and humid zones continues to inform our analysis. Though this chapter takes the entire Ganga plain into account, the focus remains on the transitional zone between the dry and the humid ecological zones of the Ganga plain in Bihar. To prepare the background for analysing the economic dynamic and political processes of the early modern period, the present chapter discusses the main riverine and overland routes on which pilgrims proceeded, cash, credit and commodities circulated, and armies mustered. The Ganga connected the local marts and regional towns of Bihar with Kasimbazar, Murshidabad, Hugli and Calcutta with manifold implications for the economy and polity. Such connections also facilitated interaction between sedentary agricultural society and mobile merchants and brought about important changes in society. The transformation of agricultural surpluses into liquid capital played an important role in early modern state formation.³ But what were the historical processes that made this interaction between agrarian society and mobile forces possible on the Ganga plain?

¹ BL, APAC, IOR, P/12/37, Fort William 15th August 1828, Note by the Secretary on the introduction of steam navigation on the Rivers in Bengal by H. T. Prinsep, Fort William 15th August 1828, not foliated (hereafter n.f.); Appendix to the report from the Select Committee of the House of Commons on the affairs of the East-India Company, 16 August 1832, vol. II: Finance and Accounts – Trade, Part 2, Commercial (London: 1833), 916.

² Rudyard Kipling, *Kim* (1901; repr. New Delhi: Rupa, 1999), 67.

³ The chieftains' efforts to accumulate large resources by centralizing their fiscal and military administration were very much on the lines of the military fiscal state in early modern Europe. Some of these chiefs along the Ganga maintained an impressive number of cavalry and armed riverboats. For the military fiscal state in Europe, see Charles Tilly, *Coercion, capital, and European states, AD 990–1992* (Cambridge: Blackwell, 1992), especially Chapter 4.

Agricultural expansion and long distance trade were mutually reinforcing in commercializing the economy. As we noted in Chapter 2, the Ganga delta underwent significant land reclamation and agricultural expansion from the late first millennium onwards. Geographical factors favoured certain areas within the delta more than others. For example, the “paradelta” region of Varendra, near the Ganga in north Bengal, has an elevation between about 90 and 300 feet and is relatively dry (receiving about 55 inches rainfall) in comparison to the eastern delta and the northern Terai, both of which receive rainfall between 60 to 95 inches.⁴ It was in this region that the famous medieval cities such as Pandua, Nudiya, and Gaur (Lakhnauti) flourished during the first half of the second millennium AD. This upland, dry location would have been the point from where the agrarian frontier was constantly pushed eastward, toward the wet and marshy zones of the eastern delta. Meanwhile agricultural expansion in the delta received a boost from the long distance trade. Mainly Persian and Arab maritime traders were procuring textiles from eastern Bengal during the tenth century, but after the Turko-Afghan groups of the arid zone conquered the delta in the thirteenth, the region became more closely incorporated into Indian Ocean and overland trade networks.⁵

In Chapter 2 we also noted instances of agricultural expansion in the delta during the eleventh- and early twelfth-century reign of Ram Pala. The advent of Muslim conquerors brought a greater push to extend the agrarian frontier eastward, a process that continued for the next five centuries. Since the sixteenth century, when the direct maritime route linking Europe with Asia became operational, the process of agrarian and economic growth accelerated, and the demand for local commodities grew and trade expanded in the seventeenth and eighteenth centuries. While the agrarian frontier continued to move eastwards, the deeper hinterlands came within the commercial radius of the delta. Therefore, the transitional zone of the Ganga plain in Bihar got more closely linked to the maritime networks operating from the Bay of Bengal.

Geographically Bihar is considered landlocked, but we should ask whether it was so in the past. If we define a landlocked region to be far removed from the sea-coast then Bihar, several hundred miles from the Bay of Bengal, is a landlocked region. But this great distance was shortened by the Ganga, which brought the seacoast and the hinterlands of Bihar much closer than it would appear otherwise. Economically speaking, during the early modern period, Bihar was very much a part of the maritime economy of the Bay of Bengal. In the seventeenth and eighteenth centuries, the thriving maritime trade of the Asian merchants and the European Companies had direct access to the economy of Bihar. The riverine and overland routes, and the urban centres along

⁴ O. H. K. Spate and A. T. A. Learmonth, *India and Pakistan: A general and regional geography* (1954; repr. London: Methuen, 1967), 575; for a table showing rainfall, see also Malabika Chakrabarti, *The famine of 1896–1897 in Bengal: Availability or entitlement crisis?* (New Delhi: Orient Longman, 2004), 46.

⁵ Richard M. Eaton, *The rise of Islam and the Bengal frontier, 1204–1760* (1993; repr. New Delhi: Oxford University Press, 2006), 11–12. Unfortunately the scholarship on pre-Mughal Bengal’s maritime contacts is under explored. We do not know much about the scale of trade during that period.

them, facilitated trade and related commercial operations. The region was rich in agricultural, craft and mineral resources that found markets worldwide thanks to the long-distance trade routes that passed through Bihar and linked the entire Ganga plain. Since we lack systematic data on the overland trade to the northwestern parts of India and to Central and West Asia, this study turns its perspective on the region's linkages with the maritime commerce through the Ganga River.

In the historiography of early modern South Asia, little attention has been directed to the riverine and overland routes that passed through the transitional environmental zone of the Ganga plain and their role in the political and economic development of the region.⁶ As we already noted in Chapter 2, Bihar constitutes a transitional zone where the dry parts in the south overhang the large fertile tracts in the north.⁷ While the Ganga formed a loose boundary between north and south, people from both regions exploited the river as a transportation corridor. Another linkage between these disparate ecological zones was the long established pilgrimage to Gaya, performed by the Hindus in order to propitiate the departed souls of their ancestors, and to Deoghar Baidyanath, the site of an important Hindu temple.⁸ Communication with the pilgrim centres and to major towns along the Ganga was maintained by the riverine and overland routes. By describing the route systems, I shall underline the implications of interaction between the two ecological zones and argues that such interactions were of critical importance for state formation in the history of the Ganga plain.

The factors associated with the “horse-warrior revolution” were probably responsible for the westward shift of the political frontier of the Ganga plain towards

⁶ Havaladar Tripathi compiled the data on cultural and historical aspects of the rivers and rivulets in Bihar. Though the information is valuable, it does not help answer the questions on the political economy of the rivers. See Havaladar Tripathi “Sahridaya”, *Bihar ki nadiyan: aitihasik evam sanskritik sarvekshan* (Patna: Bihar Hindi Granth Akadami, 2003), in Hindi; A. K. M. Farooque, *Road and communications in Mughal India* (Delhi: Idarah-i Adabiyat-i Delli, 1977) hardly discusses rivers and focuses mostly on the overland routes without shedding much light on their strategic or economic importance. See also Jean Deloche, *Transport and communications in India prior to steam locomotion*, vol. 1, *Land transport*, and vol. 2, *Water transport*, trans. James Walker (Delhi: Oxford University Press, 1993 and 1994). Both volumes present rich data on land and river transport but the economic and political implications of the route system are beyond their scope. Recent work by Tilottama Mukherjee addresses some of the issues related to the economy of river transport in Bengal but her focus remains primarily on the delta in the latter half of the eighteenth century, see “Of rivers and roads: Transport networks and economy in eighteenth-century Bengal,” in *Coastal histories: Society and ecology in pre-modern India*, ed. Yogesh Sharma (Delhi: Primus Books, 2010).

⁷ In the eighteenth century, soil in Bengal and Bihar sustained four times more people than the same quantity of land could do in England. See William Tennant, *Indian recreations: Consisting chiefly of strictures on the domestic and rural economy of the Mahomedans & Hindoos*, 2 vols. (Edinburg, 1803), 2:6–7.

⁸ While the pilgrimages of local importance do exist in northern Bihar, there is none that can rival the importance of Gaya or Deoghar Baidyanath or the Ganga. Thus, the sacred geography of Bihar seems to have been organized in such a way as to ensure greater interaction between the humid and dry zones. For a description of the local pilgrimage in north Bihar, see Hetukar Jha, ed., *Tirhut in [the] early twentieth century: Mithila Darpan of Ras Bihari Lal Das* (1915; repr. Darbhanga: Maharajadhiraj Kameshwar Singh Kalyani Foundation, 2005), in Hindi.

Kannauj and Delhi starting in the late first millennium AD.⁹ Between this time and the early modern period, the political frontiers were centred on the western parts of the Ganga plain, where there was greater access to the mobile resources of the “arid zone” such as horses, seasoned militia, and liquid capital. On the other hand, the humid zone of the eastern Ganga plain underwent significant agrarian and economic expansion during the same period. To tap the agrarian wealth of the humid zone, rulers in Delhi and Agra maintained a string of garrison towns along the important trade routes of the Ganga plain, as we will see in the present chapter. It was only with an effective exercise of power and military control that they were able to share in the resources of Bihar and Bengal. During the age of maritime commerce (roughly from the sixteenth to eighteenth centuries), in order to meet the growing international demands for the commodities, an unprecedented agrarian expansion occurred in the eastern Ganga plain. This economic transformation of the Ganga plain had significant political implications. As the region’s economic fate got more closely linked up with the maritime commercial economy, by the eighteenth century the eastern Ganga plain slipped away from the political economy of the Mughal heartland in northern India or Hindustan.

This chapter is organized in three sections. Section one discusses three key issues, namely, the morphology of the Ganga and its important tributary rivers, their exploitation for trade and navigation, and the rivers in the political economy of the Ganga plain. Although I take the entire Ganga plain into account, gradually focus shifts once again to the transitional zone of the plain in the seventeenth and eighteenth centuries, a period for which Dutch sources enable us to view the rhythm of traffic along the Ganga in detail. Early-nineteenth century British colonial documents also have interesting data on riverine networks and they help us extrapolate and corroborate pre-nineteenth century river navigation. Section two begins with a description of the overland routes in north India and the Ganga plain before focusing on the routes that pass through the transitional zone of Bihar toward the delta. Some of these routes linked the agricultural centres of the humid zone with regional towns located on its margins. The third section asks why the Mughal towns in the eastern Ganga plain were located in the interstices of the agricultural heartland to the north of the Ganga and the dry, hilly and forested areas to the south of the river.

⁹ On horse-warrior revolution, see Michael Chamberlain, *Knowledge and social practice in medieval Damascus 1190–1350* (Cambridge: Cambridge University Press, 2002), 28–36; see also, R. J. Barendse, “The Feudal-Mutation: Military and economic transformations of the ethnosphere in the tenth to thirteenth century,” *JWH* 14:4 (2003): 503–29, see esp. p. 512–14. The inability of the Bengal rulers such as the Palas and Senas (which flourished between the eighth and thirteenth centuries) to gain uninterrupted access to warhorses decisively changed the political geography of the Ganga plain. Chakravarti suggests an importation of Kohi horses from the mountainous northeast regions since the Sena-period (1096–1225 AD) and their re-export to China, Southeast Asia as well as southern India. In spite of the references to their sturdiness, Kohi horses failed to alter the geo-strategic significance of the Ganga plain where the polities having access to and supply of warhorses from Central and West Asia dominated the region. On Kohi horses, see Ranabir Chakravarti, “Early medieval Bengal and the trade in horses: A note,” *JESHO* 42:2 (1999): 196, 199–203.

Section I: The Ganga River Systems, Navigation Networks and the Rivers in the Political Economy of the Region

Traditionally the rivers in the Ganga plain had performed two important economic functions. First, they contributed to agricultural productivity by bringing fertile silt and by providing irrigation. Second, they offered navigation to transport the surplus production to the markets to be sold and exchanged for other commodities or cash. Until the railways overtook transportation and the boring-canal and motor-pumps partially displaced the rivers' role for irrigation and food production, the pre-modern states were critically dependent on the rivers. This section by focusing on the Ganga river-systems and by reconstructing the transportation networks highlights the role of rivers in the region's political economy.

The Geomorphology of the Rivers

The Ganga River rises in the high Himalayas at Gomukh in the Gangotri glacier, a mountain of around sixty square kilometres surrounded by snowy peaks of twenty to twenty four thousand feet. From this glacier the Bhagirathi and Alakhnanda Rivers flow southwards and meet at Devprayag, where the combined stream becomes known by the name Ganga.¹⁰ After winding generally southwest through the Himalayas for about 250 kilometres, the Ganga emerges from the mountains at Rishikesh. After descending onto the plain, from Haridwar the river follows the general slope of the plain in a south-south-easterly direction. James Rennell, the eighteenth century British Surveyor General, remarks that after entering the plain the Ganga "flows with a smooth navigable stream" to the sea.¹¹ Below Haridwar, the Ganga is joined by the Ramganga near Kannauj.¹² After this confluence the river passes through Farrukhabad and Kanpur before reaching Allahabad where it meets the Yamuna. The confluence of the Ganga and Yamuna is known as *Prayag* (literally, the place of sacrifice). Sacred to Hindus,

¹⁰ James Bell, *A system of geography, popular and scientific or a physical, political and statistical account of the world and its various divisions*, vol. 4 (Glasgow, 1832), 469; H. T. Colebrooke, Esq., "On the sources of the Ganges, in the Himádrí or Emodus," *Asiatic Researches Comprising History and Antiquities, the Arts, Sciences, and Literature of Asia*, vol. 11 (1818; repr. Delhi: Cosmo Publications, 1979), 443; Sharad Kumar Jain, et al., *Hydrology and water resources of India* (Dordrecht: Springer, 2007), 336; see also Bimla Churn Law, *Historical geography of ancient India* (Delhi: Ess Ess Publications, 1976), 31.

¹¹ James Rennell, *An account of the Ganges and Burrampooter rivers* (London, 1781), 5. Rennell notes the bounty provided by the Ganga River, the facility of communication along the river and also its military and strategic importance.

¹² Nanigopal Roy and Rajiv Sinha, "Understanding confluence dynamics in the alluvial Ganga-Ramganga valley, India: An integrated approach using geomorphology and hydrology," *Science Direct/Glomorphology* 92 (2007): 182–97. See also, *Military report on the Ganges river system* (Simla: Government Monotype Press, 1913), 3, 32.

Prayag is the site of the Kumbh pilgrimage, a great bathing festival attended by millions of pilgrims, which takes place every twelve years.¹³

After winding for about two hundred kilometres in the lower Himalayas, through the Shiwalik Range and Garhwal, the Yamuna enters the Indo-Gangetic plain and runs southward parallel to the Ganga, the land between the two rivers being a fertile doab. In the course of its 1,376-kilometre run the Yamuna passes through important historical cities such as Delhi, Mathura and Agra. The communication networks through the river and overland routes and the fertility of the well-watered areas in the doab sustained these cities. The Yamuna is fed by a number of tributaries as a result of which its water volume far exceeds that of the Ganga in Allahabad.¹⁴ At Prayag the Yamuna River joins the Ganga from the west and causes the latter to swell. During the rains the Ganga broadens to two to three miles, which eases the passage of large boats heading downstream from Allahabad towards Patna and Calcutta.¹⁵

After Allahabad the Ganga is joined by the Gomati and Ghaghara Rivers from the north. The Ghaghara is an important river, and apart from the Yamuna the longest of the Ganga's tributary streams.¹⁶ The total length of the Ghaghara is 1080 kilometres and it merges with the Ganga at Doriaganj near Chhapra in Bihar. According to Jean Deloche, the Ghaghara was navigable throughout the year and barges of 44 tonnes could operate below Bahramghat, near where the river leaves the Nepalese forests.¹⁷ These tributaries to the Ganga facilitated communication with comparative ease in the regions of eastern Uttar Pradesh and northwestern Bihar. These Himalayan rivers also created many fertile flood plains on which the earliest states formed, as we noted in Chapter 2. In the early modern period too, the region produced many agricultural commodities and was linked to downstream regional markets through the Ganga.

As the Ganga flows eastward through Bihar many more rivers join it from the north and south. Seen on a map, these river-confluences present a view of the Ganga as

¹³ H. R. Neville, *Allahabad: A gazetteer being volume XXIII of the district gazetteers of the United Provinces of Agra and Oudh* (Allahabad: Government Press, 1928), 151–52. See also George Smith, *The geography of British India: Political and physical* (London, 1882), 24–25.

¹⁴ Jain, et al., *Hydrology and water resources of India*, 346. See also Walter Hamilton, *A geographical, statistical, and historical description of Hindostan and the adjacent countries*, vol. 1 (1820; repr. Delhi: Oriental Publishers, 1971), 290–95. Hamilton notes that after Delhi the Yamuna flows parallel to the Ganga at a distance of 80 to 120 kilometres until they gradually merge at Allahabad where the stream of the Ganga is a little inferior to the Yamuna. The total length of the Yamuna including winding is estimated at about 1255 kilometres.

¹⁵ Neville, *Allahabad: A gazetteer*, 8; Irfan Habib, *An atlas of the Mughal empire: Political and economic maps with detailed notes, bibliography and index* (Delhi: Oxford University Press, 1982), maps 8B and 10B, also pp. 32, 41.

¹⁶ Hamilton, *A geographical, statistical, and historical description*, vol.1, 347. Hamilton notes that James Rennell thought of the Ghaghara to be the Agoramis of Arrian. For a succession of boats lined up in the Gomati River, see George Forster, *A journey from Bengal to England, through the northern part of India, Kashmire, Afghanistan, and Persia, and into Russia, by the Caspian-Sea*, vol. 1 (London, 1798), 82.

¹⁷ Deloche, *Transport and communications*, 2:22. For the problems of navigation and shoals in the Ghaghara, see BL, APAC, IOR, V/23/120, pt. 31 Art. 1, *Report on the navigation of the river Gogra by R. Taylor, 1858* (Calcutta, 1858), 1–4, in microfilm.

the main trunk of a great funnel. Since the general elevation of the northern plain of Bihar is between less than a hundred and a little more than three hundred feet and has a gradual southeast slope, the rivers also follow a southeasterly course and join the Ganga.¹⁸ One of the major tributaries such as the Gandak River rises near the Nepal-Tibet border and after winding 630 kilometres meets the Ganga at Hajipur, north of Patna.¹⁹ After the Shiwaliks, at Tribeni-ghat the river was plied by small boats and wooden rafts. However, during the rains vessels of 37 tonnes could ply upriver as far as Lalganj.²⁰ The Bur Gandak or the Little Gandak, another tributary to the Ganga in Bihar, originates in the Someshwar Hills in Champaran district of northern Bihar. Its course follows the south and southeasterly direction through Muzaffarpur district and drains into the Ganga near Munger town after traversing about 320 kilometres. The tonnage of the boats varied in different stretches of the river. For example during the monsoon a boat of 74 tonnes could ply as far as Russera; 37 tonnes up to Muzaffarpur; 19 tonnes to Bariyapur; and, 4 tonnes further up the river. During the winters the tonnage was reduced to 4 to 8 tonnes to be able to reach Muzaffarpur.²¹ Further east, the Kosi River originates in the Himalayas and flows through Nepal to India. The main tributaries of the Kosi are the Baghmata and Kamla, which also originate in Nepal. The Baghmata was navigable throughout its course up to southern Nepal. By contrast, the rivers to the south of the Ganga—including the Karamnasa, Son, Punpun, and Kiul—were inadequate for navigation. For irrigation too, these rivers offered limited resource.

After flowing through the transitional zone of Bihar the Ganga gets divided into two main branches in the delta. In the western delta, the Cossimbuzar and Jellinghy (Jalangi) Rivers unite and become the Bhagirathi-Hugli River, which is a western branch of the Ganga. As James Rennell wrote in the late-eighteenth century, the Bhagirathi-Hugli was the only navigable branch of the Ganga and the Cossimbuzar and Jellinghy Rivers offered rather limited navigation except during the rains. According to Rennell the only subordinate channel of the Ganga, called the Chundnah, was navigable throughout the year.²² Further down the stream the eastern branch of the Ganga known as Padma receives the Brahmaputra and Meghna rivers.²³ These rivers and their branches in the delta contributed to the economy and commerce by facilitating transportation of goods and the movement of people.²⁴

¹⁸ Joseph E. Schwartzberg, ed., *A historical atlas of South Asia* (New York: Oxford University Press, 1992), 3.

¹⁹ Jain, et al., *Hydrology and water resources of India*, 358.

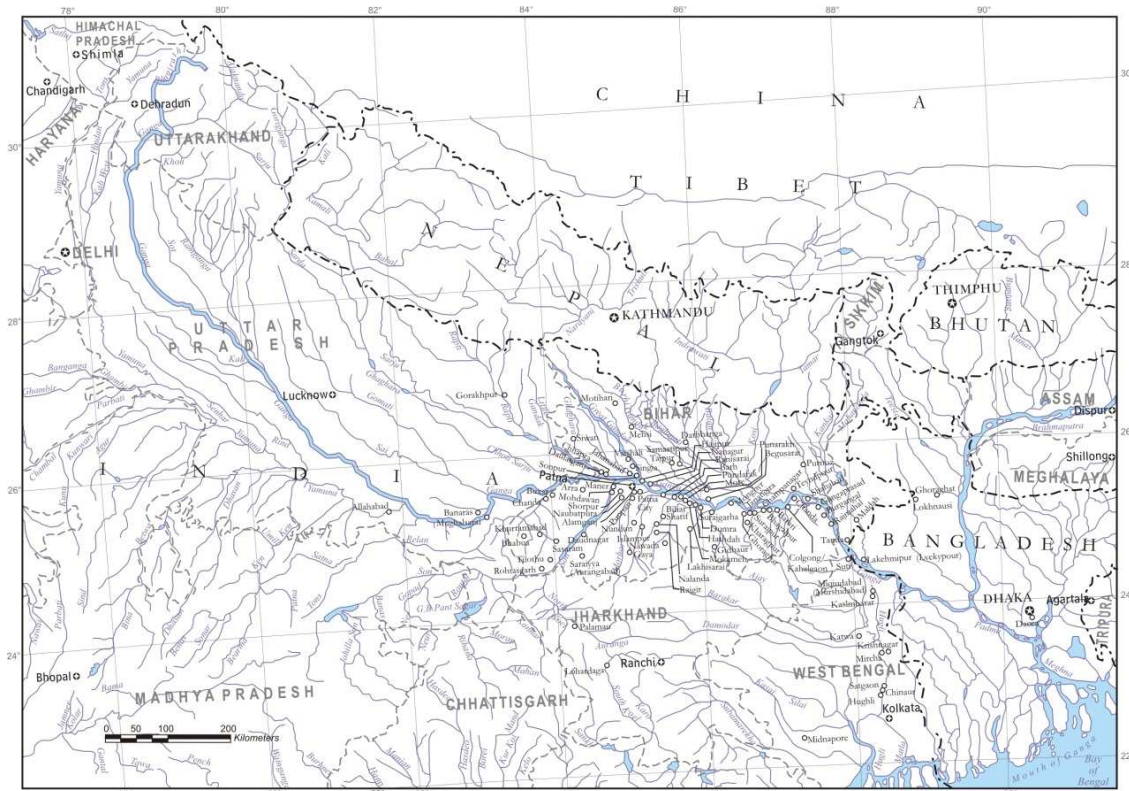
²⁰ Deloche, *Transport and communications*, 2:22.

²¹ Deloche, *Transport and communications*, 2:22–23.

²² Rennell, *An account of the Ganges and Burrampooter rivers*, 7–8.

²³ Spate and Learmonth, *India and Pakistan*, 572–74.

²⁴ For the navigation in the Bengal delta, see Deloche, *Transport and communications*, 2:117–26.



Map 2. Navigation in the Ganga.

Navigation

Travel accounts and other conventional sources give but a dim picture of navigation in the Ganga and Yamuna in the semi-arid zone of the Ganga plain. As is evident from the English sources discussed below, river navigation was not an invention of British colonists and probably it had a long history judging from the instances of river navigation and merchant traffic given in early Buddhist literature.²⁵ However, the Buddhist and other indigenous sources throw little light on the organization of voyages in the Ganga. Similarly, early modern European travellers may have overlooked such riverine traffic because it was no more exotic than what they knew at home, and hence we have relatively few references to that effect.

During the age of maritime commerce, the first reference to commercial navigation on the Yamuna comes from the account of an English merchant, Ralph Fitch, who started his journey for Bengal from Agra in the company of a large merchant fleet in 1585.²⁶ In 1611, John Jourdain wrote that every year barges with a

²⁵ Steven G. Darian, "The economic history of the Ganges to the end of Gupta times," *JESHO* 13:1 (1970): 72, 74. Numerous Buddhist *Jatakas* talk of the Ganga River route for trade and travel. As Darian shows, the convergence of overland routes on the main riverine ports of the Ganga probably signifies the importance of river for trade.

²⁶ William Foster, ed., *Early travels in India 1583–1619* (1921; repr. New York: AMS Press, 1975), 18. Fitch reported that he travelled "in the companie [sic] of one hundred and fourescore boates [sic] laden with salt, opium, hinge [asafetida: Hindustani *hing*], lead, carpets, and divers other commodities, down

capacity of 400 to 500 tonnes carried a total of 10,000 tonnes of salt (mined from the Salt Range of the Punjab) from Agra to Bengal.²⁷ A few decades later, Peter Mundy observed river navigation, though he himself travelled on the overland route. From the Dutch *Generale Missiven* (general letters), we learn that in December 1655, Hindustani merchants procured enough silk of Kasimbazar to load eight to ten boats for the passage from Patna to Agra.²⁸ Clearly, the river route connecting Bengal with Agra via Patna was very much in use in the seventeenth century and earlier. In fact, the river was used by large barges and vessels and as Irfan Habib notes in his *An Atlas of the Mughal Empire*, while overland routes were preferred (although he does not give any reason for such a preference), the Yamuna was navigable for boats of 100 to 500 tonnes between Agra and Allahabad, and from Allahabad to Patna on the Ganga.²⁹

In 1832 the Yamuna River constituted the boundary between the British held territory and Awadh. A colonial administrative paper written in 1832 proposed facilitating navigation on the Yamuna and Ganga by removing the excessive number of customs posts and promoting revenue collection.³⁰ From this source we learn both that the Yamuna was navigable as far as Padshamahar, where it leaves the hills, and that the British had set up dozens of customs posts on the riverbanks to generate revenue and to control and regulate the commodity flows. For example, there were no less than seventy-three river *chowkies* (customs posts) within the Agra division. In the Delhi territory, from Karnal to a place midway between Delhi and Agra, there were thirty-five customs posts where boats were liable to be checked by the authorities. As frequent inspections of boats led to inconveniences, traffic diminished and customs posts had to be closed down. The British paper noted that huge quantities of salt, cotton, *ghee* (clarified butter), asafoetida and so on were imported to “Jugadree, Shamlee, Bhowanee, Delhi Rewarree and other commercial towns of that quarter” but remarked with regret that these items were not carried on the Yamuna. Instead, the merchants used the slower and more expensive land transportation to Mathura, located

the river Jemena”; see also Donald F. Lach, *Asia in the making of Europe*, vol. 1, bk. 1, *The century of discovery* (Chicago: University of Chicago Press, 1965), 480.

²⁷ John Jourdain, *The journal of John Jourdain, 1608–1617, describing his experiences in Arabia, India, and the Malay archipelago*, ed. William Foster (Cambridge: Hakluyt Society, 1905), 162; and Mundy talks of many “great lighters” or barges of three to four hundred tonnes which connected Agra and Bengal and transported salt, see Peter Mundy, *The travels of Peter Mundy, in Europe and Asia 1608–1667*, vol. 2, *Travels in Asia, 1628–1634*, ed. R. C. Temple (London: Hakluyt Society, 1914), 87–88. Akbar used the Yamuna for travelling between Delhi and Agra, see Abu’l-Fazl Allami, *The Akbarnama of Abu-l Fazl*, trans. H. Beveridge, in 2 vols. (1910; repr. Delhi: Rare Books, 1972), 2:117, 187; for the prevalence of navigation in the Ganga and Yamuna see also Deloche, *Transport and communications*, 2:19–21.

²⁸ W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 3, 1655–1674 (’s-Gravenhage: Martinus Nijhoff, 1968), 33, Maetsuyker, Hartsinck, enz. VIII, 24.12.1655.

²⁹ Habib, *An atlas of the Mughal empire*, maps 8B and 10B, also pp. 32, 41.

³⁰ BL, APAC, IOR, Board’s Collections, F/4/1506/59052, Fort William the 20th April 1833, from Secretary to Governor General and to Secretary General Department, dated 9th September 1832, No. 2, p. 13.

on the Yamuna or to Farrukhabad on the Ganga before putting their goods in boats.³¹ In the early nineteenth century, Walter Hamilton noted that in the doab the stream of the Yamuna is broader and deeper than the Ganga except at one place between Culpee (Kalpi) and Etawah where, particularly in the dry season, the passage becomes difficult because of a bank of limestone. He states that before the British acquisition of the doab, merchants from the western parts used land carriage for reaching Futtehghur where the goods were embarked on boats bound down the Ganga to Allahabad. Hamilton further remarks that the merchants avoided the Yamuna in those parts because of the numerous bands of robbers that lined the banks of the river.³²

To promote navigation, the British administrative paper proposed doing away with the large number of chowkies but to retain five major customs posts on the Yamuna at Karnal, Delhi, Agra, Culpee or Hameerpore (Hamirpur) and Allahabad. The customs post at Mathura could be dispensed with because it was thought that most of the boats passing Mathura were bound down to Agra anyway. The Yamuna also facilitated trade with the towns of western India such as Dholpur. The paper noted that a considerable trade in commodities such as iron, cotton, and cloth passed towards “Dhaulpoor” and “Chumbul.”³³ For the import of commodities from Bengal, Bihar, and Allahabad into the western provinces it was suggested that the examination and endorsement of *rawanas* (orders or permits for the free passage) should be done only at the place of loading and unloading.

The Ganga was navigable from Haridwar where the river entered the plain and Hamilton notes that important towns in the doab were supplied with the merchandise and production of the northern and western countries.³⁴ There were a number of chowkies in the Bareilly, Meerut, Farrukhabad, Allahabad, and Banaras divisions for controlling merchant traffic in the Ganga.³⁵ From another British document of the early nineteenth century, we learn that merchant boats sailed to the upper stretch of the Ganga too. This document urged the governor general to exert his authority to clamp down on the illegal exactions by zamindars and *amils* (revenue officials) from merchants transporting their commodities on the Ganga between Farrukhabad and Allahabad through the Nawab’s territory of Awadh.³⁶ The claims of maladministration

³¹ BL, APAC, IOR, Board’s Collections, F/4/1506/59052, Fort William the 20th April 1833, pp. 15–16.

³² Hamilton, *A geographical, statistical, and historical description*, 1:295.

³³ BL, APAC, IOR, Board’s Collections, F/4/1506/59052, Fort William the 20th April 1833, pp. 22–29; There seems to have been trading contacts with central India too as the document states, “The general Trade therefore with Gwalior and the Kora Keerut Sings Country passes through a double line of Chowkies while that from Rajwarra is not stopped till its arrival at the Jumna itself,” p. 29.

³⁴ Hamilton, *A geographical, statistical, and historical description*, 1:450. See also Deloche, *Transport and communications*, 2:19. According to Deloche, in the upper Ganga plain the river was navigable by barges of 18 to 37 tonnes depending upon the season and the flow of the river.

³⁵ BL, APAC, IOR, Board’s Collections, F/4/1506/59052, Fort William the 20th April 1833, pp. 41–47.

³⁶ BL, APAC, IOR, Board’s Collections, F/4/1117/29973, Extract Bengal Judicial Consultations 14 December 1826, pp. 31–36. Farrukhabad, literally “a happy abode,” stood at a little distance from the west bank of the Ganga. It was an important commercial town and the customs duties collected in 1812 and 1813 stood at 252,183 and 194,000 rupees respectively. See also Hamilton, *A geographical, statistical, and historical description*, 1:78, 379.

by the Nawab's officials may be an example of British propaganda against the Nawab's government, but the use of the Ganga for commercial traffic stands out very clearly in this document. Both the British papers discussed above shed ample light on the existence of navigational networks in the rivers through the semi-arid zone of the Ganga plain and they give an indication of how these riverine networks might have been exploited in the pre-British period.³⁷ River navigation was no less conspicuous downriver from Allahabad.

A report on the introduction of steam navigation in the Ganga informs us that the Ganga and Yamuna to the west and south in Hindustan and the Brahmaputra and Meghna to the east the entire country constituted an intricate web of navigable rivers that facilitated trade and traffic.³⁸ Indeed, information on navigation and transport in this zone was handy during the colonial period yet such facilities already existed during pre-colonial times.

In the early nineteenth century, British customs officers were very concerned about merchants' avoidance of paying duty and their "illicit" trade in salt on the rivers. It was reported that the Patna and Tirhut districts imported salt from the "Bullia Pergunnah" in Jaunpur (eastern Uttar Pradesh), which had become a chief depot for the salt imported from the Western Provinces. In Tirhut salt was carried to Hajipur, and then up the great Gandak in order to be distributed throughout the district from different *ghats* (posts on the river-bank).³⁹ While illicit salt was transported to Tirhut and other areas using the navigable channels, the merchandise of Tirhut such as indigo often "floated down the Bugmatee [Baghmati] River to the Moorshedabad Custom House" and skipped paying duties at the Patna customs post.⁴⁰ These examples of illicit salt distribution and indigo transportation show that there existed an extensive web of riverine network north of the Ganga. Although we do not have much evidence for navigation in the rivers discussed above during the pre-colonial period, there is no doubt the merchants of Bihar used these rivers to transport goods to the local towns and port cities in Bengal.

Citing James Rennell, H. T. Prinsep states that in 1780 no less than 30,000 boatmen found their livelihood from navigation, and Prinsep estimated that this number

³⁷ In the doab, areas closer to the Ganga such as Kursat (modern Kursut Buzurg) in Hardoi district of Uttar Pradesh produced cotton textiles and emerged as an important procurement zone for the VOC since the 1630s and for the English Company around the 1650s. Sources are silent on the river communication, but proximity to the Ganga would have certainly played a role in linking these rural areas to important towns, such as Farrukhabad, see Hiromu Nagashima, "Development of periodic markets in the central part of northern India – Especially during the Mughal period –," in *Markets and marketing in north India*, ed. Hiroshi Ishihara (Nagoya/Japan: Nagoya University, 1991), 142–43, Nagashima cites NA, VOC, Collectie Geleynssen, Nr. 75, Dagregister W. Geleynssen, 12.05.1637 and William Foster, ed., *The English factories in India 1655–1660* (Oxford: Clarendon Press, 1921), 70. The area is in the semi-arid zone with the annual average rainfall less than 35 inches. According to Nagashima, these weavers were primarily of peasant background, p. 142.

³⁸ BL, APAC, IOR, P/12/37, Fort William 15th August 1828, n.f. *Reports from Committees*, 678.

³⁹ BL, APAC, IOR, P/111/68, Bihar and Benares Revenue Proceedings (hereafter, BBRP) (Customs), Camp Arrah Zillah Shahabad 31st May 1816, n.f.

⁴⁰ BL, APAC, IOR, P/111/68, BBRP (Customs), Camp Arrah Zillah Shahabad 1st March 1816, n.f.

had at least doubled since Rennell's time.⁴¹ If the qualitative evidence is any guide, we have an early nineteenth century remark about boats congesting the riverbanks for a considerable length at a town in the Bengal delta. A British officer on his way to Patna by river noted, "we broke ground at day break this morning, still tracking, and, in consequence of the vast number of Boats of all sorts, from the dingy to the Wullack, extended along the shore of Culna which is a great emporium of the Burdwan trade of grain etc. and is at least two miles in length, we did not pass it till about 7 a.m."⁴² This evidence indicates substantial boat traffic even in smaller towns such as Khulna in the delta.⁴³ Apart from the towns in the delta the hinterland of Bihar was also frequented by fleets operated by the European Companies.

The Pattenase Togt, or Journey to Patna

The journals kept by the Dutch captains during their river travel between Patna and Hugli constitute the invaluable genre of sources to visualize the rhythms of traffic on the Ganga during the first half of the eighteenth century. The data found in these journals provide fascinating details not only about navigation but also the general political and security related issues. These journals mention the locality of toll posts on the riverbanks when the fleet passes through them. Information on weather, cyclones, and the problems of navigation are minutely entered into the journal. From these, it seems that the Dutch experience might not have been radically different from that of other Asian or European groups on similar voyages in the Ganga, especially in terms of the boats used, hazards of navigation, exploitation of the winds and river currents, and so on.

The Dutch were regularly sailing the Ganga by at least the mid-seventeenth century, when they established their Patna factory. Around 1670, at the time of the ship's surgeon and draftsman Nicolaus de Graaff's trip, the number of boats in such fleets appears to have been rather modest, twenty boats in all.⁴⁴ Seventy years later the number of boats in the fleet increased, sometimes reaching upwards of 150 boats, and every year the fleet made two round-trip voyages between Hugli and Patna, a clear

⁴¹ BL, APAC, IOR, P/12/37, Fort William 15th August 1828, n.f.; *Reports from Committees*, p. 677. For the Mughal period, it has been estimated that there were more than 200,000 boatmen on the river route between Delhi and Bengal. See C. A. Bayly, "Knowing the country: Empire and information in India," *MAS* 27:1 (1993): 8. Bayly cites Hameeda Khatoon Naqvi, *Urban centres and industries in upper India, 1556–1803* (Bombay: Asia Publishing House, 1968).

⁴² BL, APAC, IOPP, Mss. Eur. E271, Journal (anonymous author) of a voyage up the river Ganges to Patna, 1821, p. 12.

⁴³ Such heavy traffic of boats at Khulna, which probably constituted a third rung town, is noteworthy. The towns of the first rung were Calcutta, Dhaka, Murshidabad and Patna. Those of the second rung included Chittagong, Midnapur, Munger, Purnia, Rangpur and Sylhet, see Mukherjee, "Of rivers and roads," 28.

⁴⁴ Nicolaus de Graaff, *Reisen van Nicolaus de Graaff, na de vier gedeelten des werelds, als Asia, Africa, America en Europa: behelsende een beschryving van zijn 48 jarige reise en aanmerkelykste voorvallen, die hy heeft gesien en die hem zyn ontmoet.... als ook een nette, dog korte beschryving van China.... hier agter is by gevoegd d' Oost-Indise spiegel, zynde een beschryving van deselve schryver van geheel Oost-Indiën* (Hoorn, 1701), 91.

indication of the VOC's growing commerce in Bihar and of the region's capacity to meet the Company's growing demands. In the following paragraphs I shall describe the organization of the Dutch fleet as gleaned from the *instructie* or instructions given to the captains and crew.

The Hugli Council periodically issued the captain of the Patna fleet a document called *instructie*, or instructions about river navigation and especially the precautions to be taken. Generally, the *instructie* was issued only to a new captain taking charge of the fleet for the first time. Additions and changes to the *instructie* were generally modest, as a comparison of the documents issued to Capt. Jacob Willem van den Brughen in 1730 and to Lieutenant Captain Jan Geldsack in 1734 shows.⁴⁵ These two instructions hardly differ from each other except in the name of the captain and prominent crew to whom the document was addressed. There were a number of guidelines to which the captain and crew of each fleet were ordered to adhere. It is interesting to note some of the guidelines issued by the Hugli Council in the *instructie*.

Particular emphasis was put on the order in which different boats were arranged in the fleet: "When you have boarded the fleet with all your crew, you have to start your journey in the name of God, having placed the vessels with merchandise, ammunition and supply in good order in the middle of the escort."⁴⁶ Clearly, safety of the cargo and weaponry was the foremost concern. The captain of the fleet was instructed to set sail without delay and to proceed without making unnecessary stops, as was the practice of English and indigenous merchants. Weather permitting, each day they were to sail at daybreak and continue the journey until half an hour before sunset. Afterwards, they were to halt at a place determined by the *darogha* (overseer or superintendent, or head of any department).⁴⁷ The service of the *darogha* was crucial for ensuring the safety of the fleet. Being from the local society, he knew best where to stop the fleet for the night. The *darogha* sailing with van den Brughen was Kesari Singh, whose title suggests his Rajput or Bhumihar identity. The *darogha* was not the only one from the local society. Among the crew and soldiers there were many indigenous people on the boats and the captain was instructed to ensure that no one,

⁴⁵ NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, "Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen," signed by Jacob Sadelijn at Hugli on 23.08.1730, p. 1046. Pp. 1046–80 contain the instructions given to Jacob Willem and the crew of the Patna fleet in the year 1730. For the instructions of the year 1734 see NA, VOC, Inv. Nr. 8777, From Hugli to Batavia 30.11.1734, "Instructie voor den manhaften Capitain Luijtenant Jan Geldsak," signed by J.A. Sichterman etc. at Hugli on 10.09.1734, pp. 694–748; NA, VOC, Inv. Nr. 8777, From Hugli to Batavia 30.11.1734, "Instructie voor den vaandrig Jan van Ingen vertrekkende althans, met een Corps militaire voor aff na Pattana," signed by J.A. Sigterman [spelt differently] at Hugli on 21.07.1734, pp. 679–689. For similar instructions compare those issued to Jacob van der Helling and other crew of the Patna fleet in 1729, see NA, VOC, Inv. Nr. 8762, From Hugli to Batavia 08.11.1729, "Instructie voor den Manhaften Luijtenant Commandant Jacob van der Helling," signed by Jacob Sadelijn at Hugli on 01.09.1729, pp. 195–230.

⁴⁶ NA, VOC, Inv. Nr. 8777, From Hugli to Batavia 30.11.1734, "Instructie voor den manhaften Capitain Luijtenant Jan Geldsak," p. 701: "Waneer uE dan [zijn?] met alle de manschapp in de vaartuijgen gestapt zijn zullen uE de reyse met goed ordre plaatsend de negotie ammonitie provisie vaartuijgen in't midden van het escorte in godes Name aanvangen."

⁴⁷ NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, "Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen," pp. 1047–48.

particularly Europeans, board the boat where their food was prepared because if a European touched their food, they would throw it into the river and desert the fleet.

Wherever the fleet stopped, it created an opportunity for local petty traders to sell foodstuffs and otherwise cater to the needs of the people on the boats. The captain was enjoined to ensure that his crew and soldiers not behave in a hostile manner and that they use no violence against the “blacks” or take goods without paying for them. Such acts would create problems not only with the small traders but also with the authorities. The traders would stop coming to the fleet with the foodstuff, which might hamper efforts to provision the fleet, causing great inconvenience.⁴⁸ Clearly, all these points suggest a fair degree of interaction between the Dutch fleet and local people along the Ganga. But interactions with indigenous boats sailing on the Ganga could be a source of difficulty too. Therefore, the captain was warned not to allow strange boats to join the convoy, which might create issues with the customs officials or jeopardise the safety of the Company’s goods. Furthermore, the captain was ordered not to let his crew or soldiers buy any slaves.

The Patna fleet was generally divided into two *smaldelen*, or fleets, both of which made one round-trip voyage in the second half of the year when the Ganga swelled. The first *smaldeel* left the Dutch factory at Hugli for Patna in July/August and the second left no later than September. For the upriver journey to Patna, the fleet benefited from the eastern winds that prevailed during these months. For the downstream voyage, the Hugli Council expected that both fleets should return to Hugli by the end of November, when the eastern winds slackened. Keeping to this time frame, the fleet of Samuel Martinus left Hugli on 15 August 1728 and reached Patna on 2 October, a passage of about 800 kilometres in more than six weeks. For the downstream journey, the fleet left Patna on 10 November and arrived at Hugli eleven days later.⁴⁹

Normally a fleet consisted of between twenty-five and fifty vessels of various kinds, although sometimes the number of boats was over a hundred. The sailing journals, which are in the form of a *dag register* or diary, and the instructions issued to the captain of the fleet, give the number of boats and crew of the fleet. In 1729, an instruction letter given to Jacob van der Helling mentions 114 boats in the fleet. Among the crew and soldiers, 312 were European and the local employees, including soldiers, numbered 46. Since the general practice was to hire the boats from local boatmen, the number of rowers and indigenous steersmen is not specified. It is further reported that the number of Europeans was 34 less than the previous year. The edited source *Generale Missiven*, however, gives a figure of 157 boats with 344 European military in

⁴⁸ NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, “Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen,” pp. 1048–49.

⁴⁹ NA, VOC, Inv. Nr. 8760, From Hugli to Batavia 18.12.1728, “Dagregister gehouden door den Capitain Samuel Martinus Hogerwerf, gedurende den optogt naar Pattena in het Jaer 1728,” signed by Samuel Martinus Hogerwerf at Hugli on 21.11.1728, entry of 14.09.1728, pp. 33–66.

a fleet going upriver to Patna in 1731.⁵⁰ In 1734, Jan van Ingen commanded 33 boats and the same year, Jan Geldzak sailed to Patna with 49 boats.⁵¹ The instructions of 1734 mention 79 Europeans and 17 indigenous employees on a fleet of 33 boats. Among 79 Europeans, there were 59 soldiers or *gemeene soldaten*, and among 17 indigenous, there were 6 “*pions*” (used as local informants, messengers or militia) and one darogha. In the same year another larger fleet with 63 boats had 109 Europeans, including 83 soldiers, and 44 indigenous servants, 18 of whom were soldiers.⁵² We do not have a clear idea as to where in Bihar these boatmen, pions, and soldiers were recruited. However, it was feared that if the European crew and soldiers harassed the boatmen they might desert the boats and run toward the land.⁵³

The journals include some casual remarks about where boats were built. In the delta, “Bagorganjs” (Bakarganj?) is mentioned as a great centre for indigenous boatbuilding where a great number of big and small boats were built throughout the year. Here one could also purchase the required materials for the building of indigenous barks. Lubertas Vermeer, the captain in charge of surveying the delta to find the new

⁵⁰ J. van Goor, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 9, 1729–1737 (’s-Gravenhage: Nijhoff, 1988), 380, Dirk van Cloon II, 08.12.1732: “Bij heen- en terugtocht was de vloot verdeeld in twee smaldelen. Heen stond hij onder commando van kapitein Van der Bruggen en het nieuwe opperhoofd van Patna Nicolaas de Munt, terug onder dezelfde kapitein en het oud-opperhoofd Gerardus Pelgrom. De vloot omvatte op de heenweg 157 vaartuigen onder escorte van 344 Europese militairen en was voorzien van 6000 ropia reisgeld; terug 33 vaartuigen (12 pattalas en 21 oulaks).” (On the onward and return journey the fleet was divided in two parts. Captain Van der Bruggen and the new chief of Patna, Nicolaas de Munt, commanded the fleet on its onward journey and during its return voyage it was under the same captain and the outgoing chief, Gerardus Pelgrom. The onward going fleet consisted of 157 boats and 344 European military and was provided with 6000 rupees as travel cost. The returning fleet had 33 boats (12 [pattalas] and 21 oulaks).

⁵¹ NA, VOC, Inv. Nr. 8776, From Hugli to Batavia 25.03.1734, “Journaal oft dagregister gehouden bij den Lijutenand Jan Geldzak van Bankenesse Ao: 1733,” signed by Jan Geldzak van Bakenesse [spelled differently] at Hugli on 08.02.1734, entry of 22.07.1733, p. 786 for Jan Geldzak’s fleet consisting of forty-nine diverse types of boat; NA, VOC, Inv. Nr. 8778, From Hugli to Batavia 10.03.1735, “Journaal oft dagregister gehouden bij den vaandrig Jan van Ingen anno 1734,” signed by Jan van Ingen at Hugli on 10.09.1734, entry of 22.07.1734, see p. 485 for Van Ingen’s fleet consisting of thirty three boats; NA, VOC, Inv. Nr. 8777, “Instructie voor den vaandrig Jan van Ingen,” p. 688 and NA, VOC, Inv. Nr. 8777, “Instructie voor den manhaften Capitain Lijutenant Jan Geldsak,” p. 746 for another fleets of boats in 1734.

⁵² NA, VOC, Inv. Nr. 8777, “Instructie voor den vaandrig Jan van Ingen,” p. 687 and “Instructie voor den manhaften Capitain Lijutenant Jan Geldsak,” pp. 744–46.

⁵³ NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, “Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen,” p. 1048. “Ook sullen uE alle de Europeanen ten scherpsten dienen te verbieden de inlandse stuijrlieden ende roeijers der vaartuijgen geene de minste molesten aandoen met slaan stooten ofte wel met hen te steuren en aan te raken in het koken harer potjes dewijl sulx gedaan werdende zijlieden en insonderheijd de heijdenen volgens haren godsdienst dat eeten met [niet?] te moogen nuttigen maar genoodsaakt zijn het selve weg te werpen tot hare droefheijd en schade behalven dat als dan ook te dugten sij niet alleen dat sijl: gelijk se bij de Engelsen weergedaan hebben, de vaartuijgen verlaten en landwaards in vlugten sullen.” (Also Your Honor will strictly prohibit the Europeans (crew and soldiers) from molesting by hitting and disturbing the local boat-steersmen and rowers and by touching the cooking pots. If they have food touched by the Europeans, particularly the heathens (Hindus), according to their faith will not suffer to eat that food but would be compelled by grievances to throw that away. We have also to fear that they will leave the boats and take flight towards land, as they did with the English again and again.)

navigable channels and routes through the Sundarbans to Patna, had anchors and ropes made in Bagorganjs. It is not clear from Capt. Vermeer's testimony whether Bagorganjs built only riverboats or whether the workforce could also build vessels for long-distance sea trade.⁵⁴ Another report, "Memoritje van alle zodanige Vaartuijgen," or the report of the boats used by the VOC in the Bengal directorate, lists the types and sizes of the small number of boats employed by the Company on the Ganga.⁵⁵

Between Hugli and Patna there were many halting places where the Mughals or local chiefs had established chowkies. These included, between Hugli to Rajmahal, Aziemgens, Morcia, Nerangaabad and Dobera.⁵⁶ Beyond Rajmahal, the most important places were Sakrigali, Gangapoursaat, Schabaad (or Shahabad), Chanda, Tjyndpour, Jahangeera, Munger, Singia, Laalpour, Surajgarha, Rouanella (or Ruwanalla), Derriapour, Nawada, Fatuha, and Patna. Shipwrecks were not uncommon, and at places such as Sakrigali, Gangapoursaat, Jahangeera, Munger, and Ruwanalla, there were difficulties in taking the boats across because of the shallow waters, sandbanks, and strong currents. Apart from these, there were innumerable unnamed islands and shallows that posed further difficulties for navigation.

The Dutch sources include many references to accidents and loss of cargo while sailing in the river. Navigation on the Ganga was not free from hazards. Reefs, sandbanks, shallow water, and strong water currents posed threats to the boats. Danger always lurked, and boat-wrecks occurred quite frequently in the Ganga. However, after reading selected sailing journals it appears that major incidents involving shipwreck occurred mainly on the upstream journey, the downstream journey being comparatively smooth with fewer incidents reported.

At Sakrigali, a strong current posed a serious threat to boats sailing upriver. Here, the boats had to be taken to another bank by crossing the currents of the channel and this was done by pulling the boats across with a rope. The same procedure was often repeated at Barari near Bhagalpur, where the Chandan River enters the Ganga giving additional force to the stream and making navigation that much more hazardous.⁵⁷ Junctions of rivers such as the Bur Gandak in Munger and the Kiul at

⁵⁴ NA, VOC, Inv. Nr. 8772, From Hugli to Batavia 05.03.1733, "Daghverhaal van de Reijse met 's E Compagn: Chialoupen en Bassura als eenige Oulacken, bevracht met Militaire Manschappen tot convoij en Ze[e?]varende Perzoonen, tot opsight over de Artelerij dienende voor de Pattenase Toght," signed by Lubertus Vermher at Hugli on 5.01.1733, entries of 15, 16, 17 and 18.12.1732, pp. 1469–71. An early nineteenth-century source talks of the woods in Bengal that ensured "an inexhaustible supply of timber for fuel, boat-building, and other purposes." See *The London encyclopaedia, or universal dictionary of science, art, literature, and practical mechanics*, 21 vols. (London, 1829), 21:410.

⁵⁵ NA, VOC, Inv. Nr. 8762, From Hugli to Batavia 08.11.1729, "Memoritje van alle zodanige vaartuijgen als er in dese Directie," signed by C. de Wind at Hugli on 01.10.1729, p. 267.

⁵⁶ NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, "Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen," pp. 1059–60.

⁵⁷ NA, VOC, Inv. Nr. 8776, "Journaal oft dagregister gehouden bij den Luytenand Jan Geldzak," for the strong river current below Sakrigali, see the entry of 08.08.1733, p. 791. For difficulties in getting the boats across the river near Barari, see the entry of 18.08.1733, p. 797: "Met den light moest ik even boven Barrarij alle vaartuijgen met drie touwen onder kragt van volk door een zeer sterke stroom laten

Surajgarha created difficult points for the riverboats to get across. Between Sakrigali and Bhagalpur, sandbanks in the river posed threats to the safety of boats. When Lt. Jan Geldzak travelled upriver in August 1733, one of the merchant boats of the fleet was wrecked due to the current along the channel near Shahabad above Sakrigali. Sergeants Herman Velting and Cornelis van Aken and the darogha, who were sailing behind the wrecked boat, told Geldzak that the *manjhi* (boat-captain), Ramoth, had handled the boat carelessly and because of that it drifted along the strong current and got wrecked at a sandbank near the shallow waters. Geldzak informed the Patna factory officials that some merchandise such as pepper, mace, and cinnamon was washed away in the incident.⁵⁸

Apart from the dangerous streams, the cyclonic weather and storms formed yet other sources of navigational hazards. The monsoon weakens in September and October, but this is the season of periodic cyclones and storms that pose additional threats to boats. A major shipwreck was reported on 20 October 1730 at Rouanella when a fleet under Jacob van Helling was only a few kilometres from Patna. Cyclonic winds and rain and the resulting strong currents destroyed almost all the boats.⁵⁹ During this turbulent weather, it is reported, the British, with their hundred or so merchant- and military-boats, along with three treasure-boats, stayed put between Jangiera (Jahangeera) and Coedercatta. Whether they sustained any damage is not reported.⁶⁰

Reefs posed another threat to the boats. There were reefs along Sakrigali, Bhagalpur, Jahangeera, and Sitakund near Munger where outcrops of southern hills encroached upon the Ganga. In the course of the journey, sounding the water was a routine practice and after ascertaining the depth of the *canael*, or channel, the fleet advanced. Soldiers and the darogha were regularly employed for this purpose and they used to sail ahead of the fleet with some *pollewaers* (*pulwar*, a type of boat) and report the river conditions to the fleet captain. Sometimes other problems occurred. Near Gangaprasad, it was reported in October 1734 that the channel of Terriagully had become unnavigable due to the floodwaters from the mountains as also by the whirlpools and the washing away of some corners/banks. Therefore, some pions were sent to explore another route through the Purnia's territory.⁶¹

slepen." (In order to cross the very strong current above Barrarij, at sunrise I had to get all the boats dragged by the men using three ropes.)

⁵⁸ NA, VOC, Inv. Nr. 8776, "Journaal oft dagregister gehouden bij den Luitenant Jan Geldzak," entry of 12.08.1733, p. 793–94.

⁵⁹ NA, VOC, Inv. Nr. 8762, "Journaal in form van een dagregister gehouden door den Luitenant Commandant Jacob van der Helling," entry of 20.10.1729, pp. 78–79.

⁶⁰ NA, VOC, Inv. Nr. 8762, "Journaal in form van een dagregister gehouden door den Luitenant Commandant Jacob van der Helling," entry of 25.10.1729, p. 83.

⁶¹ NA, VOC, Inv. Nr. 8778, From Hugli to Batavia 10.03.1735, "Journael of dagregister gehouden bij den Capitain Luitenant Commandant Jan Geltsak van Baknesse Anno 1734/35," signed by J. Geltsak van Baknesse at Hugli on 4.03.1735, see the entry of 05.10.1734, pp. 508–9: "en ontfang verders berigt van de uitgesonden water pijlers dat de spruijt van Telijagerrij oft Gangapoursaat soo door het sterke afvliedend waeter uijt het gebergt gemengd med swaare draaij kolken als mits het weg spoelen van eenige hoeken voor de presente tijd daardoor onbevaarbaar was geworden." For the rocks of Jahangeera, the cause of several accidents in the Ganga, see De Graaff, *Reisen van Nicolaus de Graaff*, p. 95.

In the eighteenth century, it was in these troubled waters that zamindars began to assert on the river traffic and demanded “customs duty” from the merchants transporting their goods. As the Mughal authority became practically ineffective along the Ganga, the zamindars began to augment more resources in their hands. Also, on account of profits gained from the cash crops, mineral and forest products from the adjoining hills and jungle, some zamindars were able to mobilize large resources. In order to appreciate these political processes, it is important to underline the pivotal role of the Ganga in facilitating the trade and transportation of commercial goods produced in the areas controlled by the zamindars.

Rhythms of Production and Transportation around Patna

In a normal monsoon year in the Ganga plain, two crops, i.e. autumn or *kharif* and winter or *rabi*, were produced as we noted in Chapter 2. Marketable winter crops included wheat and oilseeds, which were harvested in April-May. Autumn crops such as paddy, cotton, and sugarcane, which could be ready from December-January, were sold in the local markets in the subsequent months. Since the commodities produced from these autumn crops could be stored and preserved for several months or more, peasants and local merchants waited for a better price for their goods, usually until the second half of the year when communication by rivers eased. During the winter and spring, the Himalayan glacier did not melt to any significant degree and thus the river streams continued to be weak until the summer monsoon. At the onset of the summer monsoon when river traffic eased, it offered relatively smooth communication to the market towns and the marketable crops could fetch an even better price from the merchants trading in relatively distant markets.⁶² The Dutch Patna fleet, as we shall see below, started to operate during the summer monsoon as it was then easy to navigate the swollen Ganga. During the first half of the year and until the monsoon, the Dutch and other merchants at Patna could purchase and store their merchandise to be shipped to Bengal from July/August onward.

Thus, it appears that the rhythms of navigation and the traffic in the river closely followed the rhythms of production and trade. For example, as Anand Yang has shown, in the nineteenth century one of the main winter or *rabi* crops of Bihar (harvested in March-April) such as oilseeds dominated the commercial traffic to Calcutta from July throughout the monsoon and even during later months. During this period, oilseeds and rice together constituted more than half of the traffic on the Ganga. Furthermore, while ghee, indigo, sugar, hides, wheat, saltpetre and oilseeds flowed downstream, commodities such as rice, opium, and tobacco made up the bulk of the traffic bound upstream beyond Patna towards the north-western provinces.⁶³ Another indication of the voluminous river trade comes from a petition written on 30 June 1816

⁶² Kumkum Chatterjee, *Merchants, politics and society in early modern India: Bihar, 1733–1820* (Leiden: Brill, 1996), 52–53.

⁶³ Anand A. Yang, *Bazaar India: Markets, society and the colonial state in Gangetic Bihar* (1998; repr. New Delhi: Munshiram Manoharlal, 2000), 30.

by seventeen Bihari merchants seeking an exemption from having to take the rawana at Patna. From this petition we know that they used to purchase mustard seeds, linseed, ghee, mutter (peas?), cloth, among other things, in Tirhut, Bhagalpur and Purnia districts and took their merchandise on the Ganga to Murshidabad for sale. The petition claims that these seventeen merchants paid one hundred thousand rupees every year as customs duty at the Murshidabad customs house where they also took the rawana. But the new regulation required them to take the rawana at Patna causing the merchants some inconvenience. The trade plied by the local merchants appears to have been large. The customs rate was normally 5 percent, so a payment of one hundred thousand rupees means that the total value of trade of these seventeen merchants was two million rupees, or two hundred thousand pounds sterling. This suggests that rich commercial traffic linking the interiors of Bihar suba existed with the large markets such as Murshidabad and Calcutta in the Bengal delta.⁶⁴ There were of course other merchants carrying out similar trade from Bihar and this commercial traffic would have existed during the previous centuries also.

In the eighteenth century, however, textiles, opium, and saltpetre were important commodities for the Dutch Patna fleet and their production rhythms were synchronized with the traffic rhythms in the Ganga. Cotton was a rabi crop harvested by December–January at the latest (although considerable quantities of cotton were brought from western India). Afterwards, the moist winter weather was more suitable for processing the raw cotton to make threads and for weaving. Thus the bulk of the textiles were ready for sale in the Patna market well before the arrival of the monsoon. Similarly, poppy being a rabi crop, its finished product (opium) entered the market from May/June and the sale of the commodity matched the traffic rhythm perfectly. Bihar also produced a prodigious quantity of saltpetre, a kind of salt that was the chief ingredient for manufacturing gunpowder. Towards the end of the rainy season the salt evaporated and crystallized on the surface of the land. The entire procedure from collection of the white substance from the earth's crust to refining it for sale commenced during the winter season and the commodity was ready to be shipped before the dispatch of the Patna fleet.

The Dutch merchants' *Pattenase Togt*, or voyage to Patna, underlines the significance of the linkages between the productive hinterlands of Bihar and the maritime economy of Bengal. These voyages by the Dutch and other merchant groups commercially integrated the hinterlands of Bihar with the more extensive maritime trade. Such integration of markets and the influx of bullion had important implications for the economy and polity of Bihar, as we will see in the next chapters. And at the centre of all these activities, the Ganga as a navigable trade route played a pivotal role.

We have seen above the transportation of merchandise through an intricate web of navigable channels in the Ganga plain. While the rivers propelled the economic

⁶⁴ BL, APAC, IOR, P/111/68, Behar and Benares Revenue Proceedings (Customs), Camp Culwar Zillah Shahabad, 3 August 1816, n.f.

activities they were no less important in the political processes of the region. The northern part of the Ganga was intersected by a number of Himalayan rivers which provided water for irrigation and most of the rivers were perennially navigable. By contrast, the rivers to the south of the Ganga hardly offered any navigation and hence the southern regions were integrated politically and economically mainly by overland routes. By the eighteenth century, the Mughal state had become weak for a variety of reasons and was unable to collect tribute from the chieftains. Strategically located along the Ganga, particularly at places where the hills and jungle approached the river, the zamindars successfully defied Mughal authority. As I shall show in Chapter 7, Mughal control over the Ganga and overland trade routes were increasingly infringed upon and zamindars and warlords appropriated many of the profits from the customs and duties levied on the merchants passing through the Ganga or overland routes.

In the above paragraphs I described the Ganga River system, navigation, and interactions between the people and resources of the semi-arid and humid zones. By linking the hinterland of Bihar with the maritime zone in the delta, the Ganga reoriented the regional economy toward the sea and connected two different ecological zones. In the age of maritime commerce the overseas demands for merchandise of Bihar brought more liquid money into the region and propelled the growth of the commercial economy. Boost to the commercial economy also came through the overland routes of the Ganga plain.

Section II: Roads

Cost-effective though they were, the rivers were not the only means of communication along the Ganga plain. The seasonality and hazards involved with river navigation often left merchants no alternative than to use overland routes. While rivers formed an intricate web of communication especially in the wet season, during the dry months the overland routes facilitated the movement of pilgrims, merchants, and military forces. As we noted above in the case of Farrukhabad and Mathura, at many places the overland routes complemented the river routes. Perhaps the Uttarapatha was the most ancient and recognisable overland route linking the Ganga plain with northwestern India and Central Asia. The Turko-Afghan conquerors reached the Ganga plain following the same ancient route, and it became the primary land route of the Mughal Empire and, later still, the Grand Trunk Road of the British Raj.

What explains the remarkable longevity of this land route? People select a route by giving close consideration to the natural and geographical factors, and as Lucien Febvre points out, the existence of a network of routes is not possible without active and earnest co-operation between nature and humans.⁶⁵ Even many contemporary Indian railways and highways are laid down along routes used since antiquity. In

⁶⁵ Lucien Febvre, *A geographical introduction to history*, in collaboration with Lionel Bataillon, trans. E. G. Mountford and J. H. Paxton (London: Kegan Paul, 1932), 316.

consequence, these routes can help us identify the historical geographic factors that necessitated their alignment and continuous use. We might ask, for example, what logistical needs encouraged people to favour one route over another. In the pre-automobile age, animals were widely used as beasts of burden and pullers of carts. As an automobile requires refuelling, so do animals, the availability of fodder along the route must have always been a requirement for a practical route. Furthermore, a road cannot cut across dense jungle, which makes the movement of animals and carts difficult and hides threats from predatory animals and bandits. Routes therefore developed more easily along the margins of agriculturally fertile tracts as well as along the uncultivated riverbanks where obstacles were relatively few and food, water, and fodder could easily be obtained. In the following paragraphs I discuss the major trunk routes of the Ganga plain and describe the ecological zones they crossed and connected. After describing the routes of the Ganga plain, I will zoom in again to the transitional zone in Bihar. By describing the overland route systems of Bihar I examine the interactive relations between different ecological areas. As we saw in Chapter 2, such interactions proved crucial for economic growth and state formation in the past. In the early modern period, their importance for the economy and polity was unmistakable.

The Great Northern Road

We have already discussed the early migratory routes along the Yamuna and Ganga rivers and through the Ganga plain. These routes were found on the border between dry and humid zones. The great northern road linked the entire Ganga plain with the northwestern parts of the Indian subcontinent. On the basis of Buddhist sources, Eggermont suggests that the northern road ran from Taxila to Mathura, which was a junction of four crossroads. One road branched off towards Ujjain, following the Yamuna. Those travelling to Pataliputra (Patna) might follow the eastern bank of the Yamuna until Prayag where they followed the northern banks of the Ganga. In the doab an alternate route followed the western banks of the Ganga via Samkassa and Kanyakubja before it reached Prayag.⁶⁶ In the third century BC, Megasthenes described the Mauryan highway connecting the northwest to Pataliputra through Mathura.⁶⁷ Kharosthi-Brahmi inscriptions of the early centuries AD from the delta and also from Chunar, to the west of Banaras, likewise attest to the northwestern overland communication through the Ganga plain.⁶⁸ During the Kushana period, the northern road and parts of Central Asia came under the suzerainty of a single empire. As a result of the political and administrative unification under the Kushanas, the northern road of the Ganga plain became an important extension of the Silk Road. These developments

⁶⁶ P. H. L. Eggermont, "The Murundas and the Ancient Trade-Route from Taxila to Ujjain," *JESHO* 9:3 (1966): 293–94.

⁶⁷ Himanshu Prabha Ray, "Early historic trade: An overview," *IESHR* 26:4 (1989): 439. For the long routes connecting Pataliputra to different towns and ports, see Prakash Charan Prasad, *Foreign trade and commerce in ancient India* (New Delhi: Abhinav Publications, 1977), 70–71.

⁶⁸ Ranabir Chakravarti, "Relationships and Interactions in the Economic Sphere," in *A social history of India*, ed. B. D. Chattopadhyaya (New Delhi: Pearson Education India, 2009), 146.

had a positive effect on long-distance trade and it has been suggested that some commodities such as bamboo from Yunnan passed along the northern road of the Ganga plain en route to Bactria.⁶⁹ Recent research by Bin Yang and Sun Laichen sheds additional light on the overland connections between Yunnan and mainland Southeast Asia and South Asia.⁷⁰ However, we do not know the extent to which commodities circulated between southwestern China and the Ganga plain.

During the Mughal period, the alignment of the ancient Uttarapatha underwent a little modification. In the northwest, the Mughals diverted the old route away from the Himalayan foothills and linked Rawalpindi and Peshawar with a route oriented more towards the Indus plain downstream. They controlled this route from their strategic forts at Atak on the Indus and Rohtas on the Jhelum. Between Rohtas and Lahore, the Mughal route ran across the plains of the Jhelum, Chenab, and Ravi Rivers, while from Lahore to Ambala, in the Punjab, the route shifted more towards the Shiwalik Hills and crossed the Bias and Sutlej Rivers upstream. This route previously linked Lahore and Panipat through the relatively dry and well-drained areas of Bhatinda and Karnal, as the eleventh-century Arab geographer and traveller to India, Alberuni, informs us.⁷¹

After the eleventh century, the northwestern route was re-oriented towards the Indus plain, possibly because that route would have been more practicable for cavalry and dromedaries (a recent introduction in the Indian subcontinent) than one that skirted the foot of the mountains. Food, water, and fodder were easily available and the route through the plain could be more easily controlled from forts such as Atak and Rohtas (not to be confused with the Afghan stronghold of the same name in southern Bihar) while the route through the foot of the mountains was often vulnerable to attacks from the hill tribes.

The shift from the Lahore-Panipat to Lahore-Ambala route in the post-eleventh century period is more difficult to explain. If we believe the data for the Medieval Climatic Anomaly (900/950 to 1250/1300), it probably would have been relatively moist when Alberuni visited India.⁷² A more propitious rainfall and the availability of fodder and food along the plain between Lahore and Panipat would make that route system more feasible. When the rainfall diminished after the thirteenth century, this

⁶⁹ Moti Chandra, *Trade and trade routes in ancient India* (New Delhi: Abhinav Publications, 1977), 2.

⁷⁰ Bin Yang, "Horses, silver, and cowries: Yunnan in global perspective," *JWH* 15:3 (2004): 281–332. Yang has brought into focus the route he calls the Southwest Silk Road. He has also given the alignment of overland routes linking Yunnan to mainland Southeast Asia and South Asia. See also Sun Laichen, "Military Technology Transfers from Ming China and the Emergence of Northern Mainland Southeast Asia (c. 1390–1527)," *JSAS* 34:3 (2003): 504–6. Laichen has briefly reflected on the military contacts between the northeastern parts of India and mainland Southeast Asia and China.

⁷¹ Alberuni, *Alberuni's India: An account of the religion, philosophy, literature, geography, chronology, astronomy, customs, laws and astrology of India about 1030*, ed. Edward C. Sachau, in 2 vols. (London: Kegan Paul, 1920), 1:205–6, 211. See also Deloche, *Transport and communications*, 1:32–36, see map facing p. 38 for the alignment of route during Alberuni's travel.

⁷² Victor Lieberman and Brendan Buckley, "The Impact of Climate on Southeast Asia, circa 950–1820: New Findings," *MAS* 46:5 (2012): 1056–66; see also Ashish Sinha, et al., "A global context for megadroughts in monsoon Asia during the past millennium," *Quaternary Science Reviews* 30 (2011): 47–62.

route shifted more towards the foothills and crossed the Bias and Sutlej Rivers. Another factor may have been the rise of the Bhattis—Rajputs, Jats and other groups—who from the eleventh century onward emerged as formidable and well-armed horse-breeders in the Lakhi jungle and subsequently threatened the security of the Lahore-Panipat route.⁷³

The Mughal trunk route followed the western banks of the Yamuna from Ambala to Agra, where it crossed to the eastern banks before continuing on to Allahabad. Subsequently, the route followed the northern banks of the Ganga to Banaras where it again crossed the river and led through Mughal Sarai, Sasaram, and Daudnagar to Patna. Throughout its length from Ambala to Patna in the Ganga plain, the trunk route kept to the drier areas and followed the watercourse. This segment of the trunk route largely remained unchanged since the first millennium BC. Thus, the geo-logistics along the Uttarapatha in the Ganga plain guided migrants, travellers, and merchants to the southeast. We have already discussed the Indo-Aryan speakers' migration along this route in Chapter 2. From the first millennium BC to well until the early modern period, when caravans of pack animals, bullock carts, and horses tread the great northern road, the same riverbanks of the Yamuna provided food, water, and fodder to merchants and armies and their animals. The road through the semi-arid marches along the Yamuna was within easy reach of the resources of the fertile agricultural tracts that lie to the east and also the pastoral resources from the semi-arid zone to the west. Thus, the great northern road also became a critical feature for the processes of state formation that unfolded over the course of two millennia or more. Below I focus more on the transition zone of the Ganga plain along the trunk road. I shall examine the extent to which the dynamics of route systems described in the above paragraphs inform our understanding of the historical processes in the eastern tract of the Ganga plain. It is obvious that the Trunk Route along the Ganga in Bihar passed through the intersecting margins of fertile agricultural fields to the north and the drier areas to the south.

The Grand Trunk Route

From Patna to Rajmahal the old Trunk Route (I shall call it the Ganga Route) along the banks of the Ganga covered a distance of about 320 kilometres.⁷⁴ A physiographic overview of this route enables us to understand its significance for state-builders, merchants, and travellers. The northern fringe of the Chhota Nagpur Hills paralleled the Ganga from Kiul to Rajmahal and at many places this route is sandwiched between the river to the north and the hills to the south. There are many narrow passes of great strategic significance along this route. For example, in Munger the distance between the hills and the Ganga is little more than two miles, while at places like Sakrigali, Teliagarhi and Udhanala (this last one after Rajmahal) the passes are narrower still; in

⁷³ J. J. L. Gommans, "The silent frontier of South Asia, c. A.D. 1100–1800," *JWH* 9:1 (1998): 17–20.

⁷⁴ BL, APAC, IOPP, Mss. Eur. Orme OV 134, p. 185.

the past they proved to be of great military and strategic importance in blocking the passage of hostile armies coming from either the west or the east.⁷⁵ From “Siclygully” the Ganga Route reached “Terriagully” and then “Shawabad.” From Shahabad one branch followed the Ganga to Pointy while another branch took a strait route to “Colgong” (Kahalgaon), thus avoided Pointy and the semi-circular curve of the Ganga.⁷⁶ Logistically speaking, this route lay in close proximity to sources of food and fodder. The grassland along the banks of the Ganga provided excellent grazing for cattle, horses, and other beasts of burden, which could easily be fed while on the march with armies or in the caravans of *banjaras*, or traders.⁷⁷

However, references to caravans of pack animals transporting goods between the delta and the Ganga plain via this overland route are hard to come by. The obvious explanation seems to be the cost effectiveness and relative ease of navigation on the Ganga in transporting bulk goods. Therefore, riverboats made the caravan traffic rather uneconomical. Instead, references to the strategic importance of the Ganga Route come more frequently. For example, the eighteenth-century Jesuit missionary Joseph Tieffenthaller called the Teliagarhi Pass on the Ganga Route the “key to Bengal.” At this pass, east of Bhagalpur, the distance between the riverbank and mountain is about three quarters of a mile and even a small contingent of soldiers could easily block the passage of the largest enemy army.⁷⁸ According to C. E. A. W. Oldham, it was at Teliagarhi that the Afghan emperor of Hindustan Sher Khan (the future Sher Shah) was stopped when he marched against Gaur in 1536. Just two years later, in 1538, it was here that Sher Khan’s son Jalal held the pass against Humayun.⁷⁹ During the fratricidal wars of the Mughal succession in the mid-seventeenth century, Sultan Shuja used the Munger Pass in a similar fashion. In many such wars, the outcome was decided by the routes approaching the Ganga Route from the surrounding Chhota Nagpur Hills and scrub jungles. Thus, the physiography of the Ganga Route makes it easy to comprehend why this route was highly contested by centralizing political forces and local powers, especially as the Mughal state weakened in the early eighteenth century and its authority was challenged by the zamindars who asserted their control over these passes and the routes.⁸⁰

⁷⁵ C. E. A. W. Oldham, “Routes, old and new, from lower Bengal ‘Up the Country.’ Part 1, Old highways and by-ways,” *Bengal Past and Present* (BPP) 28:55–56 (1924): 24.

⁷⁶ BL, IOR, X/995, Map no. 4. See also James Rennell, *A Bengal atlas: Containing maps of the theatre of war and commerce on that side of Hindoostan* (London, 1781), Map no. 2 at Leiden University Library, Bijzondere Collecties (Special Collections), COLLBN Atlas 89. See the reference of “verdant banks” along the Ganga Thomas Twining, *Travels in India: A hundred years ago with a visit to the United States being notes and reminiscences by Thomas Twining*, ed. William H. G. Twining (London, 1893), 114.

⁷⁷ The physiography of the riverbanks from Allahabad to the delta is shown dotted with swamp and grassland on Rennell’s map. These swamps and grasslands would have been a good source of fodder for the beast of burden. See Rennell, *A Bengal atlas*, map nos. 14, 15.

⁷⁸ Deloche, *Transport and communications*, vol. 1:39, note.

⁷⁹ Oldham, “Routes, old and new, Pt. 1,” 25.

⁸⁰ An assertive Murshid Quli khan the *Diwan* (revenue minister) of Bengal had refused to send treasure to Delhi in 1712. As a result, a battle was fought between the imperial army and Murshid Quli’s men

The route through the drier, well-drained southern parts of Bihar was extremely significant in countering the strategic importance of the Ganga Route. In the second half of the eighteenth century the British quickly recognized the strategic value of the southern Bihar route, which was unmapped and relatively less frequently used by the Mughals. As Oldham suggests this southern route may have been in use by pilgrims and merchants when the Chinese Buddhist pilgrim I-tsing visited in the seventh century AD, but its subsequent history is even less clear. More than a millennium after I-tsing, in the 1760s and 1770s the English East India Company government surveyed the Chhota Nagpur region to lay a “New Road” from Calcutta to Chunargarh in the heart of the Ganga plain. In the early 1780s, this New Military Road (as it came to be called) penetrating the Chhota Nagpur region was laid down by the British in an effort to contain the Marathas, who were encroaching from Orissa in the south, and to have better control over the newly conquered province. Fifty years later saw the opening of the Grand Trunk Road, which ran parallel to and north of the New Military Road.⁸¹ After some alignments, the Grand Trunk Road followed a straight line from Hugli to Sherghati in Bihar where it merged with the earlier New Military Road and proceeded through the doab toward the northwest. By the mid-nineteenth century, the Grand Trunk Road ran for more than 2400 kilometres from Bengal to Peshawar.

Apart from its military and strategic significance, the Grand Trunk Road facilitated the movement of travellers, pilgrims, and merchants. According to an eighteenth-century source, a caravan of 100,000 oxen carrying broad cloth, tin, pepper, spices, and other commodities started from Radanogore in Bengal in March and within two months’ time reached Delhi.⁸² Anand Yang has estimated that in the 1840s the Grand Trunk Road facilitated the carriage of between nineteen and twenty two thousand tonnes of freight between Banaras and Calcutta, with freight charges being almost double that for goods carried by river. On the other hand, about 81,000 tonnes were carried on the Ganga (cargo sufficient for about a hundred merchant vessels sailing between Europe and Asia!) and the freight cost was two pence per ton per mile. The overland route was better suited to commuters, pilgrims, and travellers than to merchants travelling with their goods. In the early nineteenth century no less than 435,000 people annually travelled on the Grand Trunk Road and yet another 30,000 to 40,000 passengers travelled by one or other sort of conveyance such as palanquin, litter, bullock carts, horseback, and elephants. However, fewer than sixty thousand (58,378) people travelled by river between Banaras and Calcutta.⁸³ While the Grand Truck Road furnishes information on the quantity of merchandise and number of travellers, we hardly know anything about the goods or people who moved through the Ganga Route

who had taken the Sakrigali pass. See, BL, APAC, IOR, P/1/2, Bengal Public Consultations (hereafter, BPC), fos. 240r–v.

⁸¹ Oldham, “Routes, old and new, Pt. 1,” 22, 30–35. See also C. E. A. W. Oldham, “Routes, old and new, from lower Bengal “up the country,” Part 2, “The ‘New Military Road’ and Grand Trunk Road,” *BPP* 30: 59–60 (1925): 18–34; for I-tsing see p. 18.

⁸² BL, IOPP, Orme Mss. OV. 134, fo. 112 cited in Mukherjee “Of rivers and roads,” 26.

⁸³ Yang, *Bazaar India*, 44–45, for the freight charges see note on p. 44.

even though the Mughals seem to have kept the records of travellers at Munger and other places.⁸⁴ Although the Grand Trunk Road served the military needs of the British Empire, it crossed the barren scrub jungle and areas of marginal agricultural importance and as a result failed to attract commercial traffic from the Ganga Route, which continued to be the pivot of economic and political dynamism well into the nineteenth century.

Between Patna and the delta, the Ganga Route ran parallel to the Ganga River and the two routes complemented each other. The Ganga Route was connected with a number of feeder routes that linked the hinterlands or production areas. As we have seen, the rivers of southern Bihar were largely unsuitable for navigation and the overland routes were more in use. In the following paragraphs I shall sketch the local routes that originated from southern and northern Bihar and converged with the Ganga Route.

Feeder Routes

To the south of the Ganga an important road ran from Fatuha on the banks of the Ganga and reached Sherghatti via Hilsa, Rajgir, and Gaya. Another feeder route started from Nababgunj on the southern banks of the Ganga and linked the countryside of southeast Bihar as it ran southward to Jamui and then took the southeast direction via Cakai, Deoghar, Sarath, and Nagar. From Nagar, one road branched northeast towards Murshidabad and another ran in the direction of Hugli.⁸⁵ These networks of subsidiary routes linked the countryside with the Ganga Route and facilitated the transportation of the agricultural and craft products to the main artery of trade. Some of these southern Bihar routes gave an access to the delta through Deoghar and Sarath.

On a map drawn by a Dutchman Jan de Wall in 1755, three secondary routes are shown descending almost vertically from Gaya and Nawada to the Ganga Route. The route coming from Gaya is shown as passing through “Perisila”, “Tikarij” (Tekari), and “Kinzer” (?) where it got aligned with a route linking “Cira” on the southern banks of the Punpun and “Nabetpour” through “Baripour.” At Naibatpur it joined the Ganga Route coming from Daudnagar along the eastern banks of the Son, and from Naibatpur it ran almost parallel to the Ganga to Patna. From “Tsua” near Nawada (written “Barika Nawada”) a small route passed through “Baremkund” in the hills and reached “Razigir” (Rajgir). From Rajgir the route branched into two, converged at Magra, and branched out again before both reached “Fettua” (Fatuha). Another small route is shown linking Patna and “Seidabath” (Saidabad) to the south. The map is drawn at a scale of 50 “kos pakka” and 30 *kos* for one degree (*kos* was a measurement of distance that varied from region to region; the “kos pakka” in the Ganga plain measured 3.21 kilometres). However, the precision of the map is doubtful and it appears more like a decorative map with colours and flags intended to advertise the commercial strength of the VOC

⁸⁴ John Marshall, *John Marshall in India: Notes and observations in Bengal 1668–1672*, ed. Shafaat Ahmad Khan (London: Oxford University Press, 1927), 124.

⁸⁵ Deloche, *Transport and communications*, vol. 1, see map 5, facing p. 43.

in comparison to the rival English East India Company. The map shows nine Dutch posts and factories in and around Patna in 1755, but only one English settlement. Even so, many of the routes and towns mentioned on the map are real even if the map was intended more for propaganda purposes.⁸⁶

A decade later, Samuel Dun drew a map with more details and greater precision based on British survey reports. Except for the “Seidabath” route, the British map shows most of the southern routes depicted on the de Wall Dutch map.⁸⁷ The Dun map shows at least three important southern routes vertically joining the Ganga Route and the Ganga River between Fatuha and Munger. All three are shown descending from the southern routes that ran eastwards through the hill country, following the Buraker, Ajay and Damodar rivers towards the towns in the delta. James Rennell’s *A Bengal Atlas* shows a succession of feeder routes vertically linking the Ganga Route in the north and the southern hill routes.⁸⁸

Many of the southern routes joined the Ganga Route to the north with the main southern route that became the Grand Trunk Route. These routes provided the vital linkages between dry and hilly southern Bihar and the more productive Ganga plain. Southern Bihar belonged more to the mobile spheres in which boatmen, militiamen, porters, and banjaras offered their services. The Ganga Route was the most convenient meeting point for the exchange of goods and services between these two different environmental zones. At another level, as the dynamics of such interaction between the drier and humid zones suggests, the settled agrarian society was often vulnerable to the mobile forces from the southern drier parts, probably as early as the fifth century BC, when the Magadha king Ajatshatru defeated the Vajji ganasangha. Later, the emergence of Pataliputra as an imperial capital of Magadha attests to the political aspirations of the empire builders to control the rich agrarian resources of northern Bihar.⁸⁹ Probably a similar motive was at work when Sher Shah decided to build a fort at Patna, which testifies to the strategic importance of the area during the sixteenth century. During the Mughal period, Patna and Munger remained key strategic administrative and military posts along the Ganga Route.

⁸⁶ NA, The Hague, HaNA_4VEL H 121; J. J. L. Gommans, Jeroen Bos and Gijs Kruijtzter, *Grote atlas van de Verenigde Oost-indische Compagnie / Comprehensive atlas of the Dutch United East India Company*, dl. 6: *Voor-Indië, Perzië, Arabisch Schiereiland* / Vol. 6, *India, Persia and the Arabian Peninsula*, with contributions by Pauline Lunsingh Scheurleer, Geert Stroo and Elsbeth Vorstenbosch, (Voorburg: Atlas Maior, 2010), sheet 408. For different measurements of kos in South Asia see Deloche, *Transport and communications*, 1:288–92.

⁸⁷ BL, Map Room, Maps K. Top. 115.31. “A map of Bengal, Bahar and Orixia, laid down by Samuel Dunn from original surveys and journals kept by Henry Vansittart, c. 1765–1770.” See also BL, IOR, X/995. Map no. 3 shows a well-marked road from Sultanganj on the Ganga to “Deugarh.” This route passed through Tarapur shown as a large town. This would have been the pilgrim route linking the Ganga and Deoghar Baidyanath. On the map of Rennell the Seidabath route is shown linking Patna and Jahanabad and further to Lucknow (Lakhawar, the famous cotton textile production centre near Patna), see Rennell, *A Bengal Atlas*, map no. 3.

⁸⁸ Rennell, *A Bengal atlas*, maps no. 2 and 3.

⁸⁹ Dilip K. Chakrabarti, “Relating history to the land: Urban centers, geographical units, and trade routes in the Gangetic and central India of circa 200 BCE,” in *Between the empires: Society in India 300 BCE to 400 CE*, ed. Patrick Olivelle (New York: Oxford University Press, 2006), 14.

The routes from the northern agrarian heartland also approached the Ganga River and overland Ganga Route. North of the Ganga, many rivers could be used for the transportation of grain and other merchandise except during the dry season, especially from December to May, when traders with pack animals and travellers took to the road. The maps of James Rennell show that at least nine routes converged at the town of Darbhanga, which was connected with the Ganga through the Bur Gandak. To the east of Darbhanga, Purnia is also shown at the junction of about nine feeder routes.⁹⁰ All these subsidiary routes connected the agriculturally productive rural areas to the bigger towns which had an access to the river or overland route for transporting merchandise to the regional towns and from there to the maritime port cities.

Patna was also linked with Nepal and Tibet by the overland route that traversed the humid Ganga plain of northern Bihar. This route followed the eastern bank of the Great Gandak up to Motihari, from where the track crossed the Terai through Cisopani Garhi before reaching Kathmandu.⁹¹ According to John Marshall, the Patna-Nepal route through Motihari reached Bhutan and Tibet. Another route to Nepal passed through Banaras.⁹² Commodities of Nepal such as borax and musk among others gravitated towards the Ganga for their access to the maritime trade.

The web of overland routes discussed above linked different ecological zones with the major trunk route that provided long-distance links. In order to find markets, commodities, and resources of the humid and dry zones to the north and south of the Ganga respectively gravitated towards the highways. As goods moved on these routes and generated revenue, control over the routes became crucial for the state formation process. These routes were not the preserve solely of merchants and their goods; they were also used by travellers of various sorts.

Travellers

Whenever the political situation provided some security to travellers, a whole range of people travelled by road. Most notable among these itinerants were pilgrims, merchants, and soldiers. Already in the seventh century AD the Chinese Buddhist pilgrim I-tsing (Yijing) travelled on the road connecting Nalanda with Tamruk (Tamralipti) in the company of a party of hundreds of merchants.⁹³ Almost a millennium later the English merchant Peter Mundy, who travelled in the early seventeenth century, also attested to the pilgrims' traffic at Allahabad, Banaras, and Gaya. He guessed the number of pilgrims who came across his way to be more than

⁹⁰ BL, IOR, X/995, Map nos. 1 and 4. See also Rennell, *A Bengal atlas*, Map no. 4 on which only seven overland routes are shown directly entering Darbhanga town and the other two routes join in the western route in the outskirts. On map no. 5, nine overland routes are depicted to be converging at Purnia.

⁹¹ Deloche, *Transport and communications*, 1:19–20.

⁹² Marshall, *John Marshall in India*, 161; the folk tales also hint at the merchant caravan linking different parts of Bihar and the Himalayan Terai, see Catherine Servan-Schreiber, "Indian epics of the Terai conquest: The story of a migration," *Diogenes* 46/1:181 (1998): 77–93.

⁹³ Oldham, "Routes, Part 1," 22.

one hundred thousand.⁹⁴ In the mid-eighteenth century when Mustapha was on his way to Ramgurh from Calcutta, he saw a huge number of sanyasis going to Sagar as we noted in Chapter 1. In the early nineteenth century Francis Buchanan reported “[m]any pilgrims, very few other passengers” on a route to Barh east of Patna, south of the Ganga.⁹⁵ Indeed, pilgrim traffic appears to have a long continuity since the ancient period, although written descriptions are more forthcoming from the eighteenth and nineteenth centuries. Such references to the large number of pilgrims can perhaps be explained partly in terms of population growth compared to the previous centuries. The number of pilgrims also increased because the political authorities took an interest in regulating pilgrim traffic for generating extra income at pilgrimages. The English Company invested in road building projects primarily for military purposes but pilgrims also benefited. The new regime also made an effort to ensure safety on roads through the local zamindars and police.⁹⁶

Not only pilgrims, even general folk and labourers took to the roads in search of employment and livelihood. While traversing the Ganga Route in 1671, Marshall came across “many poor people” coming from Patna and resting in a mango orchard at high noon in May.⁹⁷ They may have been the hapless victims of the draught and famine that devastated the region around Patna in 1670. In the eighteenth century, Hodges talks of a variety of travellers moving on the road including soldiers, a company of merchants, a party of pilgrims, fakirs or mendicants with “savage appearance”, many palanquin bearers and sometimes even entire families “travelling up and down the country, forming most beautiful picturesque groups.”⁹⁸ Indeed, these roads were “the river of life,” to use Rudyard Kipling’s expression. For the travellers, infrastructure and support systems were available along the road.

Some of the travel accounts of the seventeenth and eighteenth centuries give a lively first-hand account of the roads and travelling conditions. On his way to Patna from Hugli, John Marshall followed the land route and travelled on a palanquin. When he reached Plassey, at that time a considerable town of thatched houses on a riverbank, he remarks that he “here lay this night by a Surray [*sarai*, or inn].”⁹⁹ Marshall notes passing more than fifteen *sarais* on the way Hugli to Patna, and he gives a particular account of a *sarai* at Burrajungull near Rajmahal, which was situated on the banks of the Ganga and could accommodate around eight hundred people.¹⁰⁰ More than a century later, Hodges also talks of many such *sarais* to be found along the road built by

⁹⁴ Mundy, *The travels of Peter Mundy*, 2:182–83.

⁹⁵ V. H. Jackson, ed., *Journal of Francis Buchanan kept during the survey of the districts of Patna and Gaya in 1811–1812* (Patna: Superintendent Government Printing Bihar and Orissa, 1925), 3.

⁹⁶ Nitin Sinha, “Mobility, control and criminality in early colonial India, 1760s–1850s,” *IESHR* 45:1 (2008): 27–29.

⁹⁷ Marshall, *John Marshall in India*, 114.

⁹⁸ William Hodges, *Travels in India during the years 1780, 1781, 1782 and 1783* (1794; repr. New Delhi: Munshiram Manoharlal, 1999), 31.

⁹⁹ Marshall, *John Marshall in India*, 112.

¹⁰⁰ Marshall, *John Marshall in India*, 118.

charitable people or government and maintained at public expense.¹⁰¹ Francis Buchanan, on his way to Patna from Munger, writes of Dariyapur that it “is a very large village with many shops and a very large inn.”¹⁰² Dariyapur appears to be an important halting place for the boats too as the place is frequently mentioned in the Dutch river fleet journals of the eighteenth century.

As Hodges notes, the resources and initiative for the maintenance and running of these *serais* came from the ruling elite and charitable and pious people. The authorities also earmarked the revenue of some villages for the upkeep of the inns. Local zamindars, affluent people, and religious institutions formed the support network and provided facilities to the travelling folks.¹⁰³ About the condition of roads, Hodges remarks that between Bhagalpur and Munger, a stretch of about thirty-five miles, the roads were good.¹⁰⁴ A century before Hodges, Nicolaus de Graaff had walked on the same road between Jahangeera and Ghorghat and noted that the road and the landscape were very pleasant and enjoyable for travellers.¹⁰⁵ About the modes of conveyance used and the scenery on the road, Hodges observes, “sometimes with camels loaded with goods; some of the party riding on bullocks, the females in heckerries [bullock carts?], and the younger part of the company on small horses.”¹⁰⁶ Like the river, the road too was a special little world, to use Lucien Febvre’s phrase.¹⁰⁷

Although the road was a mute geographical entity, people and animals gave it an animated appearance. For a route system to be operated by the commuters, it needed to pass through areas where resources could be easily brought. As noted above, the Ganga Route succeeded in drawing goods, services, and peoples from the drier and humid areas. While both the Ganga and south Bihar routes were used during the early modern period, the existence of the Mughal garrison towns along the former route signifies its strategic importance. In fact, the Mughals used the southern routes through the Chhota Nagpur Plateau sparingly and they had little familiarity with those terrains. Occasionally, when the Mughals needed to use the southern routes to punish rebellious chieftains or other military purposes, they depended on local chieftains to guide them across the hills and jungles. From the viewpoint of Mughal control and authority, the towns along the Ganga Route served a great strategic purpose for the Mughal Empire.

Section III: Towns

The relatively large towns such as Patna, Munger, Bhagalpur and Rajmahal were not located deep in either the productive hinterlands to the north of the Ganga or the hilly and forested zone of the Chhota Nagpur Plateau to the south of the river. Rather they

¹⁰¹ Hodges, *Travels in India*, 25.

¹⁰² Jackson, *Journal of Francis Buchanan*, 1–4.

¹⁰³ Mukherjee, “Of rivers and roads,” 28.

¹⁰⁴ Hodges, *Travels in India*, 28–30.

¹⁰⁵ De Graaff, *Reisen van Nicolaus de Graaff*, 95. The cover page of the dissertation carries the drawing of the riverbanks of the Ganga at Sultanganj, very close to Jahangeera, made by De Graaff.

¹⁰⁶ Hodges, *Travels in India*, 31.

¹⁰⁷ Febvre, *A geographical introduction*, 302.

were situated along the riverbanks that formed the interstitial bordering areas between the two regions. As I shall discuss below, these towns were instrumental for the military-administrative control exercised by the Mughals and it was from these garrison towns that the mobile forces of rebellious warlords of the southern tracts were kept in check. These towns were centres of administrative authority from which officials exacted tribute and collected revenue from the productive hinterlands.

To borrow the terminology of modern power generation, Patna, Munger, and Rajmahal were like the transformers that fed electric current through the long power-grid from the delta to upper Hindustan, the heartland of the Mughal Empire. These towns played a critical political and economic role for the Mughals; Patna and Rajmahal serving as provincial capitals, while Munger was a major garrison town. Their economic importance can be deduced from the fact that Patna and Rajmahal had mints that issued coins to facilitate commercial transactions. Patna had an economically and strategically important position astride the crossroads of rivers and overland routes. As Pataliputra had for the Magadha, Patna projected the Mughal power of the dry zone towards the agriculturally productive region north of the Ganga. Other towns along the route such as Munger, Bhagalpur and Rajmahal also derived economic and strategic importance on account of their location. On the one hand they projected Mughal power, while on the other hand they attracted resources from the surrounding regions and facilitated trading and transportation to long-distance markets.

Patna

Thanks to Patna's strategic location, Sher Shah built a fort there in the sixteenth century, and the Mughals later made it the provincial capital of Bihar suba.¹⁰⁸ Apart from being an administrative and strategic centre for the Mughals, the rise of Patna as a trading hub was closely linked to the growth of commercial traffic conducted by the Asian and European merchants. Portuguese merchants seem to have frequented Patna in the sixteenth and early seventeenth centuries and their presence was noted by the English merchants who were trying to establish a factory there in the 1620s.¹⁰⁹ Being positioned at the crossroads of the long-distance riverine and overland routes, Patna was ideally situated to emerge as a major river port. In the early seventeenth century, Central Asian merchants operating on the overland route network, connecting Lahore, Delhi and Agra sometimes led their caravans up to Patna for transshipment to river boats.¹¹⁰ Patna derived economic benefits from the merchant traffic and it gradually

¹⁰⁸ H. M. Elliot and John Dowson, eds., *The history of India as told by its own historians*, vol. 4 (London, 1872), 477–78; see also M. P. Singh, *Town, market, mint and port in the Mughal empire, 1556–1707* (New Delhi: Adam Publishers, 1985), 3–4.

¹⁰⁹ BL, APAC, IOR, G/28/1, Patna Factory Records (hereafter, PFR), vol. 1. pp. 3–4, 18. See also R. C. Temple, Bart, ed., "Documents relating to the first English commercial mission to Patna, 1620–1621," *The Indian Antiquary: A Journal of Oriental Research*, 43 (1914): 71, 73, 83.

¹¹⁰ H. K. Naqvi, *Urbanisation and urban centres under the Great Mughals* (Simla: Indian Institute of Advance Study, 1971), 80. Also BL, APAC, IOR, G/28/1, PFR, pp. 3, 5, for the trade in textiles which were taken to Lahore and thence to Persia by the Asian merchants.

became an important trading centre. The commercial activities of the European Companies led to the growth of the volume of trade handled between Patna and the port cities of Bengal. It was to procure commodities such as saltpetre, borax, musk, various types of textiles and opium that the Dutch organized their annual fleet from their factory at Hugli to Patna, as already discussed above. Patna remained one of the most prominent river port-cities in Hindustan until the mid-nineteenth century, when the railways diverted commercial traffic away from the Ganga.¹¹¹

Munger

The riverine traffic on the Ganga and the complementary overland route required one to pass through Munger, Bhagalpur, and Rajmahal before reaching Murshidabad and Calcutta. For the Mughals, Munger and Rajmahal were primarily administrative-cum-garrison towns but these also played a significant role in facilitating trade and commerce. Oldham traces Munger's antiquity back to the *Mahabharata* age, when warring Pandavas marched eastwards to kill a mighty king who lived in Modagiri.¹¹² Elsewhere he ascribes the re-emergence of Munger, the ancient Modagiri, during Muslim rule to the strategic advantages of its location. He observes that Munger commanded a narrow neck between the Kharagpur Hills and the Ganga, a major choke-point on the only practicable east-west military route as we have noted above.¹¹³

The fortress of Munger was built along a bend in the Ganga. In the rainy season the fortress projected towards a vast sheet of water northwards. Thus, from this fortress, one could easily command both the overland route and the Ganga. Thus, for the Mughals it was natural to make Munger the seat of a high ranking officer and a military station. In the seventeenth century, Sultan Shuja strengthened the fortification and about a century later it became the centre of Nawab Kasim Ali Khan's (r. 1760–64) resistance against the English Company. Indeed, Munger was of critical military and strategic significance, yet from time to time its strategic superiority was undermined by those familiar with the hill and jungle routes of the Kharagpur Hills descending from the south. After the British built the southern New Military Road in the second half of the eighteenth century, the strategic importance of the Ganga Route was undermined.

Apart from its strategic importance, Munger functioned as an administrative centre and customs post for the river and overland traffic. In the mid-seventeenth century, the Portuguese traveller Manrique witnessed the vigilance of the Mughal customs official in charge of the riverine traffic firsthand. When his boatmen tried to evade and bypass the customs office at Munger, they were severely reprimanded by the authorities.¹¹⁴ They were just as attentive to the land route. When John Marshall was passing through the Munger town he was asked his name and the official wrote it

¹¹¹ Yang, *Bazaar India*, 52.

¹¹² C. E. A. W. Oldham, "An Old Description of the Monghyr Fort," *BPP* 27:53–54 (1924): 154.

¹¹³ C. E. A. W. Oldham, *Journal of Francis Buchanan: Kept during the survey of the district of Bhagalpur in 1810–11* (Patna: Superintendent, Government Printing, 1930), v–vi.

¹¹⁴ Fray Sebastien Manrique, *Travels of Fray Sebastien Manrique 1629–1643*, vol. 2 (Oxford: Hakluyt Society, 1927), 136–37.

down.¹¹⁵ At Munger, Marshall wished to visit the fort but the authorities denied permission because two months earlier De Graaff and Cornelis van Oosterhoff secretly tried to draw the plan of the fortress, for which they were imprisoned and sent to the Nawab at Patna.¹¹⁶ But these instances of administrative alertness are from the seventeenth century. In the eighteenth century, the Ganga and the overland routes seem to be less rigorously controlled by the Mughal authorities, and many of the chieftains started asserting themselves on the river and overland routes in this area.¹¹⁷

De Graaff's description suggests that Munger was also a centre of handicrafts and a market for other merchandise as well. De Graaff informs us that before the East Gate, outside the chief customs house, there was a great market for foodstuff and other commodities.¹¹⁸ In the seventeenth century, Munger was probably not a big commercial town. It appears to have become commercially more significant in the eighteenth and nineteenth centuries. According to an estimate of the early nineteenth century, its population was approximately thirty thousand and Buchanan reported that the town was comprised of many markets such as Barabazar, Puranigunge, Faujdari Bazar, Garar or Goddard Bazar and Batemangunge.¹¹⁹ These markets handled the grain traffic as well as the commercial and cash crops produced in the region. Walter Hamilton writes that the place was famous throughout Bengal for its gardeners.¹²⁰ Other workmen included tailors, carpenters, and blacksmiths. Trade and crafts seems to have picked up in the late eighteenth and early nineteenth centuries as is evident from Bishop Heber and Major John Luard's travel accounts and Buchanan's survey report. Heber and Luard both comment on the metal work and manufactures found in the town. Luard states that the water from the hot spring "is bottled and sent down in great quantity to Calcutta" where it was taken on board ships leaving for England to supply drinking water to the passengers.¹²¹

Bhagalpur

About 58 kilometres east of Munger was Bhagalpur. The Dutch boat journals of the early eighteenth century make frequent mention of Bhagalpur as a city, but they

¹¹⁵ Marshall, *John Marshall in India*, 124.

¹¹⁶ De Graaff, *Reisen van Nicolaus de Graaff*, 91, 95–100, 107; see also Oldham, "An old description of the Monghyr Fort," 154–63.

¹¹⁷ BL, APAC, IOR, P/1/2/BPC, fo. 211. See for the reference of an unsafe road between Singia and Rajmahal around 1712. "The zamindars having Plundered the Kings own Boats and the King cannot move till after the rains." There are many such references from the early eighteenth century.

¹¹⁸ De Graaff, *Reisen van Nicolaus de Graaff*, 100.

¹¹⁹ Chatterjee, *Merchants, politics and society*, 24–25. Buchanan Eur. Mss. D83, vol.3, Oriental and India Office Records, London, cited by Kumkum Chatterjee. Bishop Heber who travelled in the early nineteenth century writes that the "shops are numerous" and the metal works so impressed him that he called it tiny Birmingham, see Reginald Heber, *Bishop Heber in northern India: Selections from Heber's journal*, ed. M. A. Laird (Cambridge: Cambridge University Press, 1971), 109. See also, L. S. S. O'Malley, *Bihar and Orissa district gazetteers: Monghyr* (Patna: Superintendent, Government Printing, 1926), 243–44.

¹²⁰ Walter Hamilton, *The east India gazetteer*, vol. 2 (London, 1828), 237–38.

¹²¹ Major John Luard, *Views in India, Saint Helena and Car Nicobar, drawn from nature and on stone* (London, 1838), n.p.

otherwise shed little light on the source or extent of its commercial strength. Given the fertile flood plains in its immediate hinterland and the town's location on the Ganga highway, Bhagalpur must have been an important trading centre. On the banks of the Ganga only a few kilometres west of Bhagalpur, Champanagar, the ancient seat of Anga mahajanapada, was a pilgrimage centre for the trade-oriented community, the Jains. Here the pilgrims assembled "in great numbers from many parts of India" during the month of February to worship Vasu Paduka.¹²² The English East India Company's army officer and orientalist scholar, William Francklin, assumed this pilgrimage to have great antiquity. At the time of his survey in the early nineteenth century, this pilgrimage centre was maintained by the maharajas of Jaipur, in western India, and the royal patronage would have had some connections with appeasing the west Indian merchants such as the Jains/Marwaris.

Buchanan Hamilton who surveyed Bhagalpur in the early nineteenth century, reports that in the *Thana* Kotwali division there were 69 dealers who controlled capitals of between 300 and 2000 rupees and were active in the retail and wholesale trade of cotton cloth and chintz. In the district town of Bhagalpur the total number of such traders was 117. These merchants also exported Bhagalpuri clothes to Calcutta and other places. Apart from them, there were four "Mogul merchants" with a total capital of one hundred thousand rupees who dealt in Bhagalpuri cloth and left Bhagalpur after purchasing their cargoes.¹²³ The instances of the commercial activities and the adequate amount of capital in the hands of these merchants indicate the degree of trade, which the town and routes sustained well into the early nineteenth century.

Rajmahal

Nearer the delta, Rajmahal was another important town on the Ganga Route. Just like Munger, Rajmahal was a garrison town of military importance. It was situated on the southern banks of the Ganga and it was protected from the south by a ring of hills, and it guarded the strategic Udhanala Pass, which gave it a strategic importance not unlike that of Munger. The foundation of the town came from the decision of Akbar's celebrated general Raja Man Singh, the governor of Bengal. As a result of repeated raids and harassment of the Mughals by the Portuguese and Magh (Arakanese) pirates, Man Singh decided to shift the provincial capital from Gaur to Rajmahal in the 1590s. At Rajmahal there already existed the ruins of an earlier fortress, which attests to the strategic significance of this place in the past.¹²⁴ However, Man Singh's initiative for making this place the provincial capital, followed by the building activities and the assemblage of an army and administrative staff, contributed to its political and economic importance.

¹²² William Francklin, *Inquiry concerning the site of ancient Palibothra, conjectured to lie within the limits of the modern district of Bhaugulpore, according to researches made on the spot in 1811 and 1812* (London, 1815), 13–15.

¹²³ BL, APAC, IOR, Mss. Eur. D 83, Buchanan Hamilton Ms, Index to the Map, Bhagalpur, pp. 2–12.

¹²⁴ James Heitzman, *The city in south Asia* (London: Routledge, 2008), 77; Eaton, *The rise of Islam*, 149.

Before these initiatives could increase Rajmahal's profile as a major town, the provincial capital was relocated to Dhaka in 1610, only to be restored to Rajmahal by Sultan Shuja, governor of Bengal, in 1639. It is believed that during Shuja's viceroyalty the town attained great importance and functioned as the metropolis of the Bengal and Bihar provinces.¹²⁵ A new round of building activity began when Shuja took up residence there and built an enormous palace. De Graaff was particularly impressed with the artwork, paintings, and fountains of the palace, and called it a "wonder of this land."¹²⁶ Marshall also noted that "[t]he towne is very large and hath many stone houses terrassed at top."¹²⁷ Building in Rajmahal continued in the latter half of the seventeenth and eighteenth centuries, but the city began to decline in the later eighteenth century, when Calcutta, Murshidabad and other towns in the delta became more important. In the early nineteenth century Buchanan Hamilton commented upon the ruins of Nagesvara Bag and Phulbag, the *makbara* or tomb of the widow of Shaista Khan, which he describes as "a handsome building", the monument of Mirza Muhammad and the palace built by Kasim Ali Khan during the mid-eighteenth century.¹²⁸ These buildings and the *bags*, or gardens, had added grandeur to the town of Rajmahal and given it the lustre of the aristocratic quarters during the seventeenth and eighteenth centuries.

In the age of maritime commerce, the trade passing through the Ganga and the overland route was controlled and regulated from Rajmahal. In the year 1640, Manrique witnessed hectic activities and a huge assemblage of boats from all the surrounding regions at Rajmahal on account of the presence of Sultan Shuja at the court in that "City." He was very impressed to see "enormous number of vessels and also the great crowd of people" which made Rajmahal "an attractive and beautiful City." There was an abundance of every kind of merchandise and foodstuffs were very cheap. It was also a place where river travellers could clear through customs.¹²⁹ When Tavernier

¹²⁵ Hamilton, *The east India gazetteer*, 2:444. Around 1650 Rajmahal had become the focal point of the diplomatic activities of the Dutch and English. The Dutch chief merchant, Thomas van Cuijck, was successful in procuring a *farman* (a royal order) for the free and unhindered transportation of their merchandise between Hugli and Patna from Prince Shuja in 1646, see NA, VOC, Inv. Nr. 1162, Missive door de oppercoopluijden Pieter Sijme, ende Jacob Junius van Masulipatnam aen de edele heren raden van India naer Batavia, 17.04.1746, see "Translaet uijt fierman bij den Prince Sjoesa," fo. 84r. The Englishman Mr. Gabriel Boughton, who was surgeon to the Prince Shuja at Rajmahal and was endeavoring to get a farman for the English Company which "may outstrip the Dutch in point of Privilege and freedom, that soe they may not have cause any longer to boast of theirs." Rajmahal remained an important centre for the provincial government in the first half of the eighteenth century as we find the English in Rajmahal carrying out hectic negotiations with the authorities to secure the free trade rights in Bengal after the death of Aurangzeb. When Azim-sh-shan became the Mughal emperor and Prince Farrukhsiyar was representing him at Rajmahal, the English with the help of their trusted aid and governor of Hugli, Zain-ud-din Khan, were successful in obtaining a favourable letter from Farrukhsiyar in 1710. See C. R. Wilson, *The early annals of the English in Bengal: Being the Bengal public consultations for the first half of the eighteenth century*, vol. 1 (London, 1895), quote is from pp. 26–27; about Farrukhsiyar at Rajmahal see p. 186.

¹²⁶ De Graaff, *Reisen van Nicolaus de Graaff*, 93.

¹²⁷ Marshall, *John Marshall in India*, 70.

¹²⁸ Oldham, *Journal of Francis Buchanan*, 74–77.

¹²⁹ Manrique, *Travels of Fray Sebastien Manrique 1629–1643*, 2:135.

passed through Rajmahal in 1666, the provincial capital had been relocated to Dhaka yet again, partly because the river channel had shifted away from the city and because the authorities needed to relocate their armies to be in a better position to act against the perennial troublemakers, “the King of Arakan and many Portuguese bandits.”¹³⁰ Although Tavernier describes how the considerable trading activities at Rajmahal in former times had diminished after the capital’s removal to Dhaka, the VOC and the English Company still maintained their representatives in the town in the 1670s. The English had maintained a small agency there for converting bullion into coined rupees at the Rajmahal mint.¹³¹ The Afghan convulsions in 1696–1697 destabilized the towns of the delta including Rajmahal and Maldah, but soon the Mughals were able to restore order.¹³² In political terms, such convulsions certainly exposed the vulnerability of the Mughal authority as well as difficulties of wielding strict control over the delta. The fortunes of Rajmahal seem to have been adversely affected in the late-eighteenth century when it ceased to be the strategic centre for controlling the river and overland traffic for the Mughals and was superseded by the towns in the delta which had become more attractive to traders and merchants.¹³³

The towns discussed above were located at the fringe of the agriculturally fertile humid zone to the north of the Ganga. In the fertile northern plain, there were relatively small local towns such as Muzaffarpur, Darbhanga, Hajipur, Chhapra, Purnia and so on, but their existence depended on their ties to larger towns such as Patna, Munger and Murshidabad. Similarly, southern towns such as Gaya and Lakhawar maintained their connections with the bigger towns located on the Ganga Route. The communication between the smaller towns and those located on the Ganga Route was essential for trade and exchange.

Conclusion

In the pre-modern period in South Asia as elsewhere in the world, riverine and overland routes facilitated the movements and flow of people, ideas and merchandise. The key features in the development of the route systems were the interactions and interdependence of the contrasting ecological zones. As already noted, the ancient Uttarapatha and the Trunk Road of the Mughal and British periods may have constituted something of a dividing line between the dry and humid zones. As the main route passed through the transitional areas, the goods, services and people were drawn to it from both ecological zones. As a result, the transitional zone became the seat of pre-modern state formation in South Asia, a pattern discernible already in the age of

¹³⁰ Jean-Baptiste Tavernier, *Travels in India*, ed. William Crooke, vol. 1 (London: Oxford University Press, 1925), 102.

¹³¹ Wilson, *The early annals*, 1:53.

¹³² Wilson, *The early annals*, 1:148.

¹³³ For a description of the deserted ruins of Rajmahal towards the end of the eighteenth century, see Thomas Twining, *Travels in India*, 16–19. See also James Rennell, *Memoir of a map of Hindoostan; or the Mogul empire: With an introduction, illustrative of the geography and present division of that country* (London, 1788), 60–61.

mahajanapadas in the mid-first millennium BC. The case study of the Ganga Route further highlights the historical importance of the transitional zone in Bihar.

In the early modern period, the transitional zone in Bihar formed the real hub of economic growth. The fertile Ganga plain supplied commercial goods, and surplus food production not only supported dense population but also those involved with crafts and non-agricultural sectors of the economy such as transport. Economically the most important segment of “greater Bengal” constituted the floodplains of the Ganga from Patna through Rajmahal to Hugli on the Bhagirathi.¹³⁴ The emergence of this segment as an economically and commercially dynamic zone owed in large measure to the Mughal political integration since the late sixteenth century. Thus, political, economic and environmental factors necessitate a closer examination of this transitional zone in Bihar.

The micro-level interactions between the dry and humid zone outlined in Chapter 2, were amplified when we find the humid and productive parts of the eastern plain interacting with the maritime zone on a large scale during the early modern period. We discussed above the impressive efforts of the Dutch merchants on the Ganga River to reach the productive hinterlands and buy commodities with bullion there. Other Europeans, notably the English and French, and indigenous merchants actively participated in the economic life of the eastern Ganga plain and purchased commodities from Bihar for the long-distance markets primarily with cash. As a result of the growing demands for goods produced in the region, the economy of the eastern Ganga plain became increasingly monetized. Given the importance of liquidity in facilitating revenue collection and payment to the military and bureaucracy, the state could not remain aloof from the commercial activities of the merchants and it tried to promote production and trade. Did the bullion flows and increasing prosperity of the region create the circumstances which, in the long run, altered the political trajectory of eastern India? In order to explain this question, the next chapter begins to describe the commercial economy of the Ganga plain.

¹³⁴ Tirthankar Roy, “Where is Bengal? Situating an Indian region in the early modern world economy,” *Past and Present* 213 (2011): 115–146, see p. 126.

Chapter 4

The *Ganga-economy*: Peasant-Producers and Commodities

*Like Two great arms the Indus and Brahmaputra completely clasp themselves round the Himalayan Ranges so that all the rain that falls and all the snow that melts whether on their northern or southern flanks, is bound to come into India. Geographically the Himalayas belong as much to Tibet as to India, but these river systems bring all the benefits of these mountains to India alone.*¹

*Patna réunit aujourd'hui tous les avantages que l'entrepôt du commerce et le siège du gouvernement peuvent procurer à une ville.*²

Introduction

In the previous chapters we have seen how interactions between the forces of drier and humid ecological zones have historically shaped the economic and political processes on the Ganga plain. This chapter delves deeper into the economic interaction between these ecological zones by focusing on the contacts between sedentary society of the Ganga plain's productive hinterlands and the mobile people from the maritime zone. This exercise aims to give the reader a broad view of the commercial economy of Bihar, juxtaposing the hinterland with the overseas commerce of the European Companies. The present chapter therefore discusses the producers of commodities, such as peasants, saltpeter producers and weavers, and those involved with the exchange economy, such as brokers, suppliers and intermediary merchants. The producers of goods and the merchants and brokers were active agents of the commercial economy of the region. Along with human agency, this chapter further describes the production of and growing demand for the two most important commodities, namely opium and saltpeter. It shows the economic potential of the region, which was perfectly capable of meeting the needs of an increasingly globalized economy. As we already noted in Chapter 3, during the early modern period the Ganga River emerged as a focal point of the economy and provided a fluvial link between the coast and the hinterland and facilitated large-scale maritime commerce in the commodities of the region. However, without human ingenuity, entrepreneurship and an infusion of liquid money a river in

¹ Cameron Morrison, *A new geography of the Indian empire and Ceylon* (London: Nelson, 1926), 67 cited in Kingsley Davis, *The population of India and Pakistan* (New York: Russell & Russell, 1968), 9.

² Comte de Modave, *Voyage en Inde du Comte de Modave, 1773–1776 (Nouveaux Mémoires sur L'état Actuel du Bengale et de L'Indoustan)*, ed. Jean Deloche (Paris: École Française d'Extrême-Orient, 1971), 130. Patna today meets all the benefits of trade and the warehouse that the seat of government can bring to a city.

itself cannot ensure a thriving commerce and prosperity. In a way the early modern economic dynamic on the Ganga plain is a familiar one. As we have discussed in Chapter 2, the migration and settlement of the Indo-Aryan speakers with their cattle wealth transformed the agricultural economy. Yet again, after the horse-warrior revolution the arid zone warriors and traders brought about large scale changes in the agricultural and commercial economies. In the early modern period, when commerce boomed the river became a far more important source of riches and profit. When exposed to mismanagement and neglect the river contributed to poverty by causing recurring floods and devastations of large magnitude.³

In modern India Bihar is considered to be one of the poorest provinces. The cause of its poverty has generally been attributed to many factors including a lack of infrastructure and resources. However, before Bihar was split into two provinces, the region was rich in mineral resources, accounting for the forty percent of India's total production, and the roots of its impoverishment can be sought in the policies of the later colonial and post-colonial regimes.⁴ In the past, especially in early modern period, Bihar was one of the most productive and resourceful regions of South Asia. Its local economy thrived thanks to the productivity of the land, mineral and crafts productions, and the robust long-distance trade through the river and overland routes. In the seventeenth and eighteenth centuries, the source of prosperity for Bihar can easily be located in its ability to cater to the external demand for its resources and a regular infusion of precious metals, which catalysed the productivity, and industriousness of the people. I suggest that it was primarily the interaction between the mobile resources such as bullion brought in by the long-distance merchants and the productive capacity of the region to keep up with external demands that ensured a booming economy during the age of maritime commerce. Because of the coast-centred approach of maritime historians, the Ganga River has been glossed over in the treatment of the economy of the eastern plain encompassing Bihar. As I hope to demonstrate, the two contrasting ecological spheres, the hinterlands and the maritime zones, interacted in ways that generated wide-ranging economic and political results in the early modern period. A review article by David Washbrook summarizes the problems of the eighteenth-century historiography of South Asia and concludes that the chief difficulty

³ Praveen Singh, "The colonial state, zamindars and the politics of flood control in north Bihar (1850–1945)," *IESHR* 45:2 (2008): 239–59.

⁴ Anthropologists have also documented the grim poverty in contemporary Bihar. For Bihar accounting for forty percent of total mineral resource of India, see Tiane Doan de Champassak and Arvind N. Das, "Bihar's lawless ways," *UNESCO Courier* (Feb. 1999): 3–8. For early information on the exploitation of mines in Ramghur to the south of the Ganga, see BL, APAC, IOR, P/70/16, Bengal Board of Revenue Proceedings, Calcutta the 28th June 1786. Further, in 1816, the Commissioner J. Deane reported that "a considerable quantity of Iron, Tale [Table?] Cutlery, Guns, Swords, Kaunch and other articles from Monghyr, and the Hills to the South in their passage to Napaul and the countries on the North side of the Ganges." See, BL, APAC, IOR, P/111/68, BBRP (Customs), Camp Culwar Zillah Shahabad the 31st August 1816.

arises from reading history backwards and imputing nineteenth- and twentieth-century historical developments to the eighteenth century.⁵

The literature dealing with the economic and political history of the eighteenth century is highly polarized and presents divergent and even contradictory interpretations of the region's political economy. Old imperialist historiography's depiction of political chaos and economic decline in the eighteenth century often resonates in nationalist historiography. While imperialist historiography depicts a gloomy picture of the eighteenth century in order to justify colonial ascendancy to power, nationalist historiography utilizes the same myth to lament the colonial takeover. In both these historiographical traditions, history itself becomes victim of ideological appropriation while actual events, long-term economic, and political processes and their infrastructural basis, the areas of growth and pockets of decline, marginalized groups and collaborators, and the advantages and disadvantages of the new regime hardly enter into debate.

Although good progress has since been made in our understanding of such problems as the continuity of several Mughal institutions into the colonial period, the expansion of agriculture and commercial economy, the question of Mughal decline still eludes scholarly agreement.⁶ Research by the so-called Aligarh School and "revisionist" historians on the nature of polity and economy in eighteenth-century South Asia and factors leading to Mughal decline remain inconclusive. While older historians failed to provide firm and solid evidence of decline and degeneration in the economy and polity after the death of Aurangzeb in 1707, revisionist scholars, too, admit that "treatment of the eighteenth century is hypothetical."⁷ As the polarity of this debate has been discussed in a recent work by Binay Bhushan Chaudhuri, it hardly needs repetition here. The present study strives to furnish evidence from the hitherto under-utilized Dutch archives to improve upon the inadequacies of the imperialist, nationalist and revisionist scholars' understanding of the eighteenth-century political economy. In the last chapter of this study, I shall review the question of Mughal decline by examining the weakening imperial control over the Ganga in the eighteenth century.

In this chapter, once again I zoom in on Bihar which forms the crossroad between Hindustan and the Bengal delta, and endeavour to underline the solid infrastructural basis of the economy from a relatively long-term perspective. It defies

⁵ D. A. Washbrook, "Eighteenth-century issues in South Asia," *JESHO* 44:3 (2001): 372–83. See also for the problems of projecting modern geographical categories such as Bengal for explaining early modern economy of the region, Tirthankar Roy, "Where is Bengal? Situating an Indian region in the early modern world economy," *Past and Present* 213 (2011): 115–146.

⁶ See in particular Seema Alavi, ed., *The eighteenth century in India: debates in Indian history and society* (New Delhi: Oxford University Press, 2002) and P. J. Marshall, ed., *The eighteenth century in Indian history: evolution or revolution?* (New Delhi: Oxford University Press, 2003); see also a review essay dealing with the questions on eighteenth century South Asian history, Robert Travers, "The eighteenth century in Indian history: A review essay," *Eighteenth-Century Studies* 40: 3 (2007): 492–508.

⁷ Binay Bhushan Chaudhuri, *Peasant history of late pre-colonial and colonial India*, in the series, *History of science, philosophy and culture in Indian civilization*, genl. ed. D. P. Chattopadhyaya, vol. 8, pt. 2 (New Delhi: PHISPC Publications, 2008), 49–100.

logic that such an apparently robust infrastructure could simply collapse in the span of a few decades following the colonial takeover in the second half of the eighteenth century. This is precisely one of the problems that I will try to tackle in the course of this study. The present chapter is organized in two parts. The first part describes the human agency involved in the production processes. It estimates the total population of early modern Bihar and projects a possible figure for the urban population. Subsequently, it describes the life and work of peasants, *koeris* (the caste which grew opium), *nunias* (the caste-members of which worked as saltpeter scrapers), weavers, boatmen, and militia. The seasonality of the labour market in agricultural and non-agricultural sectors is described in the context of the environmental predispositions of different areas within Bihar. The second part discusses specific commodities and tries to situate them in their respective historical contexts. Each of the major commodities has its own historical trajectory in terms of its significance as a trade item for long-distance markets. Overall, this chapter buttresses the point that these commodities paved the way for an expanded money supply in the region. In the course of time, growing prosperity engendered political and economic realignments that characterized much of the eighteenth century, a story to be addressed in the rest of this study.

Section I: Labour Market

The previous chapter discussed the natural arteries of communication linking the urban centres and the fertile humid zones of the Ganga plain. While the productive hinterlands and arteries of communications were necessary preconditions, the mere existence of such a natural infrastructure did not lead to a booming economy. The transformation of productive zones into a vibrant economy depended on at least three more factors: an industrious population ready to supply labour, demands generated by the supra-regional and global economy and a constant infusion of liquid money. The labour force was deployed in agricultural and craft productions in order to meet the growing demands of food and the marketable commodities that were readily vendible against hard cash. Therefore, in the following paragraphs, I shall discuss the population first.

Population Estimates

A cursory glance at the modern population map of India shows the humid zones of the Ganga plain, especially the tract between 80 and 88 degree longitude to the north of Ganga, to be one of the most densely populated regions in South Asia.⁸ We do not have population data for the early modern period but the qualitative evidence strongly suggests a high population density in the areas of the rice-based economy on the Ganga plain. Various population estimates of early modern India are fraught with problems as they are based on inferential evidence. Because the pre-colonial regimes in South Asia

⁸ O. H. K. Spate and A. T. A Learmonth, *India and Pakistan: Land, people and economy* (London: Methuen, 1972); see the population map facing p. 121. According to the 1961 census, the population density was more than 750 people per square kilometre.

never attempted a head count of the subject population, the demographic debate is open to conjecture, yet in spite of various gaps in quantitative evidence scholars have tried to estimate the population of South Asia. The British colonial administrator-scholar, W.H. Moreland, calculated the population of the whole of India at the death of Akbar to be about 100 million people.⁹ Moreland's method was based on the density of cultivated area and was critiqued by Irfan Habib and Shireen Moosvi, both of whom suggest figures of between 136 and 150 million for South Asia in 1600.¹⁰ This figure is an upward revision of Kingsley Davis's estimate of 125 million.¹¹ Rejecting Davis's stagnant population hypothesis for the Mughal period, Habib suggests that the population actually grew until the eighteenth century at the annual compound rate of 0.14, which was lower than the annual compound rate of 0.21 percent during the nineteenth century. It is generally agreed by the scholars that the population of South Asia (comprising contemporary India, Pakistan and Bangladesh) would have been around 200 million in 1800.¹²

There are several estimates of population for the Bengal Presidency. By the end of the eighteenth century, British officials attempted to calculate the population of Bengal, Bihar, and Banaras using many indirect calculations. The population totals range from a low of 22 million to a high of over 39 million, with many figures in-between for the years 1789 and 1801. In 1789, based upon an "opinion survey" of district collectors, the population was estimated to be 22 million, while William Jones guessed it to be 24 million. According to Walter Hamilton, the figure stood at 39,679,000 for Bengal, Bihar, and Banaras at the turn of the century.¹³ In the 1790s, Bengal civil servant Henry Thomas Colebrooke employed various methodologies from land under tillage to the consumption of salt and food grains to estimate the macro regional population of Bengal and Bihar. Generalizing on the survey of leaseholders and ground rent payers in Purnia district, and taking five persons per family,

⁹ W. H. Moreland, *India at the death of Akbar: An economic study* (1920; repr. Delhi: Atma Ram & Sons, 1962), 9–21.

¹⁰ Shireen Moosvi, *The economy of the Mughal Empire c. 1595: A statistical study* (Delhi: Oxford University Press, 1987), 395–406; see also Shireen Moosvi, "The Indian economic experience 1600–1900: A quantitative study," in *The making of history: essays presented to Irfan Habib*, ed. K. N. Panikkar, Terence J. Byres and Utsa Patnaik (London: Anthem Press, 2002), 329–31; Irfan Habib, "Population," in *The Cambridge economic history of India, c. 1250–c. 1750*, ed. Tapan Raychaudhuri and Irfan Habib, vol. 1 (Cambridge: Cambridge University Press, 1982), 163.

¹¹ Davis, *The population of India and Pakistan*, 26.

¹² Habib, "Population," 165–67; see also Leela Visaria and Pravin Visaria, "Population (1757–1947)," in *The Cambridge economic history of India, c. 1757–c. 1970*, ed. Dharma Kumar, vol. 2 (Cambridge: Cambridge University Press, 1983), 466, for different figures for the year 1800 ranging from a low of 139 million to a high of 214 million. Scholars such as Morris D. Morris also accepts 200 million population for the beginning of 1800; see his "The growth of large-scale industry to 1947," in *The Cambridge economic history of India*, ed. Kumar, 554.

¹³ Walter Hamilton, *The east India gazetteer; containing particular descriptions of the empires, kingdoms, principalities, provinces, cities, towns, districts, fortresses, harbours, rivers, lakes, &c. of Hindostan, and the adjacent countries, India beyond the Ganges, and the eastern archipelago; together with sketches of the manners, customs, institutions, agriculture, commerce, manufactures, revenues, population, castes, religion, history, &c. of their various inhabitants*, vol. 2 (London, 1828), 190.

Colebrooke calculated 203 people per square mile for the entire area of the *Diwani* provinces. According to this method, 119,217 square miles area of Bengal and Bihar gives a figure of a little over 24 million.¹⁴ Historians like Sumit Guha and Rajat Datta have suggested different estimates for the Bengal Presidency. Guha estimates its population to be a little over 33 million in 1790-92 and close to 36 million in 1800-02; Datta gives the figures of 22 million for 1789 and 27 million for 1800. Guha estimates that the population grew at about 1 percent annually between 1789 and 1822, while Datta suggests a rate of more than 2 percent.¹⁵ A recent paper from the Population Studies Unit of the Indian Statistical Institute suggests a moderate rate of 0.5 percent for Bihar and 0.8 percent for Bengal during the second half of the eighteenth century.¹⁶

In order to arrive at a reasonable population figure for Bihar we may rely on the method of calculating backwards from the census figure of 1901. Assuming that the annual rate of population growth was the same as the sub-continental growth rate (i.e. 0.21 percent) for the nineteenth century, we can gain a general idea of the population of Bihar at the turn of the century. According to the 1901 census, Bihar had 27 million people. By deducting the 21 percent growth during the nineteenth century, we are left with a population estimate of about 22 million in 1801. Given the fertility and relatively higher population density of Bihar, the province would have had a higher growth rate than the sub-continent as a whole. Adjusting this disparity, Mahalanobis and Bhattacharya conclude that Bihar would have had around 20 million souls at the turn of the century.¹⁷ If Habib's assumption of 0.14 percent compound annual population growth for the seventeenth and eighteenth centuries is correct, then Bihar's population in 1700 would have been around 17 million and a little more than 14.5 million in 1600. In other words, Bihar had almost ten percent of the total population of the subcontinent at the death of Akbar, and probably the same share two hundred years later.¹⁸

¹⁴ Henry Thomas Colebrooke, *Remarks on husbandry and internal commerce of Bengal* (London, 1806), 14–30; see also Miscellaneous Tracts, “On population of Bengal,” *The Asiatic annual register, or, a view of the history of Hindustan, and of the politics, commerce and literature of Asia, for the year 1802* (London, 1803), 41–46.

¹⁵ Rajat Datta, *Society, economy and the market: commercialization in rural Bengal c. 1760–1800* (New Delhi: Manohar, 2000), 265–66; Sumit Guha, *Health and population in South Asia: From earliest times to the present* (New Delhi: Permanent Black, 2001), 37–42.

¹⁶ Rama Deb Roy, “Population of the province of Bengal, 1751–1801,” Population Studies Unit, Indian Statistical Institute, New Delhi, internet resources at: http://dmo.econ.msu.ru/epc2001_history/Authors/Rama/RamaRoy.htm (accessed on 20 Feb. 2012).

¹⁷ P. C. Mahalanobis and D. Bhattacharya, “Growth of Population in India and Pakistan, 1801–1961,” *Artha Vijnan* 18:1 (1976): 1–10.

¹⁸ Assuming 200 million for 1800, Bihar had a little over 10 percent of the total Indian subcontinent's population, see Morris, “The growth of large-scale industry to 1947,” in *The Cambridge economic history of India*, ed. Kumar, 554. According to the 1991 census, Bihar (with Jharkhand) had 86.3 million people while the total Indian population was 891.9 million. According to these figures, Bihar roughly approximated the 10 percent population figure, although adding Pakistan and Bangladesh would lower it somewhat. For the population of Bihar in 1991, see <http://www.lib.virginia.edu/area-studies/SouthAsia/bihar/population.html> (accessed 22 Feb. 2013) and for the Indian total population in 1991, see http://data.worldbank.org/indicator/SP.POP.TOTL?page=4&order=wbapi_data_value_2008%20wbapi_data_value%20wbapi_data_value-first&sort=desc (accessed on 22 Feb. 2013).

Urban Population

According to Habib, in the Mughal Empire at least fifteen percent of the population lived in urban centres, which he defines as a habitation site with more than 5000 people.¹⁹ James Heitzman, whose smallest “urban” units constituted of parganas with 3000 inhabitants, agrees with Habib’s fifteen percent estimate.²⁰ If this is accurate, and assuming a total population of 17 million, the urban population of Bihar in 1700 would have been more than 2.5 million people. In order to verify this I shall make an attempt to calculate the population of the primary urban units such as parganas, *qasbas* (small market towns), *sarkars* (revenue districts) and larger urban centres such as Patna. Scholars have suggested that in Bihar there were 246 parganas in 1685, during the reign of Aurangzeb. These parganas were the lesser administrative units of the Mughal Empire where the lower-ranked civil and military officials were stationed, merchants transacted their business, and artisans performed their duties. They were the centres where agrarian and local craft produces were converted into money for taxation. Following Heitzman’s estimates for the population of the parganas, and supposing that the figure of 246 parganas remained constant till 1700, there would have been around 738,000 people living in the parganas. There were eight sarkars of at least about 20,000 people in the Bihar suba, for a total of around 160,000 people. We do not have a precise figure for the number of secondary towns such as Chhapra, Daulatganj, Siwan, Revelganj, Fatuha, Mau, Lakhawar, Nawada, and Gaya, but if we assume there were twenty with an average population of 10,000, they would have made for another 200,000 urbanites.²¹ In 1700 Patna would have had at least 200,000 residents if not more. Based on these figures, imperfect as they are, the total urban population of Bihar would have been about 1.3 million at the turn of the eighteenth century or roughly 7.5 percent of the total population of the province. If the urban and rural proportion of population in 1901 is any sort of guide, then it appears that in Bihar and Bengal the urban population constituted of only 5 percent at the turn of the twentieth century while other parts of the subcontinent had a proportionally much higher urban population.²²

¹⁹ Habib, “Population,” 163–71; see also Satish Chandra, *Medieval India: From Sultanat to the Mughals—Mughal Empire (1526–1748)*, pt. 2 (New Delhi: Har-Anand, 2006), 364–65.

²⁰ James Heitzman, *The city in South Asia* (London: Routledge, 2008), 79.

²¹ Anand A. Yang, *Bazaar India: Markets, society, and the colonial state in Gangetic Bihar* (New Delhi: Munshiram Manoharlal, 2000), 178. For Chhapra, Yang gives a figure of 43,500 in 1813 and for Siwan around 8,840 in the same year. Daulatganj, near Chhapra was another secondary level urban centre where the VOC had rented a place for which it paid f.206–8 as rent (about 160 rupees), see NA, VOC, Inv. Nr. 2849, “Memorie ...ontworpen en nagelaten aan den Heer Adriaan Bisdom aankomende Directeur der Bengaalsche Directie door den oud eerste secretaris van welm: Haar Hoog Edelens en afgaande Directeur Louis Tallefert, omme zig daar na in het manieiment van zaken zo verre te reguleeren, als zijn edele behangen of dienstig oordeelen zal tot dat men tijding van Haar Hoog Ed: goedvinden aangaande dies inhoude zal ontfangen hebben,” (hereafter, MvO Luis Tallefert to Adriaan Bisdom), signed by Louis Tallefert at Hugli on 27.10.1755, fo. 157v.; the disparity in the population figures of Chhapra (43,500) and Siwan (8,840), as well as some overlap in their function as administrative centres or their being parganas or qasbas, can be remedied by taking a median population of 10,000 for all secondary level urban centres.

²² Visaria and Visaria, “Population (1757–1947),” 517.

One may suspect that the trend was not different in the earlier centuries if we consider the relative dense population in the areas of predominantly rice-based economy.

The basic structure of the most of the parganas, sarkars and other urban centres remained in place in course of the eighteenth century so the urban population in 1800 was probably around 7.5 percent, too. In the eighteenth century, shifts and changes often were counter-balanced between growth and decline. For example, the process of urbanization in Patna entailed a number of realignments in the course of the period. Many trading centres within the city lost out while others emerged as new loci of economic activity. The rise of Marufganj at the cost of Nawabganj and Mandiganj has been explicated by a change of patron. Nawab Ikramdaula had founded Marufganj in 1764 and later the English East India Company patronized it. In the late eighteenth and the nineteenth century, Marufganj received most of the boats laden with goods²³ and presumably attracted more people and settlements there. In other parts of Bihar, too, such readjustments have been documented in recent studies that underscore changes in the rural economy and local urban centres such as qasbas and *ganjs* (grain-markets), which were developing into relatively larger economic centres in a rural setting.²⁴ Towns such as Munger, Bhagalpur, and Rajmahal each had populations of more than twenty thousand in the first decade of the nineteenth century.²⁵ Even if 7 to 8 percent people lived in the urban centres of Bihar, the livelihood and material requirements of an overwhelming number of rural inhabitants were connected to the urban centres. For example, a part of the population would have lived alternatively in rural and urban areas depending upon the requirements of the agricultural and urban economies and the employment available there.

If we can rely on the figures of foreign travellers, we get some idea of the population density of the Patna city. The earliest such estimation of Patna's population comes from the Portuguese traveller Sebastian Manrique who puts the figure at 200,000 people around 1640, not including "the great number of strangers" drawn to the town

²³ Yang, *Bazaar India*, 99.

²⁴ Kumkum Chatterjee, *Merchants, politics and society in early modern India: Bihar, 1733–1820* (Leiden: Brill, 1996), 19–26. *Ganjs* like Daudnagar in Gaya, Dimia Gola and Hanumanganj in Purnia were fairly large markets in the early nineteenth century. They had substantial hinterland in the surrounding village areas which provided services and commodities.

²⁵ The population of Munger was estimated to be 30,000 in the early nineteenth century, see *The tourist or sketch book of the times*, 1:33 (Monday, March 25, 1833) in *The tourist: A literary and anti-slavery journal under the superintendence of the agency anti-slavery society* (London, 1833), 269; see also Reginald Heber, *Bishop Heber in northern India: Selections from Heber's Journal*, ed. M. A. Laird (Cambridge: Cambridge University Press, 1971), 109; S. Bhattacharya, "Eastern India," in *The Cambridge economic history of India*, ed. Dharma Kumar, vol.2. (Cambridge: Cambridge University Press, 1983), at p. 278 Bhattacharya cites Buchanan's figure of 30,000 population for the towns of Munger and Bhagalpur. For Bhagalpur the number of house in the town was assumed to be 5000 in the early nineteenth century, see Robert Montgomery Martin, *The history, antiquities, topography, and statistics of eastern India; comprising the districts of Behar, Shahabad, Bhagulpoor, Goruckpoor, Dinajepoor, Puraniya, Rungpoor, & Assam in relation to their geology, mineralogy, botany, agriculture, commerce, manufactures, fine arts, population, religion, education, statistics, etc.* in 3 vols., vol. 2, *Bhagulpoor, Goruckpoor, and Dinajepoor* (London, 1838), 27.

by its vast trade.²⁶ A few decades later, John Marshall remarked that between 90,000 to 135,000 people died in and around Patna in the terrible famine of 1671. Marshall claims that he received the figure of dead people from the “Cotwall Chabootry” (the office of the local authority) and therefore it can be relied upon.²⁷ In any case, the huge death toll in and around Patna points to the population density of the area. Thomas Twining, who passed through Patna in the late eighteenth century, assumed that city had 300,000 inhabitants.²⁸ In the early nineteenth century Francis Buchanan estimated the population of Patna to be 312,000 as he computed 52,000 houses with six members each.²⁹ Anand Yang has suggested that this figure might not be too far from reality as the population of Patna was drawn from a twenty square mile area. The censuses of the late nineteenth century counted people in area only in the nine square mile core of city, which likely explains the apparent decline in Patna’s population.³⁰

Apart from the large number of inhabitants at Patna, thousands of people visited the town from the surrounding areas. Quite a large number of people depended on the markets, local as well as regional, for cloth, agricultural tools, spices, salt, areca nuts, vermillion, camphor, coconuts, conch shell, and other necessities.³¹ At the same time, peasants living in the villages produced commodities such as saltpeter, opium, cottons, ghee (clarified butter), and grains to be collected by the merchants based at the local and regional level markets. Before discussing the region’s main exports, I shall briefly mention the peasant-producers who were closely linked with the exchange economy.

Peasants and other Servicemen

Given the nature of our data, it is impossible to say exactly how many people were employed in agricultural and craft productions or as militiamen or sepoys, porters, nunias, manjhis and so on. Yet, the fragmentary evidence suggests their ubiquitous presence in and around the production and marketing centres. Often the manufacturers of commodities were peasants who combined their food production activity with craft-

²⁶ Fray Sebastien Manrique, *Travels of Fray Sebastien Manrique, 1629–1643: A translation of the Itinerario de las Misiones Orientales*, intro. and notes by Lt.-Col. C. Eckford Luard and Father H. Hosten, S.J. (Oxford: Hakluyt Society, 1927), 140.

²⁷ John Marshall, *John Marshall in India: Noted and observation in Bengal 1668–1672*, ed. Shafaat Ahmad Khan (London: Oxford University Press, 1927), 152–53.

²⁸ Thomas Twining, *Travels in India a hundred years ago with a visit to the United States being notes and reminiscences by Thomas Twining a civil servant of the Honorable East India Company*, ed. William H. G. Twining (London, 1893), 135.

²⁹ Francis Buchanan, *An account of the Districts of Bihar and Patna in 1811–1812*, vol. 1 (Patna: Bihar and Orissa Research Society, n.d.), 61. Naqvi also discounts the possibility of any population decline in Patna in the eighteenth century; see Hameeda Khatoon Naqvi, *Urban centres and industries in upper India, 1556–1803* (Bombay: Asia Publishing House, 1968), 126.

³⁰ Yang, *Bazaar India*, 93–100.

³¹ NA, VOC, Inv. Nr. 9615, “Memorie wegens diverse verkoghts coopmanschappen, mitsgaders hare prijzen en quantiteit ten comptoir Pattena verhandeld in den jare [1675–1684],” Hugli, 20.09.1684, pp. 291–93, for the commodities sold in Patna by the VOC between 1675 and 1684; see also Tilottama Mukherjee, “Markets in Eighteenth Century Bengal Economy,” *IESHR* 48:2 (2011): 167–68.

production.³² As will become evident from our discussion below, the majority of service providers such as boatmen, porters, militia, and peter-men were also drawn from the peasantry. First I shall begin with the opium-growing peasants of Bihar, the *koeris* or *khoijdrij* of the Dutch sources. Unfortunately we lack precise information on the number of opium growers in the seventeenth and eighteenth centuries. However, if nineteenth-century colonial reports can be taken as a guide we may arrive at a plausible estimate of the number of people involved with opium culture in previous centuries.

Under the Banaras Opium Agency, the aggregate area of land under poppy cultivation was 107,823 *bigha* (a measurement of land ranging from 22,500 to and 27,225 square feet, with considerable regional variations) in 1849–50 and the total produce of opium was 18,191 *man* (a variable measure of weight; the Patna *man* weighed 72½ Dutch pounds or 35.7 kilogram).³³ The number of *lumberdars* (primary contractors) contracting with the Company was 21,549 and there were 106,147 under-cultivators. If we assume each cultivator had family of five, then more than half a million people were directly linked to opium cultivation under the Banaras Opium Agency alone.³⁴ I could not find similar data for the Bihar Opium Agency, but *The Baptist Magazine for 1846* gives useful clues about both the total produce and the total area under opium cultivation. The magazine reports that the whole of “Behar agency” produced 25,000 *man*. “Taking the average produce at ten seers for a beegah, it will amount to about 100,000 beegahs of land on which the poppy is cultivated in the whole of the above districts.”³⁵ Ten *ser* per *bigha* for Bihar is undoubtedly an inflated figure and even the Banaras Agency seems to have produced just six to eight *ser* a *bigha* on an average. If the opium land in Bihar was more fertile and well-irrigated, reducing the reported figure to only eight *ser* per *bigha* still means that the land under poppy cultivation was no less than 125,000 *bigha*, for a total output of 25,000 *man* of opium. Therefore, even if we make room for the better productivity of land compare to Banaras, the number of cultivators to work up the huge land acreage must have exceeded that of the Banaras Agency. If we allow for one under-cultivator per *bigha*, following the Banaras norm, then not less than 125,000 under-cultivators tilled the land for opium. Further, the labour-intensive cultivation of opium was possible only by the collective labour of the entire family.³⁶ Therefore, considering the average farmer having a family of five, more than six hundred thousand people were attached to opium cultivation. At least half of this labour force might have consisted of women and

³² Tapan Raychaudhuri, “The mid-eighteenth-century background,” in *The Cambridge economic history of India*, ed. Kumar, 21.

³³ During the colonial period a *man* was standardized at 40 *ser* equivalent to 100 lbs. troy and a *ser* weighed 2½ lbs. troy.

³⁴ W. C. B. Eatwell, “On the system of cultivating the poppy and of preparing opium in the Benares opium agency, with a brief sketch of the constitution of the department,” *Selections from the Records of the Bengal Government*, 1 (Calcutta, 1851), 5–6.

³⁵ “Effects of the cultivation of opium in India upon the moral and social interests of the population,” *The Baptist Magazine for 1846*, 38 (1846) (London, 1846), 210.

³⁶ Gyan Prakash, *Bonded histories: Genealogies of labor servitude in colonial India* (Cambridge: Cambridge University Press, 1990), 127.

children who carried out such subsidiary tasks as collecting the poppy juice, drying the poppy-petals, weeding and extracting seeds from the poppy capsules, while the heavier tasks such as tilling, putting manure, and irrigating were performed exclusively by men.³⁷

According to a Dutch source of 1688, Bihar produced about 8,700 man of opium. Assuming that the productivity of the land and techniques of production did not change drastically between the seventeenth and eighteenth centuries, and further assuming that the seventeenth century's smaller bigha (22,500 square feet as against 27,225 square feet bigha during the colonial period) produced six *ser* opium on an average, the total acreage under production in the late seventeen century would have been 52,200 bigha.³⁸ Allowing one bigha for each cultivator with a family of five gives a figure of 260,000 people being directly involved with poppy cultivation in Bihar in the late seventeenth century. These people's livelihood was directly linked to the market for opium. Since the demand of opium grew in the course of the eighteenth century, the number of peasants involved in its production would have increased correspondingly.

Saltpeter and textiles were other important commodities the production of which employed a considerable number of people, although it is difficult to ascertain the precise number of nunias and weavers. Therefore, I shall use the qualitative data to suggest the possible number of people involved with these commodity productions. According to an early twentieth-century source, around 50,469 workers were employed in 281 *kothis* (production centres or manufactories), which produced about 19,438.8 tonnes of saltpeter.³⁹ In the 1770s, after the Company assumed monopoly over saltpeter production, it is assumed the European ships carried 4,500 tonnes of Indian saltpeter, of which at least 90 percent was exported from Calcutta. Therefore, deducting ten percent, which would have been collected in southern and western India, Bihar produced more than 4000 tonnes in the 1770s. Based on the early twentieth-century employment ratio, production would have employed more than ten thousand nunias. But this number presents many difficulties. First of all, the production techniques would likely have been more labour-intensive in the eighteenth century than later, when better tools were used for scraping the silt, copper, and iron pans for boiling the raw saltpeter and so on under more organized production system. In the seventeenth and eighteenth centuries, unorganized individual families of nunias worked at saltpeter extraction, collection, boiling, and refining with the primitive tools and techniques and the entire process tended to be labour intensive. In fact, the early twentieth-century reference gives the

³⁷ Shireen Moosvi, *People, taxation and trade in Mughal India* (New Delhi: Oxford University Press, 2008), 136–41.

³⁸ Under the East India Company rule the measurement of a bigha increased by 4,775 square feet from the precolonial bigha of 22,500 square feet.

³⁹ Sir George Watt, *The commercial products of India, being an abridgement of "The dictionary of the economic products of India"* (London: John Murray, 1908), 972–75; see also James W. Frey, "The Indian saltpeter trade, the military revolution, and the rise of Britain as a global superpower," *The Historian* 71:3 (2009): 553.

number of those who were on the payroll of the colonial government but does not include the transporters, fuel suppliers, *asamiyas* (petty contractors or intermediaries), and others do not come into picture. As the eighteenth-century saltpeter production process would have required a larger labour force, we may presume that not less than twenty thousand *nunias* and an additionally ten thousand fuel collectors and transporters were needed to produce 4,000 tonnes of saltpeter. If each of these *nunias* and other labourers had a family of five, then about 150,000 people were directly involved with saltpeter production in the second half of the eighteenth century. Rather than claiming it to be an absolute figure, this is more of a conjecture that suggests the large labour force employed in the saltpeter industry.

Our sources do not give a clear idea about the numbers of weavers in Bihar, but qualitative evidence suggests their preponderance in the districts along the Ganga. While surveying Bihar in the early nineteenth century, Buchanan reports that there were about 20,682 houses of cotton and silk weavers in the districts of Behar and Patna. Yang indicates that there were 170 villages of weavers in the Patna district alone at the turn of the nineteenth century.⁴⁰ To the north of Ganga, in Saran district, there were about 60,000 people employed in weaving and textile manufacturing in the early nineteenth century.⁴¹ Bhagalpur was another important textile weaving centre with a good number of weavers who specialized in weaving mixed piece goods made of silk and cotton.⁴² From the above sources, it appears that a considerable number of people found employment in textile production in Bihar. Furthermore, if we add to these cotton growers, petty merchants who traded in raw cotton, cotton-carders and thread-makers, then several more thousand—perhaps even some hundred thousand—people would have been involved in the textile sector of the economy. Even though we do not have an absolute number of weavers, the qualitative evidence suggests a large number of people involved in cotton-textile production in early modern Bihar.

Apart from these commodity and craft producers, there were other servicemen such as *manjhis*, *sipahis* (or sepoys), *baladiyas* (bullock drivers) and the artisans such as leather workers, ironsmiths, carpenters, and a host of others.⁴³ Given the constraints of our sources, it is not possible to calculate their exact number but their presence at parganas, qasbas, sarkars, and bigger townships is undeniable. Perhaps instead of striving to count their heads, it is more important to find their place in the overall economy. For example, the early modern economy of Bihar would have been inconceivable without the contributions of peasant-producers, labourers and servicemen, even though most were not employed on a year-round basis. Most came

⁴⁰ Francis Buchanan, *An account of the districts of Bihar and Patna in 1811–1812*, vol. 2 (Patna: Bihar and Orissa Research Society, n.d.), table 41, 772; see also Yang, *Bazaar India*, 76.

⁴¹ Arjan de Haan, "Migration and livelihoods in historical perspective: A case study of Bihar, India," *Journal of Development Studies* 38:5 (2002): 118.

⁴² Colebrooke, *Remarks on husbandry*, 178.

⁴³ For the various occupational groups in Bihar, see George A. Grierson, *Bihar peasant life: Being a discursive catalogue of the people of that province, with many illustrations from photographs taken by the author* (Calcutta, 1885), 46–116.

from the peasantry and continued to be peasants while taking up jobs as militiamen, boatmen, porters, and so on. These service-men would have constituted yet another segment of the workers' population which inhabited alternately the rural and urban areas and met labour demands in both places. They would have provided vital links between urban and rural societies and exchanged goods, ideas and information between these two places. Perhaps their agency would have been crucial in inspiring and guiding others in rural society to move out during the lean agricultural season. The dynamic of the labour market depended on attracting peasants from rural areas and employing them as militia, boatmen, porters, and so on in urban centres.

Seasonal Labour

The pioneering study of Dirk Kolff on the ethno-military history of Hindustan remains an authoritative contribution to the study of pre- and early-modern labour markets in northern India. The important work of Gyan Prakash also takes a long-term view to explain the servitude of agricultural labourers in south Bihar during the colonial period. As Prakash's focus remains primarily on *kamias*, or members of the landless agricultural labour caste, the craft-producers and labourers employed in non-agricultural productions do not get adequate attention.⁴⁴ Apart from these two studies, labour historians have hardly looked into the early modern period to explain the emergence and functioning of the labour market. Although issues such as working conditions, wages, and employment at the sites of production such as mines, jute factories and tea-plantations are discussed in contemporary works on labour, hardly any work illuminates the pre-history of the supply side of the labour market.⁴⁵ To throw more light on that subject, this section will examine the economic and environmental factors that were crucial for the functioning of labour market in Bihar during the seventeenth and eighteenth centuries. Further, this section will focus on the labour force, which was tied to the Ganga economy, and on the labourers who often gravitated towards the river in search of employment as boatmen, rowers, and transporters. Scattered references from European Companies' records enable us to reflect on wages, employment patterns, and the seasonality of labour demands. The Dutch sources also enable us to consider the military strength of the chieftains or zamindars along the banks of the Ganga in the eighteenth century. The chieftains' militias were largely drawn from the peasant class and even though they worked as infantry- or cavalrymen, they continued to be peasants for a greater part of the year.

Before discussing specific instances of the labour force employed by the European Companies and indigenous chieftains, I will briefly describe the seasonality of labour demands in agricultural works and the regions that contributed to the surplus

⁴⁴ D. H. A. Kolff, *Naukar, Rajput and sepoy: The ethnohistory of the military labour market in Hindustan, 1450–1850* (Cambridge: Cambridge University Press, 1990); Prakash, *Bonded histories*.

⁴⁵ Samita Sen, *Women and labour in late colonial India: The Bengal jute industry* (Cambridge: Cambridge University Press), 27–28. Sen has mentioned some of the areas of Bihar that supplied labour. For example Saran was the foremost supplier of labourers who went to work in the jute mills during lean agricultural months.

labour force to be hired out periodically. Anand Yang has studied the seasonal pattern of labour migration from Saran district. Based on the British civil servant George A. Grierson's observations and other colonial documents, Yang suggests that the peak agricultural season lasted from June-July to November-December, when most of the bhadaï and aghani crops were cultivated and harvested. In the areas where rabi crops were not very promising and consisted of only cash crops, the period from December to May was the slack season, when the bulk of labourers moved out seeking employment.⁴⁶ According to Tirthankar Roy, the migrant labourers of peasant background coming from northern India to Calcutta during the colonial period retained "a toe-hold in the rural economy."⁴⁷

In the relatively drier regions such as Shahabad, Gaya, Munger, Saran, and Hajipur rabi and kharif crops were sown depending upon the availability of water. Therefore, in the areas along the riverbanks, and in those places where water resources could be managed artificially, the kharif-paddy crop was sowed in June-July. After the crop was harvested and brought home in November-December the peasants and labourers had a lean agricultural season until the next sowing season. Conversely, in areas away from the riverbanks, and where water was scarce, rabi crops normally predominated. The rabi crops required some agricultural work only during the sowing and harvesting seasons, that is in December and in April. As the drier marches could not absorb its entire labour potential for agricultural works, many peasants experienced a long lean season and took to supplementary employments as weavers or porters, while others moved out towards the river to find alternative employment as boatmen, rowers, transporters, militiamen and so on. Only in those regions where both rabi and kharif crops could be grown, the labour would have been in demands for six to eight months. The tradition of out migration of peasants seeking work was relatively strong in the drier ecological zones at least since the sixteenth century if not earlier.⁴⁸ For example, labour moved out from the parts of Saran, Shahabad, Gaya, and Munger compared to the humid and well-watered areas such as Tirhut.⁴⁹ The tracts along the

⁴⁶ George A. Grierson, *Bihar peasant life*, 271–85; Anand Yang, "Peasants on the move: A study of internal migration in India," *Journal of Interdisciplinary History* 10:1 (1979): 51–53. Oral testimony of Shree Chandra Kumar Jha, a retired high-school teacher and peasant in Kahua village of Darbhanga district, dated 22 December 2011. In contemporary times, the slack agricultural season begins in the winter months and the surplus labour of Darbhanga migrates to the Punjab where they are employed primarily in wheat cultivation.

⁴⁷ Tirthankar Roy, *The economic history of India, 1857–1947* (Delhi: Oxford University Press, 2000), 170–71.

⁴⁸ Kolff has convincingly demonstrated the military-soldiering of the Purabia Rajputs who came chiefly from Awadh, Bihar and the Varanasi region. See *Naukar, Rajput and sepoy*, 86–87. For an endorsement of Kolff's work and its significance for understanding peasant activism in late- and post-colonial Bihar, see Walter Hauser, "From peasant soldiering to peasant activism: Reflections on the transition of a martial tradition in the flaming fields of Bihar," *JESHO* 47:3 (2004): 401–34.

⁴⁹ C. J. Stevenson-Moore, *Final report on the survey and settlement operations in the Muzaffarpur District, 1892 to 1899* (Calcutta: Bengal Secretariat Press, 1901), 7. The settlement officer remarked that already in 1787 the people of Saran were migrating in large numbers to less-congested areas in search for work, while those in Tirhut loathed moving from their homes and preferred to live in poverty. Perhaps the settlement officer overlooked the relative food security of the region owing to the many perennially

Himalayan Terai offered greater possibilities of both the kharif and rabi crop cultivation and as a result the region required more labour for a longer period of time. Furthermore, the concentration of weavers and weaving villages appears largely in areas where agriculture was less remunerative and water resources were difficult to manage. While references to weavers come primarily from Saran, Gaya, Patna and Bhagalpur, in the Tirhut and Terai regions they are scarcely reported. Perhaps the concentration of weaving villages in a particular geographic and ecological zone of Bihar may be taken as evidence of the availability of surplus labour force as agriculture could employ only a part of it.

The important saltpeter production districts were Saran, Champaran, and Tirhut,⁵⁰ which lie to the north of Ganga. The production of saltpeter depended on the labour of lower castes such as nunias and *bildars* (earth-workers such as diggers or dike makers). Traditionally these castes constituted the landless labourers and they worked for the land-owning peasants and zamindars. Apart from working as saltpeter-scrapers, they would have also been employed as agricultural workers. Since the scraping off of saltpeter from farms and fields was done after the monsoon season ended and the boiling and refining of the substance was carried out in the drier months, the labour of nunias and bildars would have been available for paddy transplantation during the rainy season. The saltpeter production was a labour-intensive process. A source published in 1915 informs that to produce 8 to 16 pounds of crude saltpeter, nunias worked continuously for 30 to 36 hours.⁵¹ A British official who observed the process in the nineteenth century reported that each kothi employing the entire family labour of a nunia for six to nine months between October to June could produce between 634.2 and 1,115 kg of raw saltpeter.⁵² In the seventeenth and eighteenth centuries, when mostly the clay pans were used for boiling, the hours of labour would have been greater still and the refining process would have required more fuel. Unfortunately, we do not have

flowing Himalayan streams in Tirhut and other regions to the north of the Ganga. Year-round availability of water in the northern region sharply contrasts with the dry areas of Saran, Bhojpur and other districts to the south of Ganga. Obviously migration had become a norm in the less bountiful areas.

⁵⁰ Nitya Gopal Mukerji, *Handbook of Indian agriculture* (Calcutta: Thacker, 1915), 408.

⁵¹ Mukerji, *Handbook of Indian agriculture*, 409. During the mid-nineteenth century, a bildar employed for earth work in the "Ganges Canal" construction earned four rupees a month. If a nunia worked for a month collecting and refining saltpeter, it would be hard for him to produce enough saltpeter to sell for four rupees. For the monthly pay of bildars, see Jan Luccasen, "The brickmakers' strikes on the Ganges canal in 1848–1849," in Rana P. Behal and Marcel van der Linden, eds., *Coolies, capital, and colonialism: Studies in Indian labour history: International Review of Social History*, Supplement 14 (Cambridge: Cambridge University Press, 2006), 57. According to Luccasen, rather than referring to a specific caste group the sources denoted bildars as unskilled workers or assistants.

⁵² R. Montgomery Martin, *The history, antiquities, topography, and statistics of eastern India*, vol. 2 (London, 1838), 280; J. Stevenson, "On the manufacture of saltpeter as practiced by the natives of Tirhut," *Journal and Proceedings of Asiatic Society of Bengal* 2 (1833): 23–27; see also Frey, "The Indian saltpeter trade," 523; for the tools and techniques used for saltpeter collection and refining by the nunias in 1688, see NA, VOC, Inv. Nr. 1454, "Memorie bij forms van Instructie opgesteld bij Adriaan van Ommen coopman en hooft en Matheus van Heck, ... aan den ondercoopman Pieter Vrolijkchart, comptoiren Pattena en Sioppra" (hereafter, MvO Van Ommen to Vrolijkchart), signed by Adriaan van Ommen and Matheus van Hek at Chhapra on 01.06.1688, fos. 746v–47r.

any data about the terms of contracts between nunias and asamiyas. However, we know that the saltpeter business was controlled by the asamiyas and zamindars who advanced money to the nunias and that the latter paid them back in raw or refined saltpeter. Judging from their wretched conditions, the nunias worked for a bare subsistence and the profits of saltpeter trade went to the intermediaries such as asamiyas.

Labourers also came to the riverbanks and to the production and trading centres from areas where agriculture was less central to the economy. The hill people from the Chhota Nagpur Plateau and Santhal Pargana often moved out in search of jobs or profitable raids in the plain or the highways, especially during the lean agricultural seasons. Gyan Prakash mentions Rajwars who inhabited hills and jungles along the southern edge of the south Ganga plain. Apart from working as agricultural labourers for a few months, they traditionally carried out predatory raids on the plains and highways. After the mid-nineteenth century they were absorbed into the agrarian economy and their raids and robberies diminished to a large extent.⁵³ More evidence of unruly and turbulent people from the hills and jungle of southern parts of Bhagalpur are reported in early nineteenth-century colonial records.⁵⁴ As we shall notice from the early eighteenth-century Dutch records, many rowers and boatmen came down from the hills to take up temporary employment when the navigation peaked in the Ganga following the monsoon. In the nineteenth and twentieth centuries, the same hill people would find employment as migrant labourers in the mines of southern Bihar, the jute mills of Calcutta and the tea plantation of Assam.⁵⁵

It is clear from the above paragraphs that the production of textiles and saltpeter largely depended on the surplus labour from the agrarian economy. The weavers, nunias, and bildars continued to be partly employed in agricultural works and in the lean agricultural season they devoted their labour to the production of textiles and saltpeter. Their temporary employment as servicemen usually followed the rhythms of the agricultural season and the labourers went back to the fields when farming required their labour. The hill people also took up jobs as boatmen, rowers, and couriers primarily during the second half of the year, when the river traffic was at its peak in the Ganga. Subsequently, the hill people would return to their home during the drier

⁵³ Prakash, *Bonded histories*, 163–66. Bihar State Archives, Gaya Collectorate Records, Patna, vol. 2. (Issue side), letter from the Deputy Magistrate of Nawada, dated 13 April 1848, document cited by Gyan Prakash.

⁵⁴ Seema Alavi, “The company army and rural society: The invalid Thanah 1780–1830,” *MAS* 27:1 (1993): 152; BL, IOR, P/133/53, Letter no. 26. Petition of Abdul Rusul Khan Sezawal of Bhagalpur, 14 December 1819, Bengal Criminal Judicial—Lower Provinces, document cited by Alavi. The English Company raised the “hill regiments” in order to tame the turbulent hill area. The Company did so with the help of local notable, Abdul Rusul Khan, who supplied hill recruits and guaranteed their good conduct. One wonders if similar methods of jobber-captain existed in the seventeenth and early eighteenth century for supplying boatmen, runners and pions to the European Companies and other river-borne merchants.

⁵⁵ See for labour migration into the mining industry of south Bihar and tea plantations in Bengal, Prabhu Prasad Mohapatra, “Coolies and colliers: A study of the agrarian context of labour migration from Chotanagpur, 1880–1920,” *Studies in History* 1:2 (1985): 247–303.

months when the gains from predatory raids on the highways and plains could be expected to yield some profits.

In the following paragraphs I shall focus on the servicemen who were employed by the European Companies and local chieftains, usually from July–August to December–January as this was the brisk commercial season for the transportation of goods to the coastal cities and port towns.

River Folk

There is some evidence of the VOC employing servants at its different factories and warehouses in Bihar. Further, the Company regularly hired rowers, manjhis, daroghas, and militia for its river fleet. The European Companies also employed local boats with boatmen for transporting commodities. From the scattered references, it is hard to establish the ethnic identity of the labourers, but in some cases the Dutch sources do mention the names of some of its employees, as we shall see below. These names may help us conjecture about their ethnic identity. The European Companies also relied on the services of intermediary merchants, brokers, suppliers, *shroffs* (money changers) for the procurement of export goods and the sale of imported commodities and for financing their trade. Some of these intermediary merchants and brokers also constituted the service gentry who operated from Patna. Strictly speaking, not all brokers and suppliers were employees of the Companies and many of them functioned on the basis of charging commissions on the merchandise.

Evidence of the VOC hiring boats to convey its merchandise at Patna dates from at least 1646, though the terms of hire are not mentioned.⁵⁶ The practice of hiring local boats for transportation of goods remained commonplace well into the eighteenth century. The small local boats were used to collect saltpeter from Nawada and Chhapra and convey it to the main Dutch saltpeter warehouse at Fatuha. From Fatuha larger vessels and barges conveyed the saltpeter to Hugli.⁵⁷ A Dutch source called the “Patnase Cassa Boek,” or account book of Patna, gives interesting information about the expenditures on hiring of boats, employing the rowers and boatmen on monthly basis. For example, on 15 August 1755 the Company officials at Patna entered such expenditure in the account book under the following headings: expenditure on sloop and small boats f.96.19 (guilder or f.); payment of *soldijen aan land* (wages ashore?) f.721.17; the monthly salary of the local employees f.408.3.⁵⁸ For the next month, in

⁵⁶ NA, VOC, Inv. Nr. 1164, “Copia weissend door d’ oppercoopluijden Thomas van Cuijck en Jan van Iebinoq[?] in dato ultimo Januarij anno 1647,” by Martinus de Vroede and Thomas van Cuijck at Patna on 24.12. 1646, fos. 720r–721v. From another Dutch source of December 1659, we learn that because of the shortage of the means of transport—implying boats—the Company had to leave 400 lasts (one *last* equalled to 450 man) of saltpeter at Patna, see W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneur-Generaal en Raden aan heren XVII der Verenigde Oostindische Compagnie*, vol. 3, 1655–1674 (’s-Gravenhage: Martinus Nijhof, 1968), 291, Maetsuyker, Hartsinck, enz. XVIII, 16.12.1659, and p. 343, Maetsuyker, Hartsinck, enz. 16.12.1660, for 40 *last* weighing 1,800 man of 68 Dutch pounds.

⁵⁷ NA, VOC, Inv. Nr. 2849, MvO Louis Tallefert to Adriaan Bisdorn, 27.10.1755, fo. 158v.

⁵⁸ NA, VOC, Inv. Nr. 2873, “Cassa boeken na Patna d’ Anno 1755/56, In ’t N: Comptoire Pattena Ao: 1756,” fo. 56r.

September 1755, the Dutch account book notes the expenses on the rents of different types of boats. They paid to the “Mangies” of three big boats *f*.9, other “Mangies” of small and big boats *f*. 35.5 and the subsistence money or wages (*kostgeld*) to the rowers of small boats, which were hired to bring saltpeter from nearby places to Fatuha, *f*. 115.8.⁵⁹ For previous years the “Cassa Boek” is not available but the pattern of employing boatmen presumably would have been similar. As it is apparent from this source that the European Companies employed rowers and manjhis in August and September, that is the months immediately following the sowing season of paddy in June-July. It is likely that many peasants would have found work in these capacities after the paddy-sowing season was over. Since the names or places of the rowers and manjhis are not given in this case, we cannot identify their areas of origin with any certainty. But the sources do make a difference between the manjhis of Bihar and Bengal.⁶⁰ A Dutch record of 1724 mentions the names of eight boatmen employed by the Company in the delta.⁶¹ The way these names are spelt, they do not appear to be Bengali and I suspect them to be migrants from Bihar.

The river fleet of the VOC employed different types of functionaries, including indigenous soldiers whom the sources sometimes refer to as *gemeens* or *gemends*:. In a document called *instructie* or instruction of 1727, the Dutch officials mention the function of sixty indigenous employees hired for the river fleet. The darogha, who seems to have functioned as overseer, was Kesari Singh. Apart from the darogha, there was one Portuguese interpreter, one Persian letter-writer, one chief sepoy called a *hoofdpion*, thirty soldiers or *gemends*, three *gerriaals* (from the Hindi *gharial*, or time-keepers) or *inlandse kloklagers*, eight *kahars* (palanquin carriers), four couriers or *casset* (the Persian *qaseed* meaning, courier), three informants or *rondegangers* who normally reported to the manjhis about the safety along the route, four carpenters, and four smiths.⁶² The fleet was made up of some 148 different small and big boats. As most of the boats were hired, the number of boatmen on them is not given. The Dutch maintained some of their own boats and for these there is a remark that one boat is earmarked for four manjhis and 32 rowers, probably for the rowers’ private use and

⁵⁹ NA, VOC, Inv. Nr. 2873, “Cassa boeken na Patna d’ Anno 1755/56, In ’t N: Comptoire Pattena Ao: 1755,” fo. 31r.

⁶⁰ For the “Behaarse roeijers” or rowers from Bihar, see NA, VOC, Inv. Nr. 2849, MvO Louis Tallefert to Adriaan Bisdom, 27.10. 1755, fo. 162v.; and for Bengal’s manjhi and rowers, see NA, VOC, Inv. Nr. 2862, From Hugli to Batavia 15.12.1754, “Missive van de afgaande en aankomende directeurs and raad aen den Hoog Edelens in dato 15 dec.1754,” p. 45.

⁶¹ NA, VOC, Inv. Nr. 8753, From Hulgi to Batavia 03.11.1724, “Twee copia verklaringen soo door 2 Europ: matroosen als een mangie of inlants stuurman nevens 8 zijnen roeijers belegt, nopens ’t violeeren onser vlag door Britse monttling dragende manschap,” pp. 189–193, esp. p.191 for the names of the manjhi (Narijn) and his eight rowers, Hillaram, Caljan, Lockinaet, Ramsjonder, Gopaal, Cobier, Ramsjern and Roepa. Reports bear dates of 18.08.1724 and 15.08.1724.

⁶² NA, VOC, Inv. Nr. 2075, From Hugli to Batavia 3.11.1727, “Instructie voor den manhaften capitain d’ E: Jacob Christiaan Pielat hooft en commandant mitsgaders de luytenants Jacob van der Helling en Francois Mulder...,” Hugli, 27.08.1727, p. 289. On the Indian system of dividing time during the Mughal Empire, see Stephan P. Blake, *Time in early modern Islam: Calendar, ceremony, and chronology in the Safavid, Mughal, and Ottoman empires* (Cambridge: Cambridge University Press, 2013), 59–69.

keeping their food-stuffs.⁶³ In 1770 the Dutch had close to one hundred indigenous servants employed in different capacities in their Patna, Singia and Chhapra factories, paying about f. 483 per month. From the document it appears that the majority of employees were hired seasonally.⁶⁴ The VOC regularly employed local functionaries and servicemen at least since around the mid-seventeenth century when it started buying saltpeter, opium, and textiles from Bihar.

One instance of local boat hire and the monthly pay for the *dandis* (boatmen or rowers) and *manjhis* comes from the English Company's records. In October 1764, the Company hired a number of different types of vessel to accompany the Governor of Ghiratty for the express purpose of receiving the Nawab. The rents are given on per day basis: twenty-seven boats of six oars at the rate of Rs. 1; five boats of five oars at the rate of 14 *anas* (there are 16 *anas* in 1 rupee); five boats of four oars at the rate of 12 *anas*; three boats of three oars at the rate of 10 *anas*; one boat of ten oars at the rate of 1 rupee 8 *anas*; 1 *bhaud* of four oars at the rate of 4 rupee; 1 budgerow (keel-less barge) of eight oars at the rate of 1 rupee 8 *anas*; and two budgerows of ten oars at the rate of 2 rupees 8 *anas*. The *dandis* were employed at the rate of Rs. 3 per month and the *manjhi*'s monthly pay stood at Rs. 5.⁶⁵ As we do not have consistent data for the previous period, it is hard to track the hire-rate for different types of boats and pay for the *dandis* and *manjhis* in course of the seventeenth and eighteenth centuries. Nevertheless, the above information on boat rents and pay gives some idea about the remuneration of boatmen. Indeed the river transportation attracted able-bodied rowers, boatmen, and a number of others such as sepoy, kahars, *gharials*, and couriers and so on as we already noted above. Another important sector for employing peasant labour would have been the military labour market as we find several chieftains along the Ganga maintaining substantial militia.

The Dutch sources also furnish information about some of the chiefs' military strength. Whenever the Dutch fleet plied the Ganga, for security reasons it was considered strategically prudent to seek and collect intelligence about the chieftains' cavalry and artillery. The Dutch fleet journal of 1729 reports that Raja Muhammad Asim of Kharagpur was camped along the southern banks of the Ganga between Jahangira and Sitakund near Munger with five or six hundred cavalry and artillery.⁶⁶ A year later, in 1730, the Patna fleet journal mentions a very notorious raja or chieftain,

⁶³ NA, VOC, Inv. Nr. 2075, "Instructie voor den manhaften capitain d' E: Jacob Christiaan Pielat," p. 291.

⁶⁴ NA, VOC, Inv. Nr. 3284, "Rendement vande onder volgende beschadigde goederen," From Hugli to Batavia 13.03.1770, fos. 399–428, see esp. fos. 425r–v; see also Inv. Nr. 3284, "Notitie van zodanige Inlandsche dienaars, als ter deezer kantoore absolut benodigt zijn, en onmoglijk kunnen gemist worden," Patna, 24.01.1770, pp. 171–72.

⁶⁵ BL/IOR/P/1/37, Fort William the 15th October 1764, fo. 367v. Buchanan noted that the rate of boat hire was more in Calcutta than in Patna, see Buchanan, *An account of the Districts of Bihar and Patna*, 2:704.

⁶⁶ NA, VOC, Inv. Nr. 8762, From Hugli to Batavia 25.01.1730, "Journaal in form van een dagregister gehouden door den Luitenant Commandant Jacob van der Helling," entry of 7.10.1729, see p. 56 for the raja's militia along the river.

Bagtousersing (Bhagateswar Singh?) at Pepria, in the region west of Surajgarha and Samboa. It further noted that the men of this raja often robbed the merchants and controlled the passage along the Ganga. According to information gathered with the help of pions and informers, the fleet captain believed that the raja commanded a militia of 2,000 horsemen and 2,500 artillery and his control extended up to Samboa.⁶⁷ There were several other zamindars who maintained their own militia. Therefore, employment as militiamen in the service of a chieftain or warlord would have constituted another source of income for the peasants. Navigation on the Ganga peaked after the busy paddy sowing season (June-July) was over. For the chieftains too it would have been economical to employ the peasants as militia on a temporary basis during the peak navigation season for the collection of customs and tolls on the river *chowkies*.

The employment opportunity also existed for the overland transporters. Specialized groups of transporters known as *baladiyas* operated throughout the year except for four months of wet season from July to October. The references to these transporters appear more with reference to the drier areas where river navigation was impracticable. The *baladiyas* also functioned as peddling merchants carrying their own commodities from the rural areas to the local markets and vice versa. Most of them possessed capital of Rs. 5 to Rs. 50 and owned one to ten oxen, although some had Rs. 20,000 in capital.⁶⁸ Francis Buchanan reports that after the rainy season carts were used to connect Patna with the principal towns such as Danapur, Gaya, Behar, and Daudnagar. The usual rate of hire at Patna for a cart with two oxen ranged between four to eight *anas* a day. The porters were easily available in the towns and they were hired for transferring goods for a short distance.⁶⁹ Buchanan is not explicit whether these different types of transporters were peasants for a greater part of the year but such possibility cannot be ruled out.

From Colebrooke's remarks it appears that overland transportation costs were exorbitant compared to river freightage. For example, while overland carriage normally

⁶⁷ NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, "Instructie voor den Manhaften Capitaen D: E Jacob Willem van der Brughen," p. 1072.

⁶⁸ Buchanan, *An account of the Districts of Bihar and Patna*, 2:696; Chatterjee, *Merchants, politics and society*, 44.

⁶⁹ Buchanan, *An account of the Districts of Bihar and Patna*, 2:706–7. According to Buchanan, travellers found it difficult to obtain the service of porters in the countryside and the zamindars bound the weavers to convoy the luggage of travellers in lieu of some pecuniary benefits. In contrast at the places of production the service of transporters would have been easily available for hiring out to the local and European merchants who employed them for the collection of goods. It is well possible that at the towns, the porters were seasonal migrants who worked during the lean agricultural season and earned some extra money. During the 1620s the cost of transportation between Patna and Agra by bullock cart was about Rs. 1 5/8 to 2 a man. Further, the cart transportation seems to have some sort of organization because if the cart-men failed to reach Agra within the stipulated days then a redress could be demanded from the owner of the carts or the surety giver, see BL, APAC, IOR, G/28/1, Patna Factory Records, 1620, vol. 1, Robert Hughes and John Parker to the Agra Factory, 6 October 1620, p. 10; see also R. C. Temple, Bart, ed., "Documents relating to the first English commercial mission to Patna, 1620–1621," *The Indian Antiquary: A Journal of Oriental Research* 43 (May 1914): 83. The editor skipped some paragraphs while editing the original manuscript of Patna Factory Records of 1620–21.

cost about one rupee a man for one hundred miles, one could ship 100 man the same distance for only three to four rupees.⁷⁰ In other words, transportation by road was at least twenty times more expensive than by river. Therefore wherever the possibility of river traffic existed, water transport was far more economical and was preferred over the land carriage. For transporting goods a shorter distance some labourers found employment as porters in the Dutch warehouses, especially when the season for collection of goods peaked during the drier months, or the first half of the year.⁷¹ Apart from the transporters, some brokers or agents took long-term employment with the VOC, but their number would have been small.⁷²

In the above section, I discussed the supply side of the labour market, peasant labourers, hill people and those sectors of the economy that seasonally employed them. But before transportation, the merchandise of course needed to be produced in the farms and fields. Peasants' labour was essential to the production process, and it was only after goods were ready at the production centres that additional labour was needed to transport them on boats, oxen or on carts. The next section, therefore, discusses commodity production and the goods that attracted merchants of various descriptions from different parts of the world to the markets of Bihar.

Section II: Cash Crop and Mineral Production

The commercial economy of Bihar provided employment to the millions of peasant-producers, craftsmen, and workers who I discussed in the above section. Opium and saltpeter constituted the most important marketable commodities, followed by cotton textiles, grains, turmeric, musk, and borax, among others. The merchants purchased these goods from Bihar and transported them to long-distance markets. While section one primarily focused on the producers and labourers, section two considers the commercial goods themselves, how they were produced, the environmental zones where these goods were obtained, and their quantity and types. Our objective here is to synthesize information about producers and products. Such an exercise underlines the

⁷⁰ Colebrooke, *Remarks on husbandry*, 163–64.

⁷¹ NA, VOC, Inv. Nr. 1796, "Aparte memorie ofte Instructie, ...opgesteld bij den directeur Willem de Roo en zijn vervanger den edele heer Anthonij Huijsman" (hereafter, MvO Willem de Roo to Anthonij Huijsman), signed by Wm de Roo at Hugli on 06.11.1710, pp. 142–43.

⁷² NA, VOC, Inv. Nr. 1277, "Memoria raackende 's Comp:s voordeligen handel soo van salpeter, amphioen, muscus, witte lijwaten, borax, zeep, taruw, als verdere coopmanschappen die ten Comptoire Pattena wert gedreven..." (hereafter, Memoria raackende 's Comp:s voordeligen handel), Jacobus Verburgh comptoir Pattena tot Sioppa, 20.12.1669, fo. 1426v. The Persian writer Ramadas was replaced by Herporsaet (Har Prasad?) and got Rs. 300 per annum as his salary. According to a final report of Jacobus Verburgh, it is noted that except for the replacement of Ramdas the other indigenous employees continued in the service at the factories of Patna and Chhapra. Except for the key functionaries such as the brokers, writers and daroghas, the change of the lower rung employees or at least keeping them seasonally would have been more economical for the Company. For instance, from another *Memorie* or final report of 1710 we hear that none of the indigenous employees had been in long continuing service and experience compared to the useful and profitable services rendered to the Company by the broker Satae (Satto). See, NA, VOC, Inv. Nr. 1796, MvO Willem de Roo to Anthonij Huijsman, 06.11.1710, pp. 136–37.

vitality of the economy and its capacity to employ a large number of people. Further, a discussion on producers, products, and the productive capacity of the region is crucial to an understanding of the commercial activities of Asian and European merchants, the inflow of liquid-money and the implications for state formation. At the heart of all these economic and political developments were the goods that the peasant-producers furnished in the markets of Bihar.

Opium

Poppy (*Papaver somniferum*), or its final product opium, has been known to Eurasian societies since antiquity. The Zoroastrian text *Zend-Avesta* also mentions poppy and opium as having aesthetic effect. The use of the drug was well known to the Roman surgeons who used it as painkiller and sedative.⁷³ It was used for medicinal purposes in Near East and Egypt from the second millennium BC onwards but in India the earliest reference to the drug comes in a book on toxicology written in 862 AD by Narayan of Malabar, who mentions opium's use for the treatment of rat bites.⁷⁴ As references to the drug are virtually absent from the ancient Indian medical texts, scholars believe that opium was brought to India by Muslim traders or conquerors towards the end of the first millennium AD.⁷⁵ In the course of the second millennium AD, opium gradually began to be cultivated for medicinal uses and also for a moderate consumption in some parts of India. From the sixteenth century, if not earlier, poppy may have become an important commercial crop as it appears from the late sixteenth-century Persian record of the *Ain-i-Akbari*.⁷⁶ As the demand grew in the course of later centuries, more acreage was turned over to poppy cultivation, and in the early modern and colonial periods the drier but well-irrigated parts of the Ganga plain in Bihar and eastern Uttar Pradesh emerged as the leading producers of superior quality opium. For example, the Dutch sources frequently complain about the inferior quality of opium produced in relatively humid areas such as Purnia and northern parts of Bhagalpur, while the opium produced in dry western districts of Bihar was much sought after.⁷⁷

Opium as a narcotic drug is highly addictive for those who regularly consume it either by ingesting or smoking. Its burgeoning consumption in Southeast Asia and China created a huge market for the drug in the early modern period. Around the mid-

⁷³ Richard A. Gabriel, *Man and wound in the ancient world: A history of military medicine from Sumer to the fall of Constantinople* (Washington: Potomac Books, 2012), 80, 117, 176. For a survey of opium in pre-historic times and its psychoactive uses in early historic societies, see Carl A. Trocki, *Opium, empire and the global political economy: A study of the Asian opium trade 1750–1950* (London: Routledge, 1999), 13–19.

⁷⁴ Ram Nath Chopra, *Chopra's indigenous drugs of India* (1933; repr., Calcutta: U. N. Dhur, 1958), 205–6.

⁷⁵ Watt, *The commercial products of India*, 846.

⁷⁶ Abu'l-Fazl Allami, *The Ain-i Akbari*, vol. 2, *A gazetteer and administrative manual of Akbar's empire and past history of India*, trans. Col. H. S. Jarrett, ed. Sir Jadunath Sarkar (1949; rept., New Delhi: Oriental Books Reprint Corporation, 1978), 207.

⁷⁷ J. E. Schooneveld-Oosterling, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 11, 1743–1750 (Den Haag: Instituut voor Nederlandse Geschiedenis, 1997), 264, Van Imhoff XIII, 31.12.1745.

seventeenth century, the VOC procured small quantities of Malwa opium and exported to Batavia. During the seventeenth and eighteenth centuries, European and Asian merchants alike preferred Bihar opium to Malwa opium, which was grown mostly in central India.⁷⁸ One might ask why the trade in Bihar opium surged ahead of the Malwa variety during the early modern period. Recent scholarship suggests that the Malwa variety was superior in its alkaloid contents compared to the Bihar or Banaras varieties. According to Amar Farooqui during the seventeenth and eighteenth centuries the Dutch supplied the markets of Southeast Asia primarily with the Bihar variety and customers there got accustomed to its taste. In the nineteenth century the Chinese were showing a clear preference for Malwa opium, but Bihar opium continued to be traded in the Chinese market too.⁷⁹ If superior alkaloid content determined consumer taste, it is difficult to explain why Hindustani merchants who catered to Persian and Central Asian markets purchased enormous quantities of Bihar opium instead of Malwa opium. We do not know much about the Malwa opium trade before the nineteenth century, but its expansion during the nineteenth century was probably due to many other factors than simply its superior alkaloid content.⁸⁰ In the case of Bihar, we have rather detailed information about opium cultivation and trade from the seventeenth century. In the following paragraphs I shall discuss the agricultural methods employed by the peasants of Bihar to produce opium, the process of which has been described in wonderful detail in the Dutch “final reports,” or *Memorie van Overgave*, of 1688 and 1755. As the Dutch were one of the foremost buyers of Bihar opium, they keenly observed the production process of this crop.

Poppy Cultivation in Bihar

According to the Dutch report of 1688 the best soil for opium production was not clay but the one mixed with sand and known as *kewal* or *domut* having a greyish or ash colour. The opium grower, called “*khoijdrij*” in the Dutch reports, began his agricultural operations in mid-October or November, after the end of the rainy season. At first he ploughed the land and prepared it for broadcasting the opium seeds. In one bigha land of a hundred square cubits he sowed two and a half *ser* of seed and divided the land into several small quarters (*biddetjes*) and then filled them with water to soak

⁷⁸ George Bryan Souza, “Opium and the company: Maritime trade and imperial finances on Java, 1684–1796,” *MAS* 43:1 (2009): 123–24.

⁷⁹ Amar Farooqui, *Smuggling as subversion: colonialism, Indian merchants and the politics of opium, 1790–1843* (Oxford: Lexington Books, 2005), 98–101; Amar Farooqui, “Colonialism and competing addictions: Morphine content as historical factor,” *Social Scientist* 32:5/6 (2004): 23–27.

⁸⁰ Farooqui, *Smuggling as subversion*, 71–72. For a critique of Farooqui’s thesis of smuggling as subversion and for a complex interplay of capital and expertise put together by the British, Portuguese and Indian merchants, see Claude Markovits, “The political economy of opium smuggling in early nineteenth century India: Leakage or resistance?” *MAS* 43:1 (2009): 89–111. Though at another level, the novelist Amitav Ghosh also gives an impression that the opium trade was a common concern of the European and Indian merchants, especially at the Cantonese front. See Amitav Ghosh, *River of smoke* (New Delhi: Viking/Penguin, 2011). Apart from the superior quality of opium produced in the drier parts of Bihar, other factors behind the large market for the drug were its relative cheapness and ease of transportation through the rivers.

the soil. In due course the land developed a crust which he broke with an iron tool called a “*phoura*” (from the Hindi *fawra*, or spade) so that the seed could not get stuck beneath the crust. Then he regularly sprinkled water upon all the quarters for at least eight to fifteen days (depending on the moisture of the land) until the seeds sprouted. Irrigation then stopped because excess water could cause the tender roots of the plant to rot.⁸¹

After three-and-a-half to four months, the petals of the white flower around the poppy capsules started falling off, after which it took nine to ten days for the poppy capsules to ripen. To ascertain whether the poppy capsule was fully ripe, the peasant checked to see whether the capsule had turned a light green colour and whether it had somewhat hardened. He then commenced the process of extracting juice from the capsule. Employing a double-edged iron object called *naharin* he made two incisions being careful not to cut into the innermost pulp of the capsule. The day after making the incisions, the peasant scraped off the poppy juice that had oozed out of the capsule with an iron tool called a *sipij*. The next day the capsule was incised again in the same manner and two days later the process was repeated a third time but now the peasant gave but only one incision mark on the capsule. According to Adriaan van Ommen, representative of the VOC commissioner Van Rheede, the process was repeated four times but Tallefert limits it to three times only, though in both cases the last incision bears but a single mark on the poppy capsule.⁸²

The yield of the crop depended on environmental and natural variables. If the crop was subject to excessive unseasonal winter rains, hailstorms, or insects, the price of opium rose. If mild dry westerly winds prevailed, the poppy capsules matured properly and the juice dried evenly. On the other hand, moist easterly winds caused damage to the crop while extreme westerlies dried the poppy too much. Military movements and warfare also diminished the opium output of the region.⁸³

⁸¹ NA, VOC, Inv. Nr. 1454, MvO Van Ommen to Vrolijkchart, 01.06.1688, fos. 764v–765r.; NA, VOC, Inv. Nr. 2849, MvO Louis Tallefert to Adriaan Bisdom, 27.10.1755, fos. 193r–v. The Dutch merchants seem to be taking the measurement of bigha given in *Dasturu-l amal-i Alamgiri* of Auragzeb’s reign, which takes a bigha to be 100 cubits square, see Irfan Habib, *The agrarian system of Mughal India, 1556–1707*, 2nd edn. (New Delhi: Oxford University Press, 2000), 417–18; see also Stephan van Galen, “Opium in de intra-Aziatische handel, 1700–1760,” (MA thesis, Leiden University, 1995), 36. The surface area of one bigha land, according to the Van Ommen, comes to 10,000 square cubits, or 22,500 square feet.

⁸² NA, VOC, Inv. Nr. 1454, MvO Van Ommen to Vrolijkchart, 01.06.1688, fo. 765r; NA, VOC, Inv. Nr. 2849, MvO Louis Tallefert to Adriaan Bisdom, 27.10.1755, fo. 194r. See also, Om Prakash, *The Dutch East India Company and the economy of Bengal, 1630–1720* (Princeton: Princeton University Press, 1985), 57–8.

⁸³ NA, VOC, Inv. Nr. 2849, MvO Louis Tallefert to Adriaan Bisdom, 27.10.1755, fos. 194r–194v; NA, VOC, Inv. Nr. 1454, MvO Van Ommen to Vrolijkchart, 01.06.1688, fos. 765r–765v; see also Suprakash Sanyal, “Ramchand Pandit’s report on opium cultivation in 18th century Bihar,” *BPP* 87:2 (1968): 181, 184; Van Galen, “Opium in de intra-Aziatische handel,” 37. In 1729, it was reported that the fight between the Nawab and chief of cavalry, Sjech Abdullah, caused the opium crop at Patna to suffer considerably and as a consequence its price rose, see W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 8, 1725–1729 (’s-Gravenhage: M. Nijhoff, 1985), 229, De Haan, Huysman, enz. XV, 31.01.1729.

In a favourable season, according to Van Ommen, a peasant could collect six or seven *ser* of poppy juice from one bigha poppy crop, and he could make an opium cake weighing up to three *ser*.⁸⁴ Taillefert notes that in a good season the peasant procured a quantity of eleven to twelve *pond* (Dutch unit of weight equivalent to approximately 1.09 lbs. avoirdupois, 0.49 kilogram) of poppy juice (which roughly translates into five-and-a-half to six *ser*) from one *bigha* of land and could make an opium cake weighing three, four or at the most five *pond*.⁸⁵ The Dutch scholar Van Galen assumes that Taillefert's report gives a somewhat lower yield output from one bigha of land compared to Van Ommen's earlier report.⁸⁶ As is apparent from the above Dutch reports, between the late seventeenth century and mid eighteenth century, a bigha of land produced more or less the same quantity of poppy juice. As we shall see below (Appendix I) certain parganas were the leading producer of opium and were assigned to the influential Mughal officials. Because opium could be grown in the highly fertile and irrigable land, it is possible that the cultivation was done repeatedly using the same land and productivity remained static or slightly declined. Although the Dutch *memories* or reports do not mention of the use of manure in opium cultivation but it is unlikely that manure was not used.⁸⁷

A mid-nineteenth century report on the opium cultivation in the Banaras region notes that in a favourable circumstances of soil and season a bigha of land (27,225 square feet) could produce 12 or 13 *ser* of standard opium juice. Under less favourable circumstances the yield could be anything between three and four *ser*, and the usual yield varied from 6 to 8 *ser* per bigha.⁸⁸ From this report we know that the opium lands were generally located in the vicinity of villages where facilities for manure, produced from animal waste, and water for irrigation were within easy reach. In such fertile land, it was the general practice to take a crop of corn, maize, or vegetables off the land during the rains, by September at the latest, and then dress the field for the poppy crop.⁸⁹ It clearly appears from this report that manure was normally used for poppy cultivation. As the average output was 6 to 8 *ser* from a comparatively larger size of bigha than what it had been during the time of the Dutch reports of 1688, one may assume that the productivity of the land remain static between the late seventeenth century and the mid nineteenth century.⁹⁰ On the other hand, some land could produce

⁸⁴ NA, VOC, Inv. Nr. 1454, MvO Van Ommen to Vrolijkchart, 01.06.1688, fo. 765v.

⁸⁵ NA, VOC, Inv. Nr. 2849, MvO Louis Taillefert to Adriaan Bisdom, 27.10.1755, fo. 194v.

⁸⁶ Van Galen, "Opium in de intra-Aziatische handel," 37n3.

⁸⁷ Habib, *The agrarian system*, 61. Since there was an abundance of vegetation for the fuel along the middle reaches of the Ganga plain, cow-dung must have been spared and used for agricultural purposes.

⁸⁸ Eatwell, "On the system of cultivating the poppy," 8; Naqvi has cited a source of the mid-eighteenth century, *Risala-i-zira'at*, which gives produce of opium ranging from two to five man per bigha. This yield per bigha is highly improbable in any circumstances. See Naqvi, *Urban centres and industries in upper India*, 117.

⁸⁹ Eatwell, "On the system of cultivating the poppy," 8.

⁹⁰ By the second half of the nineteenth century, the production of opium per bigha appears to have declined even further, if the source cited by Trocki is to be believed. According to the source, in 1871 a bigha (presumably of the larger size) produced four to five *ser*, see Trocki, *Opium, empire and the global political economy*, 68.

12 or 13 *ser* of poppy juice in a favourable season, which probably indicates that peasants took the initiative for improving the land and irrigation practices, and increased their use of manure.

The Dutch reports ignore the process by which the raw poppy juice was made into opium cakes, but they offer details about packing the opium cakes and selling them into the market. Once cakes were ready these were nicely wrapped up in the dried petals of poppy flower and they were regularly turned around to make them uniformly dry as long as these remained in the house of a cultivator before the *paikars* (the local small merchants) took them away. However, at the time of the valuation of the produce of the land the peasants or *paikars* sometimes hid the opium cakes in their houses and buried them because of the fear of the zamindar's or jagirdar's agents who could forcibly take their produce. Such burying damaged the quality of opium if it became damp, as could be easily detected by breaking up the cakes to reveal a dark and stale-smelling interior. There were other reasons for the deterioration of its quality and the most notorious being its adulteration. It was easy to adulterate opium with sand, or charcoal or other materials.⁹¹ There was also the possibility of cutting the opium with flour, mud, powdered charcoal, cow-dung, pounded poppy petals, and pounded seeds of different types. The Dutch took particular care to detect the adulteration because such bad quality goods could bring severe loss. Van Ommen and Tallefert suggest that the middle of an unadulterated opium cake appears sticky, shiny, and granular while an inferior one looked dull and non-granular.⁹²

Both the Dutch reports discuss about the by-products of the poppy crop, including poppy seed, dried poppy plants and the petals of the poppy capsule. Although the Dutch reports do not go into detail about the culinary uses of poppy seed, which are non-intoxicating and used for preparing sweet-meats and certain curries. A cuisine very popular among Bengalis is called *aloo-posto* (potato with poppy seeds) and in Bihari households *posta-dana* is an ingredient for making cookies and sweetmeats. The seeds are also a source of oil after pressing in a mill (*kolhu*) run by oxen or pony. Oil was used primarily for lamps but also for consumption for the lower classes, and the poorer folks and the animals ate the cakes that resulted from pressing the seed.⁹³ Van Ommen informs us that one bigha of land yielded three man of poppy seed.⁹⁴ The cultivator spared some seed for his own requirements during the next agricultural season and sold off the rest. In around 1688 we get a general idea of the price of opium seed, which sold 1 ¼, 1 ½ to 2 man in one rupee.⁹⁵ Tallefert reports that in one bigha

⁹¹ NA, VOC, Inv. Nr. 1454, MvO Van Ommen to Vrolijkchart, 01.06.1688, fo. 765v. See also Van Galen, "Opium in de intra-Aziatische handel," 37.

⁹² "buijten twijffelen den amphioen die deugdelijck is, sal in't open breeken der koeken, lijnigh, glansigh, en korlagtigh uijt sien, dog op de hand gestreeken wesende moet het selve van couleur rossachtigh [roosachtig] met geen korle vermengt sijn, of anders is het vervalst goet," NA, VOC, Inv. Nr. 1454, MvO Van Ommen to Vrolijkchart, 01.06.1688, fo. 765v; see also Eatwell, "On the system of cultivating the poppy," 16.

⁹³ Watt, *The commercial products of India*, 860.

⁹⁴ The Patna man weighing 72½ Dutch pounds was equal to *man-i Shahjahani*.

⁹⁵ NA, VOC, Inv. Nr. 1454, MvO Van Ommen to Vrolijkchart, 01.06.1688, fo. 766r.

land the cultivators collected two hundred “Banden” (Ponden?) seeds or roughly 100 *ser*. Taillefert’s report of 1755 does not give prices for the seed but taking a conservative estimate and considering it would have fetched at least 1½ man a rupee in the mid-eighteenth century, then the cultivator earned about two rupees from one bigha of land.⁹⁶

According to the Dutch reports, the poppy-petals were used in packaging the opium cakes. It is not clear as what was the quantity of poppy-petals produced in one bigha of land. In 1688, the Dutch bought 90 man of poppy petals for 18 rupees, or 5 man per rupee.⁹⁷ This means poppy-petals too would have contributed a little to the peasant’s income.

Opium Quantity

The Dutch reports inform us about the total quantity of opium produced in Bihar province. Van Ommen’s report of 1688 gives the per pargana figure of opium production, each pargana’s distance from Patna, the total area of a pargana, and whether it was governed by state officials such as *faujdar* (police officer) and jagirdar or by someone else (see Appendix I). The report lists a total of about thirty-one parganas that in a normal season produced 8,700 man of opium. If weather was not favourable this figure might fall by two or three thousand man. The report further offers a broad summary of the crop’s buyers. Merchants from Allahabad, Agra and so on usually bought between 3000 to 3500 man, those from Hugli and Balasore purchased 800 to 1000 man, and the Dacka [Dhaka?] merchants got 40 to 50 man, while the internal consumption of Bihar was put at 50 to 60 man. Thus Asian/Indian merchants accounted for the sale of between 3,890 and 4,610 man. The Dutch themselves bought 600 man in 1688 at a “civil” price while in the market opium was being sold 69 to 69 ½ rupee a man. The report gives no clue about how much opium was purchased by the English and other Europeans.⁹⁸ If 4,610 man purchased by the Indian/Asian and 600 man by Dutch merchants is subtracted from 8,700 man total estimated produce in a normal crop season, there would have still remained about 3,500 man in the market. This quantity probably fed into the private Dutch and other European merchants’ trade in opium.

The report of Taillefert, prepared in 1755, also gives a somewhat similar estimate of the total produce. Taillefert mentions that there were different opinions about the quantity of opium produced in Bihar province. Without revealing his sources,

⁹⁶ NA, VOC, Inv. Nr. 2849, MvO Louis Taillefert to Adriaan Bisdorn, 27.10.1755, fo. 195v; Van Galen suggests that a cultivator could sell off 200 kilo seeds from one bigha of land, see Van Galen, “Opium in de intra-Aziatische handel,” 37. Around 1900, ten man of poppy seed sold in the wholesale markets in different parts of India ranging from about rupees 35 to 66, see Watt, *The commercial products of India*, 860.

⁹⁷ NA, VOC, Inv. Nr. 1454, MvO Van Ommen to Vrolijkchart, 01.06.1688, fo. 768v. Van Galen misreads rupees 18 for 181 which were spent to buy 90 man of poppy-petals by the Dutch in order to pack the opium in cases made from these petals, see Van Galen, “Opium in de intra-Aziatische handel,” 38.

⁹⁸ NA, VOC, Inv. Nr. 1454, MvO Van Ommen to Vrolijkchart, 01.06.1688, fo. 767v.

he states that he would prefer to stick to the one that assumed it to be 2,500 *kist* or 5,000 man (1 *kist* being equal to 2 man). However, like Van Ommen, he writes that if all the opium producing areas were properly cultivated and if circumstances were favourable, production could be 4,000 *kist* or 8,000 man. About the purchase of opium by different groups of merchants, this mid-eighteenth century report informs us that the *bovenlandsche kooplieden* (merchants from the upcountry) purchased at the best 1000 *kist* or 2000 man, while consumption in Bengal, Bihar and Orissa was assumed to be 500 *kist* and the remaining 1,700 or 1,800 *kist* were left for the Europeans. Of these the Dutch bought 700 to 800 *kist* for themselves and the rest were for the English and the French.⁹⁹

These figures about the total opium production in Bihar hide more than they actually reveal. From the Dutch reports of 1688 and 1755 one gets the impression that the production remained almost constant, while Dutch demand nearly trebled. The growing Dutch appetite shows the rapidity with which the market was expanding in the eighteenth century. We know that the Dutch private trade in opium expanded even faster and some Dutch officials were able to amass substantial capital thanks to their private trade in opium and other commodities.¹⁰⁰ As we cannot accurately determine the quantity of opium feeding the Dutch/European private trade in the eighteenth century, it is difficult to believe that opium production remained stagnant between 1688 and 1755.¹⁰¹ Also, in providing the total output of opium in Bihar, Taillefert's report discounts the produce of Purnia and Bhagalpur, which was of inferior quality and which the VOC ignored.

The Dutch procured opium in three different ways. In the third quarter of the seventeenth century, when the Company's demand was rather small, they bought directly from the *khoijdrij* or the opium growers who came to sell in the open market in May and June. In this method of procurement the Company suffered a loss as opium dried out in June and July and weighed less by the time it reached Batavia. The second method was to sign a contract with the paikars before the crop was ready, but this method also had many difficulties. Sometimes paikars went bankrupt, were harassed by the ruling authorities or tried to adulterate the goods. Thus, according to Taillefert's report, the third and best method was to buy against ready money in the month of July

⁹⁹ NA, VOC, Inv. Nr. 2849, MvO Louis Taillefert to Adriaan Bisdom, 27.10.1755, fos. 195v–196r.

¹⁰⁰ There was some rumour about the wealth of the Dutch chief merchant Van Hoorn who died in Patna in 1712. When the Mughals learned that if a Dutchman died without any heir, the director in Hugli took possession of all his wealth, the authorities were ordered to seize the wealth of the Dutch chief which was said to be to about seven *lakh* (seven hundred thousand) rupees. But the valuation of van Hoorn's property came to be a little more than two *lakh*, still an impressive sum earned by a Dutch merchant presumably by means of his private trading activities. See BL, APAC, IOR, P/1/2, Bengal Public Consultations, fos. 218r–v.

¹⁰¹ According to Prakash the quantities of such goods as opium in private trade was often equal to that of the VOC's own account, see Prakash, *The Dutch East India Company*, 84; see also J. C. Baud, "Proeve van eene geschiedenis van den handel en het verbruik van opium in Nederlandsch Indie," *Bijdragen tot de Taal-, Land- en Volkenkunde van Nederlandsch Indie* 1 (1853): 97–8.

and August when the drying process of opium was over.¹⁰² The peasant produced opium after receiving the advance money from the paikar at the stipulated interest rate and he was free to sell it to the paikar, who of course had the first claim over the product or on the open market, depending on where he got a better price. Thus, opium growers functioned on a pattern similar to that of weavers, who also received advances and were free to sell to the credit providers or on the market.¹⁰³ A price list of Patna opium in the first quarter of the eighteenth century is given in (appendix II.)

Saltpeter

Saltpeter has been known to Indian chemists, physicians, and artisans since antiquity, when it was used for making naphtha, as well as in metallurgy and making textiles.¹⁰⁴ The Sanskrit term for saltpeter is *agni-curn*, or fire powder. A Sanskrit treatise of uncertain antiquity, the *Sukraniti*, refers to saltpeter as *suvarcilavana*, meaning well-shining salt. Some textual sources refer to the use of saltpeter for firearms and rocketry, though scholars contend that this application had little if any practical utility before the arrival of the Muslims in India.¹⁰⁵ References to the use of saltpeter in the Bengali *ban*, a kind of rocket with a range of up to a thousand yards, appear from the early fifteenth century.¹⁰⁶ Though the historical literature is often silent on the issue, there may have been a link between the easy availability of saltpeter in the Bihar region and the political power of the Jaunpur and Bengal Sultanates in the fifteenth century and, later, the formidable success of the Afghan warlord Sher Shah.¹⁰⁷ It appears that both the military use of saltpeter and its use for fireworks would have given boost to production since the fifteenth century, if not earlier. Such production and consumption of this mineral would have necessitated some kind of labour organization and capital investment even before saltpeter became a staple of long-distance trade in the seventeenth century.

The nitrate of sodium, potassium, or even ammonium (KNO₃), commonly known as saltpeter, appears as a white crust on the surface of earth because of the decomposition of human and animal excreta and vegetable refuse. The contact of air

¹⁰² NA, VOC, Inv. Nr. 2849, MvO Louis Tallefert to Adriaan Bisdom, 27.10.1755, fos. 197r-v.

¹⁰³ Prakash, *The Dutch East India Company*, 99.

¹⁰⁴ We still do not know if saltpeter played some role in the high metallurgic standard attained by the Indian black smiths during the Gupta period, a master piece of which exists as corrosion free Mehrauli cast iron pillar of Chandra Gupta Vikramaditya (375–413 AD).

¹⁰⁵ Iqtidar Alam Khan, "The role of the Mongols in introduction of gunpowder and firearms in South Asia," in *Gunpowder: The history of an international technology*, ed. Brenda J. Buchanan (Bath: Bath University Press, 1996), 33–44. For an interesting counter perspective of the Sinocentric history of technology, see Asitesh Bhattacharya, "Gunpowder and its applications in ancient India," in *Gunpowder, explosives and the state: A technological history*, ed. Brenda J. Buchanan (Aldershot: Ashgate, 2006), 42–50; see also R. Balasubramaniam and S. Jai Kishan, "Saltpetre manufacturing and marketing in medieval India," *Indian Journal of History of Science (IJHS)* 40:4 (2005): 663–72.

¹⁰⁶ The Afghan rulers, the Lodis, and Surs made the use of *ban* in their siege operations, see Iqtidar Alam Khan, "The role of the Mongols in introduction of gunpowder," in *Gunpowder: The history*, ed. Buchanan, 41.

¹⁰⁷ For the use of artillery by Sher Shah, see Iqtidar Alam Khan, "Origin and development of gunpowder technology in India: A.D. 1250–1500," *Indian Historical Review (IHR)* 4:1 (1977): 20–29.

and moisture with nitrogen compounds found in decaying matters such as alkaline soil, plant ash, and human and animal waste allow nitre to penetrate into the soil. During the summer monsoon, rainwater dissolves the chemical compounds, which gradually evaporate and form a shiny, white crust. Favourable climatic conditions combined with a relatively high human and animal population density, and an abundance of natural vegetation for fuel for boiling and refining raw saltpeter made Bihar an ideal region for the manufacture of saltpeter.¹⁰⁸ The alternation between the arid summer months and monsoon rains followed by the dry and cool winter assisted the leaching process of saltpeter. While the former accelerated the decomposition process, the latter helped drying the saltpeter grounds on which formed a crust of soft mud about the thickness of a thumb.¹⁰⁹

In relatively densely populated areas of Bihar with equally thick flora and animals, their organic waste helped the formation of a white efflorescent crust on the earth's surface after the rainy season ended. The habitation zones along the northern banks of the Ganga River such as Saran, Champaran, Hajipur, and Tirhut had been the main producing areas of saltpeter. While the population density ensured an abundance of labour, the natural vegetation supplied sufficient fuel and fire-wood needed for refining raw saltpeter. Apart from the conducive environment and large labour force and the availability of fuel, other geographical factors such as river navigation for the collection of saltpeter and its further transportation to Hugli acted in favour of the expansion of saltpeter trade from the region during the early modern period.¹¹⁰ The cheapness and superior quality of Bihar saltpeter outbid the trade in this article from some other Indian regions such as Gujarat and Coromandel where the overland transportation costs proved to be prohibitive for the European Companies. In the following paragraphs I shall describe the production processes and quantities that Bihar was able to supply.

¹⁰⁸ Paul Forchheimer, "Etymology of saltpeter," *Modern Language Notes* 67:2 (Feb., 1952): 103; James W. Frey, "The Indian saltpeter trade," 511; Colebrooke notes that "the elementary substances, which form nitrous acid, are known to have existed in the atmosphere." He also points out that the production of saltpeter is greatest when hot winds blow. He estimates the population of cattle in Bengal province to be near fifty million, see Colebrooke, *Remarks on husbandry*, 180–89; NA, Hoge Regering Batavia, Inv. Nr. 244, "Beschrijving van het Bengaalse rijk," 1757, "welkers gronden door de urine der menschen en beesten vet en dus bequamer werden tot voortsetting van desen oegst [oogst]." (trns: by the human and animal wastes these grounds are made suitable for the growth of this substance), fos. 26v–27r; see also Els M. Jacobs, *Merchant in Asia: The trade of the Dutch East India Company during the eighteenth century* (Leiden: CNWS, 2006), 400, note 54; also W. H. Moreland, *From Akbar to Aurangzeb: A study in Indian economic history*, (London: Macmillan, 1923), 118; see also <http://www.salt.org.il/saltpet.html> (accessed on 28 March 2012).

¹⁰⁹ NA, VOC, Inv. Nr. 1454, MvO Van Ommen to Vrolijkchart, 01.06.1688, fos. 746r–v; see also M. A. G. de Jong, "De Salpeterhandel van de EIC en VOC 1700–1760" (MA thesis, Leiden University, 1995), 9.

Production Processes

The profession of scraping and collecting this commodity was traditionally the work of a caste known as *nunias* who commenced their operation after the monsoon ended.¹¹¹ *Nunias* generally received working capital and remuneration from the *paikars*. After collecting the crust of earth, the *nunias* processed the raw substance by boiling it with water in large earthenware vats and then letting it cool.¹¹² After repeating this procedure a refined variety of saltpeter called *dobara* with 80 to 85 percent nitre could be obtained.¹¹³ A more refined product called *kalmi* or *dobara-cabessa* contained up to 95 percent nitre. This variety was produced by only few rich indigenous merchants for sale in the Calcutta bazaar.¹¹⁴ The Dutch also produced *kalmi* or *dobara-cabessa* variety using copper cauldrons instead of earthen pots.¹¹⁵ In the event that the output of *kalmi* could not keep pace with demand, the VOC shipped the second-grade *dobara* to Europe and refined it in the Netherlands.¹¹⁶ The entire procedure from the collection of the white substance from the earth crust to refining it for sale was done in the winter and spring seasons and thus this commodity was ready to be shipped when navigation in the Ganga eased during the rainy season, as we have already discussed in Chapter 3. In the following paragraphs, I shall briefly reflect on the organization of production.

According to John Marshall's report to the East India Company, saltpeter production was already well-organized around a hierarchy of traders and actual producers in the 1670s. For example, the English Company had contracted with and advanced money to thirty or forty *paikars* and *asamiyas* (the English wrote of them sometimes as *assomedar*) who functioned as middlemen.¹¹⁷ Marshall noted that there

¹¹¹ J. Stevenson, "On the Manufacture of Saltpeter," 23 for *loneah* or *nunia*; see also J. Stevenson, "The Indian saltpetre industry," *Nature: International Journal of Science* 88 (1912): 330–31, and J. Stevenson, "Indian saltpetre," *Nature: International Journal of Science* 99 (1917): 447–8.

¹¹² NA, VOC, Inv. Nr. 1454, MvO Van Ommen to Vrolijkchart, 01.06.1688, fos. 746–47r; NA, Hoge Regering Batavia, Inv. Nr. 244, "Beschrijving van het Bengaalse rijk," 1757, see fos. 26v–32v for a detailed description of saltpeter production and trade in Bihar. Chaudhuri uses the term *assamies* for those who extracted and refined saltpeter in Bihar, see K. N. Chaudhuri, *The trading world of Asia and the English East India Company 1660–1760* (Cambridge: Cambridge University Press, 1978), 339.

¹¹³ Els M. Jacobs, *Merchants in Asia*, 123; for a description of the production method, see Pieter van Dam, *Beschryvinge van de Oostindische Compagnie*, vol. 2 ('s-Gravenhage: Martinus Nijhof, 1932), 33.

¹¹⁴ Stevenson, "On the manufacture of saltpeter," 26–27; see also Prakash, *The Dutch East India Company*, 59.

¹¹⁵ NA, VOC, Inv. Nr. 1212, "Memorie voor d' edele heer Pieter Storthenius[?], extraordinarijs Raat van India, en Directeur over de opgeloookenen inportante commertie van Bengale en Orixia voorgesteld door den Commissaris Joan Verpoorten," (hereafter, *Memorie . . . door Joan Verpoorten*), Comptoir Piplij, 28.10.1655, fos. 211r – 225v, see esp. fo. 222v for the Dutch use of copper pans for refining saltpeter in Bihar. (voordesen hebben maar met 21: ketels te gestooct nederhandt met 15, ende is wijders gelegentht: gemaect om voortaan met 21: ketels te branden so dat de Comp: in 't aenstaande Jaer! in plaetse van de 800.000 pond die gevordert werden ten minsten 1000 a 1200.000 pond goede gesuiverde salpeter sal comen becomen...); In the early eighteenth century the English faced problems in acquiring good refined saltpeter because the *asamiyas* complained that their men refine the substance in small pots (probably of clay). The English remedied this problem by regularly supplying copper pans to their *asamiyas*, see BL, APAC, IOR, E/3/103, East India Correspondence with the East, 1602–1753, year 1726, fo. 38v.

¹¹⁶ Jacobs, *Merchants in Asia*, 123.

¹¹⁷ BL, APAC, IOR, H/47, Home Miscellaneous Series, laid before the committee of commerce 28 June 1787, see pp. 121–24 for John Marshall's report dated 16 December 1676. The reference is from p. 122.

were others who were subordinate to these peter-men, and these subordinates were most likely the under-contractors and nunias. The English had their own peter-men or contractors who were not expected to sell saltpeter to the Dutch or other merchants, but such restrictions were hardly effective and even Marshall complains of the Dutch dealings with the peter-men of the English. However, the VOC also maintained a number of saltpeter suppliers from the mid-seventeenth century onwards.

VOC documents mention many asamiyas by name. In 1660 the Dutch had twenty-one suppliers who delivered 47,303 $\frac{3}{10}$ man of raw saltpeter. The chief supplier was Goeberdhen Raij Swudhrij (Gobardhan Rai Chaudhuri) who had many under-suppliers. There is a detailed description as how much money these under-suppliers owed to the Company and how much saltpeter they were expected to deliver.¹¹⁸ From the Dutch “memorie” or final report of 1669 we also get a detailed break-up of the annual procurement of saltpeter. On average, the VOC bought around 40,000 man of saltpeter every year between 1665 and 1670.¹¹⁹

The reason for the enormous growth of the saltpeter trade from Patna since the seventeenth century was the fact that the product was incredibly cheap compared to that of Coromandel and Ava from Burma. In the 1660s, Coromandel saltpeter cost 10 pagodas or 52 $\frac{1}{2}$ guilders for a *bahar* of 480 pounds, and the same quantity of Burmese saltpeter would cost 63 guilders. In contrast, a *bahar* of Patna saltpeter—which far surpassed the others in quality—cost at most 11 guilders, or roughly five and six times cheaper compared to Coromandel and Burmese saltpeter respectively.¹²⁰ Another reason for the exponential growth of the Bihar saltpeter market was the region’s ability to keep up with expanding demand. By 1688, Bihar’s annual output of raw saltpeter was estimated to be 226,200 man, or 127,238 man of the refined product.

As this trade grew in the seventeenth and eighteenth centuries, total output and prices increased by the mid eighteenth century, and a substantial amount of liquid money found its way into the coffers of the provincial court, zamindars, and merchants. Of the twenty-eight parganas in which saltpeter was produced, about 22 percent of the total area comprised *khalisa* or crown lands while the rest of saltpeter-producing areas were administered by the holders of *jagirs* and by the zamindars. Bihar consumed only about 5.5 percent of the total production and 11.75 percent was sent to the other parts of

¹¹⁸ NA, VOC, Inv. Nr. 1232, “Relaes ofte kort schriftelijck verhael door den coopman Arnoldus van Wachtendonck op zijn wedercomst vande Pattanase besendings neffens desselffs mondelings rapport aen de edele heer Mattheus vanden Broeck directeur in Bengal, Orixia etc. in Ouglij overgegeven,” 01.09.1660, fos. 597r–604v.

¹¹⁹ NA, VOC, Inv. Nr. 1277, “Memoria raackende ’s Comp:s voordeligen handel,” 20.12.1669, fos. 1421v–1422v. For the number of *crediteuren*, creditors or saltpeter suppliers, see NA, VOC, Inv. Nr. 1232, “Relaes ofte kort schriftelijck verhael door den Coopman Arnold van Wachtendonck,” 01.09.1660, fo. 597v. Since the Patna man weighed 72 $\frac{1}{2}$ Dutch pounds, the annual export during the 1660s was to the tune of 2.9 million pounds.

¹²⁰ Wil O. Dijk, *Seventeenth-century Burma and the Dutch East India Company, 1634–1680* (Singapore: Singapore University Press, 2006), 43–4.

Bengal while a whopping 82.75 percent was exported.¹²¹ The internal and external demands for saltpeter and other commodities will be examined in the next chapter.

Conclusion

The industriousness of peasant-producers, workers, craftsmen and a host of others sustained the regional economy of Bihar. They sought to profit from their produce and got employment in different sectors of the economy. The majority of people lived in rural communities, although a small but economically more important part of population lived in urban areas. The urban centres of the Ganga plain may best be characterized as (r)urban place, quite distinct from the European fortified cities. Therefore, the number of those who straddled between the rural and urban areas would have been significant. Therefore, our estimate of urban population of Bihar at seven and half percent may be a conservative figure. If we include those who inhabited both urban and rural landscape in different months of the year, the percentage of urban population would increase significantly. More important, many people's livelihood was linked more or less directly to market-oriented economic activities, especially opium and saltpeter production and trade. The easy availability of labour and the natural arteries for communication further boosted the commercial economy of the region.

The commodities of Bihar clearly linked the region with the long-distance markets. Merchants of various standing, both Asian and Europeans, approached the regional market and bought merchandise primarily with bullion. Opium was a cash crop and ensured steady inflow of liquid money. In the course of the seventeenth and eighteenth centuries, the production of this commodity and trade expanded. This expansion meant an increased flow of cash into the region. Other commodities such as saltpeter played a similar role in the local economy. The fact that long-distance trade increased wealth and prosperity was obvious to the ruling class as well as to different merchant groups. The resulting inflow of wealth would eventually encourage centrifugal tendencies as zamindars and merchants looked increasingly to the resources and powers at the coast. In the course of time, zamindars and merchants tended to distance themselves from the imperial centre at Delhi. Did the integration of markets in the eastern Ganga plain with the maritime global economy encourage the centrifugal tendencies and contribute to the decline of the Mughal Empire? In order to explain this question in Chapter 7, the next two chapters will first examine the extent to which the local commercial economy was integrated with the overseas markets.

¹²¹ NA, VOC, Inv. Nr. 1454, MvO Van Ommen to Vrolijkchart, 01.06.1688, fo. 750v; see also Prakash, *The Dutch East India Company*, 59–60.

Appendix I

Pargana	Distance and direction from Patna in kos	Area of pargana in kos	Total opium production in Patna man	Type of land	Administration
Bihar	10 / S	96	700	khalisa	faujdar
Malda	12 ½ /SE	20	500	khalisa	faujdar
Sammoij or Jamui	8 ½ /S	32	900	khalisa	<i>karori</i> ¹²²
Oukrij	15/S	22	200	khalisa	faujdar
Tilloren	9/ S:SE	25	250	jagir and khalisa	<i>mansabdar</i> (military rank holder) and <i>karori</i>
Bilhour	12/ S: to E	31	200	jagir	faujdar
Pilts	10/ SE: to E	19	200	khalisa	<i>karori</i>
Ichel	17/ SE	20	250	jagir	<i>mansabdar</i>
Geaaspour	4/ E:S:E	140	700	jagir	jagirdar/ on behalf of Wazir Asad Khan
Bhempour	3/E:S:E	12	100	khalisa	<i>karori</i>
Sjaszampour	8 ½ / E:S:E	10	100	khalisa	<i>karori</i>
Bissoork	10/ S	20	250	khalisa	<i>karori</i>
Somoot	16/S	20	250	khalisa	<i>karori</i>
Pattena		16	100	jagir	Nawab
Pholwarij	5/W	15	300	jagir	<i>request meester aan 't hoff</i>
Bellia	8 ½ / W	11	400	khalisa	on behalf of the king
Total produce of the above parganas			5400: man		

Table 4.1. Pargana-wise distribution of best-quality opium production in the late seventeenth century.¹²³

¹²² The official who assessed the land under cultivation for revenue collection; see Chandra, *Medieval India*, pt. 2, 150.

¹²³ NA, VOC, Inv. Nr. 1454, MvO Van Ommen to Vrolijkchart, 01.06.1688, fos. 766r–767v. See also, Van Galen, “Opium in de intra-Aziatische handel,” 38–39. There is a slight omission in the calculation of opium production in various parganas given in Van Galen’s MA thesis; he seems to have skipped to count the produce of Phulwari pargana.

Pargana	Distance and direction from Patna in kos	Area of pargana in kos	Total opium production in man	Type of land	Administration
Monneer	6/ W:N:W	35	100	khalisa	karori
Ara	11 ½ / W	12 parganas area not specified	700	khalisa and jagir	faujdar and mansabdar
Zijrant and Mansij	12 & 15/ NW and W: NW	12 or 14	600	khalisa	karori
Casmen	2/ N:NW	45	100	jagir	Jagirdar of 150 sawar (horses)
Bael and Goa	13 and 16 ½ / NW	97	500	jagir	Nawab
Bara Bareij and Siopparen	27,28 & 36/ W:NW and NW	74	250	khalisa/Jagir	faujdar and karori
Ferrua [Fatuha?]	2/ N:NE	35	200	jagir	faujdar on behalf of Patna's subadar (viceroy or governor of a provincial)
Melckij and Bellia	22 ½ and 40/E	86 (both of these)	200	khalisa	karori
Weslij[?]	27/ N	160	50	khalisa	karori
Rettij	8/ N: NW	40	100	jagir	15 to 20 small mansabdars
Bissara	5/ N	150	100	jagir	jagirdar/ on behalf of Wazir (minister Asad Khan)
Saressa and Derbenga	12 ½ and 25/ NE and E:N:E	129	150	jagir	Jagirdar and Nawab
Bagelpour, Saroij, and Sijangijra[Jahangira?]	50, 55 and 70/SE and SE to E	95 or 100 together	250	khalisa	karori
Total produce of inferior-quality opium			3300 man		
Total production (superior and inferior quality) opium of Bihar			8700 man		

Table 4.2. Pargana-wise distribution of inferior-quality opium production in the late seventeenth century.

Appendix II

Year	Patna	Hugli
1702	—	282
1703	—	304
1704	—	290
1705	—	260
1707	142	277
1711	—	363
1712	—	363
1713	208	292
1714	209	—
1716	225	—
1717	306	—
1718	252	345
1719	266	400
1720	260–280	416
1721	282–286	—
1724	214	—
1729	221–238	—

Table 4.3. The purchase price (in rupees) of opium in Patna and Hugli for each *kist* of 145 Dutch pounds.¹²⁴

¹²⁴ Van Galen, “Opium in de intra-Aziatische handel,” 41, citing *Generale Missiven*, vols. 6 and 7; also see, Coolhaas, ed., *Generale Missiven*, vol. 8:229, De Haan, Huysman, enz. XV, 31.01.1729.

Chapter 5

Ganga-global: Dynamics of Market Integration

*And this is so far true, that were it not for the purchases of Saltpetre, Opium, raw Silk, and white Piece-goods which the English make yearly throughout Bengal and Bahar, probably a Rupee or an Eshreff would have become in most hands as scarce as the Philosopher's Stone.*¹

*Saltpeter, is a Commodity so necessary, that we can neither Fight nor Trade, or send a Ship to Sea, without it; and in time of War especially, it is our Interest to buy it, if it cannot be procured otherwise, of our Enemies.*²

Introduction

In the previous chapter we discussed the commercial potential of the Ganga economy. As we saw, the eastern Ganga plain had a thick concentration of population, an abundance of labour, rich and fertile agricultural lands, stable supplies of minerals such as saltpeter, and a well-established market economy. These positive factors naturally contributed the expansion of trade and the region's linkages with the global economy during the early modern period. Also contributing to the expansion of trade was the accessibility of the markets of Bihar to long-distance merchants. The growth of trade and economy in the Ganga plain had been a two-way process: when the internal dynamics interacted with the external stimuli such as bullion, skills and goods, such exchanges led to wide-ranging economic transformations. In Chapter 2 we saw this happening during the mid-first millennium BC. Once again, at the turn of the first millennium AD, the arrival of the Turko-Afghan conquerors with their mobile resources and political infrastructure spurred urban development and commercial activities in the Ganga plain. I suggest the unfolding of identical political-economic processes in the Ganga plain once again in the age of maritime commerce, when the long-distance overland and maritime merchants exchanged their bullion with commodities of the Ganga plain.

This is not to argue that economic growth of the Ganga plain was solely dependent on external stimuli. No less important for the region's economic performance were internal dynamics such as agrarian expansion, urban development, and population growth. As we noted in Chapter 2, there was an eastward movement of

¹ Gulām Husain Khān Tabātabā'ī, *A translation of the Seir Mutaqherin; or View of modern times*, in 4 vols. (Lahore: Sheikh Mubarak Ali, 1975), 3:32; also cited in James W. Frey, "The Indian saltpeter trade, the military revolution, and the rise of Britain as a global superpower," *The Historian* 71:3 (2009): 532.

² *Reasons humbly offered to the consideration of the honourable House of Commons, for the passing of a bill now depending for the importation of salt-petre: occasioned by a printed paper, called The salt-petre case* (London, 1693), n.p.

the agrarian frontier since the early second millennium AD. Since the Turko-Afghan conquest of the Ganga plain in the thirteenth century, the new regime primarily depended on agriculture for meeting its fiscal requirements. The political and agrarian frontiers were constantly pushed towards the Ganga delta and increased agricultural production created favourable conditions for the expansion of trade and commerce. The Turko-Afghan conquest also linked the Ganga plain with the wider Eurasian economy through the overland route, while the coastal trade in Bengal received fresh momentum. Internal factors such as political consolidation, agricultural expansion (probably assisted by efficient hydraulic management), and demographic growth helped to energize the economy of the Ganga plain during the first half of the second millennium AD.³ As Victor Lieberman and others have argued in the case of Southeast Asia, this period also witnessed agrarian expansion and demographic growth in Pagan, Angkor, and Dai Viet. Polities such as Dai Viet oriented themselves towards the “coastal commercial zone” and ensured greater interaction with their “inland agricultural core.”⁴ As they exploited the profits resulting from overland and coastal trade, the Bengal Sultanates also followed a more or less similar trajectory of agrarian expansion along the mid- and lower reaches of the river. Important political centres such as Nudiya, Pandua, and Gaur (Lakhnauti) were conveniently located upstream on the Bhagirathi River, which facilitated riverine trade in goods produced in their agrarian hinterlands. Closer to the sea, the major riverine port of Satgaon (Saptagram) was located on the Sarasvati River, a tributary of the Hugli. The proximity to the coast privileged Satgaon, which flourished between fourteenth and sixteenth century. The port city was at the junction of river and maritime trade routes during the pre-Mughal period, and it was here that the agrarian economy met the overseas commerce, the scale of which remains unknown in the existing scholarship.

When the Mughal Empire was consolidating in the Ganga plain and pushing the political frontiers eastward, imperial initiatives once again helped integrate Gujarat and Hindustan with markets and ports in the eastern Ganga plain.⁵ Around the same time,

³ Victor Lieberman and Brendan Buckley, “The impact of climate on Southeast Asia, circa 950–1820: New Findings,” *MAS* 46:5 (2012): 1061–63. Lieberman and Buckley suggest that between tenth and thirteenth centuries mainland Southeast Asia experienced agrarian, population, and economic growth as a result of favourable climate. Given the geographical proximity of the Bengal delta and mainland Southeast Asia both the regions would have benefitted from a favourable climate. South Asian historiography has yet to offer some credible insights on demographic pattern in the pre-Mughal period. For a rare, brave attempt see Pran Nath, *A study in the economic condition of ancient India* (London: Royal Asiatic Society, 1929), 117–23. Nath multiplies the population figure given for ancient Vaishali (in Tirhut) in Buddhist sources for other regions of India. This leads to an erroneous figure of about 140 million, roughly the same that generally estimated for the subcontinent at the death of Akbar.

⁴ Victor Lieberman, *Strange parallels: Southeast Asia in global context, c. 800–1830*, vol. 2, *Mainland mirrors: Europe, Japan, China, South Asia, and the Islands* (Cambridge: Cambridge University Press, 2009), 16–17; for quotes, see John K. Whitmore, “The rise of the coast: Trade, state and culture in early Dai Viet,” *JSAS* 37:1 (2006): 122.

⁵ According to Lieberman and Buckley the weak monsoons during Little Ice Age between 1450 and 1600 oriented the mainland Southeast Asian polities towards the coast where they could exploit the resources of the maritime zone; see Lieberman and Buckley, “The impact of climate on Southeast Asia,” 1079. We do not know if the weak monsoons during the so-called Little Ice Age also compelled Akbar to

the process of global inter-connection also acquired unprecedented momentum. While the Portuguese and Spaniards had already maritime networks of global trade in the 1500s, towards the end of the century Dutch and English merchants began to participate in global maritime trade. In order to inquire into this coincidence of “run to the coast” by both the Mughals and Europeans, I shall briefly reflect on the broader phenomenon of globalization, by which I mean an increasing inter-connectedness of world regions. Scholars such as Ronald Findlay and Kevin O’Rourke have recently suggested that globalization might have started after the Mongol conquests unified the central Eurasian landmass in the thirteenth century.⁶ However, forces were already working towards such unification and regional inter-connection within the Eurasian landmass in an earlier period.⁷ Some scholars even consider the history of the modern world system going back at least five thousand years. For them there were many world systems without a worldwide reach. Indeed, looked at from this perspective the origins of globalization in the sense of growing economic, political and cultural interactions among societies or regions of the world could stretch back to many millennia.⁸ In a way, such interactions certainly brought different societies of the world closer.⁹ The Indian subcontinent had been historically an open society with links to the outside world millennia before Europeans arrived by sea in the late fifteenth century.¹⁰ In this study, however, our definition of globalization will imply the economic interconnectedness of the Indian subcontinent and its commercial interaction with the outside world in the age of maritime commerce. I shall argue that rather than being a passive recipient of the globalizing impulses coming from the West, the Ganga plain was a prominent node of global interconnectedness, and that the region had its own economic and political dynamism. In the age of maritime commerce, the Ganga plain’s capacity to furnish trade goods and attract bullion should be seen as a prominent feature

conquer the coasts and appropriate the wealth accruing from oceanic trade in the second half of the sixteenth century.

⁶ Ronald Findlay and Kevin H. O’Rourke, *Power and plenty: Trade, war, and the world economy in the second millennium* (Princeton: Princeton University Press, 2007), 108. For the convergence of prices of commodities measured against the growing volume of trade as indicator of globalization, see Findlay and O’Rourke, “Commodity market integration, 1500–2000,” in *Globalization in historical perspective*, ed. Michael D. Bordo, Alan M. Taylor and Jeffrey G. Williamson (Chicago: University of Chicago Press, 2003), 13–64.

⁷ Richard M. Eaton, “Islamic history as global history,” in *Islamic and European expansion: The forging of global order*, ed. Michael Adas (Philadelphia: Temple University Press, 1993), 1–36. For the cultural contacts in Eurasia many centuries before Islam, see Richard H. Davis, *Global India circa 100 CE: South Asia in early world history* (Ann Arbor: Association for Asian Studies, 2009).

⁸ Andre Gunder Frank and Barry K. Gills, eds., *The world system: Five hundred years or five thousand?* (London: Routledge, 1996), see the introduction containing an historiographical survey of the world system and for a critique of Euro-centrism, 3–48. On globalization as a process, see also David Wilkinson, “Globalizations,” in *Globalization and global history*, ed. Barry K. Gills and William R. Thompson (London: Routledge, 2006), 68–78.

⁹ For the interactions among the regions of Eurasia, see Charles H. Parker, *Global interactions in the early modern age, 1400–1800* (Cambridge: Cambridge University Press, 2010).

¹⁰ G. Balachandran and Sanjay Subrahmanyam, “On the history of globalization and India: Concepts, measures and debates,” in *Globalizing India: Perspectives from Below*, ed. Jackie Assayag and Chris Fuller (London: Anthem Press, 2005), 18–43, for a critique of the umbrella term, globalization.

that linked the region with the outside world. Scholars debate the actual quantities of bullion reaching to the Indian subcontinent and its significance for the Mughal financial economy, yet the expansion of the Indian commercial economy can hardly be divorced from the favourable effects of bullion flow into the subcontinent, irrespective of its origin in America or Japan.¹¹ In Chapter 6, we shall see the dynamics of money supply in the Ganga plain.

This chapter is organized into two sections. Section one begins with a discussion of the internal consumption of goods produced in the eastern Ganga plain. While there may have been only modest demand for opium and saltpeter in the Indian subcontinent, textiles had a fairly large internal market. This shows that the region could not only cater to internal demand but also exported overwhelming quantities of goods to overseas markets. If we consider the internal trade and consumption and the export of textiles, it is hard to suggest that there was any de-industrialization in the eighteenth century. Section two goes into the details of global demand for these commodities and takes into account the markets in Europe, Southeast Asia and other parts of the world in order to put the commodities of Bihar into a global perspective. A consideration of the demand side of the market helps us to understand the economic dynamics in the Ganga plain. It is apparent that as a result of massive exports of commodities, the region attracted substantial quantities of bullion. The inflow of specie and growing monetization not only assisted taxation and agrarian expansion; it also had implications for the political economy and state formation.

Section I: The Integration of the Ganga delta, Trade boom and Internal demands for Commodities in South Asia

The historiography of the Bengal delta does not fully explain why the ports of the eastern and western delta, rather than co-existing and flourishing simultaneously, have in fact always alternated each other. During the first half of the sixteenth century, the western port city of Satgaon (Saptagram) on the Bhagirathi/Hugli branch of the Ganga was the commercial centre of the delta. Subsequently, for many decades we see a pull

¹¹ John Richards writes, “the disruptive effects of the post-1620s slowing of New World silver imports were felt, but do not seem to have had a calamitous effect in Mughal India,” see J. F. Richards, “The seventeenth-century crisis in South Asia,” *MAS* 24:4 (1990): 629. Shireen Moosvi suggests “a spurt in the influx of silver chiefly via the Levant” reaching India along overseas and overland routes during the second quarter of the seventeenth century; see “The silver influx, money supply, prices and revenue-extraction in Mughal India,” *JESHO* 30:1 (1987): 65–66. According to Om Prakash it was with the growing use of the Cape route by the European Companies from the early seventeenth century that “the full implications of the American silver mines for the Indian and other Asian economies began to be realized;” see *The Dutch East India Company and the economy of Bengal, 1630–1720* (Princeton: Princeton University Press, 1985), 6–7. Parthasarathi writes that between 1600 and 1800 the Indian subcontinent received 28,000 tonnes of bullion in silver equivalents (some gold but an overwhelming part consisted of silver), which was roughly a fifth of total world production (142,000 tonnes) during the same period. See Prasannan Parthasarathi, *Why Europe grew rich and Asia did not: Global economic divergence, 1600–1850* (Cambridge: Cambridge University Press, 2011), 46. See also, Ward Barrett, “World Bullion Flows, 1450–1850,” in *The rise of merchant empires: Long-distance trade in the early modern world, 1350–1750*, ed. James D. Tracy (Cambridge: Cambridge University Press, 1993), 224–54.

towards the eastern delta, where Chittagong attracted increasing numbers of merchants and merchandise. After the 1640s, we find the Bhagirathi-Hugli again emerging as a commercial centre where the European Companies, among other merchants, established their factories and warehouses in the port city of Hugli. It appears as the pre-Mughal economy of Bengal was incapable of maintaining two primary ports on either side of the delta.

In 1567 Frederick Caesar visited Satgaon, which he found “a reasonable faire Citie” and about thirty or thirty-five “great and small” ships departed from the Port of Satgaon. Perhaps he was already making a distinction between the city and the port of Satgaon and the latter would have been further downstream in order to be accessible for the sea-going ships. With the decline of Satgaon in the second half of the sixteenth century, Chittagong (Chattagram, or Mughal Islamabad) emerged as an important port in the eastern delta. In 1569, Caesar called it the “great Port of Bengala” where there were eighteen Portuguese vessels of various sizes.¹² Bakla (Bakarganj), Sripur, Sonargaon, Loricul, Dianga and Dhaka and other river ports also benefitted as trade gravitated to the eastern delta.¹³ In the early seventeenth century the western delta and Hugli port probably remained commercially less attractive, which probably explains why the European Companies set up their bases in the Arakan/Chittagong region in the east and at Pipli and Balasore in the southeast. It is only around mid-century that we find the Companies establishing factories along the Hugli/Bhagirathi in the western delta, an area that Eaton regarded as moribund and agriculturally less productive than the eastern delta after the late-sixteenth century.¹⁴

Tirthankar Roy explains this westward commercial orientation in terms of environment, notably the shifting sandbanks of the eastern delta.¹⁵ While the explanation is partly valid, it does not give a full picture. After all, the Bhagirathi-Hugli River was also treacherous for boats, and sandbanks and shallow waters often created problems in the western parts of the delta. As we noted in Chapter 3, boats plying the Ganga between Hugli and Patna frequently met with accidents as a result of sandbanks, storms, and inclement weather. However, the difficulties failed to discourage determined traders from operating at places where profits were within easy grasp.

Scholars complain about the lack of archaeological and historical geographic data to solve the problems about the rise and decline of ports in Bengal. As the question is still out for the jury, we may speculate that during the pre-Mughal period the western

¹² M. Caesar Frederick, *The voyage and travail of M Caesar Frederick, merchant of Venice, into the East India, the Indies, and beyond the Indies . . . out of Italian*, by Thomas Hickock (London, 1588), 23, 36. See also Samuel Purchas, *Hakluytus posthumus or Purchas his pilgrims, contayning a history of the world in sea voyages and lande travells by Englishmen and others*, vol. 10 (Glasgow: University/MacLehose, 1905), 114, 138.

¹³ J. J. A. Campos, *History of the Portuguese in Bengal with maps and illustration* (Calcutta: Butterworth, 1919), 66–95, 112–13.

¹⁴ Richard M. Eaton, *The rise of Islam and the Bengal frontier 1204–1760* (New Delhi: Oxford University Press, 2006), 195–200.

¹⁵ Tirthankar Roy, *India in the world economy: From antiquity to the present* (Cambridge: Cambridge University Press, 2012), 64–68.

and eastern delta may have competed with each other for attracting trade. When Tamralipti in the western delta declined in the eighth century, the eastern delta seems to have drawn trade and Chittagong emerged and flourished until it was over-shadowed by Satgaon by the end of the fifteenth century. Thus, once again the balance shifted in favour of the western delta although it lasted less than three quarters of a century. Aniruddha Ray suggests that even though Satgaon was founded in the thirteenth century, probably it started functioning as a seaport rather than an inland port only in the second half of the fifteenth century. In 1457, the shift of the capital from Pandua to Gaur, which was closer to Satgaon, enhanced the profile of the port.¹⁶ As the southern channel (called the Sarasvati) of the Bhagirathi-Hugli silted, Satgaon declined in the 1570s. We do not know if the silting of the Sarasvati and the drying up of the Karatoya was the result of diminished rainfall and the weak flushing capacity of the river currents during the Little Ice Age of the sixteenth century. As Lieberman and Buckley have shown recently, Thai tree-rings indicate a weak monsoon in the second half of the sixteenth century when Lower Burma and northern Vietnam suffered famines and political disturbances.¹⁷ In any case, from the second half of the sixteenth century Chittagong once again attracted a large share of the commerce and it remained important until about the mid-seventeenth century, when this back and forth shift in the centre of commercial gravity in the delta stabilized somewhat. Two factors explain this. First was probably a stronger monsoon and improved rainfall in the seventeenth century, which might have helped the Hugli to regain the force of its stream and made it possible for large ships to reach the upriver ports of Chinsura and Chandranagore.¹⁸ A second and probably more important factor was the Mughal integration of the eastern and western deltas, which fuelled an unprecedented commercial boom after the latter half of the seventeenth century.

From the last quarter of the sixteenth century, the Mughal conquest of the western Ganga delta gave a fillip to agrarian and commercial expansion there. Richard

¹⁶ Aniruddha Ray, "The rise and fall of Satgaon: An overseas port of medieval Bengal," in *The Indian trade at Asian frontier*, ed. S. Jeyaseela Stephen (New Delhi: Gyan Publishing, 2008), 71–5. As Ray points out, during the first half of the fifteenth century four Chinese delegations arrived at Chittagong in the east and not at Satgaon in the west from where the capital of Bengal, Pandua, was very close; on Saptagram see also Niharranjan Ray, *History of the Bengali people (ancient period)*, trans. John W. Hood (Calcutta: Orient Longman, 1994), 247; also Rila Mukherjee, "An elusive port in early medieval Bengal: The mystery of Samandar," in *The Indian trade at Asian frontier*, ed. Stephen, 58. Mukherjee suggests that the environmental, political and policy changes effected the westward shift of economic focus in the delta during the sixteenth century, see 57–8.

¹⁷ Lieberman and Buckley, "The impact of climate on Southeast Asia," 1058, 1083.

¹⁸ We do not know whether the unusual floods of the seventeenth century cleared the silt from the Hugli and deepened its channel. For the floods in 1662 which was unprecedented in the last thirty years, see W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 3, 1655–1674 ('s-Gravenhage: Martinus Nijhoff, 1968), 444, Maetsuyker, Hartsinck, enz. XXVII, 26.12.1662: "Edoch soo continueert dat rijck gespin door 't extraordinarij hoog opperwaeter, diergelijcke naer 't seggen van oude luyden in 30 jaeren niet en soude sijn geweest," [emphasis added]; also 548–49, Maetsuyker, Hartsinck, enz. XXXVI, 25.01.1667. For an erratic monsoon and draught throughout the Bay of Bengal region in the seventeenth century, see Lieberman and Buckley, "The impact of climate on Southeast Asia," 1088.

Eaton suggests that the areas around Kasimbazar in western delta produced marketable commodities such as raw silk and cotton textiles while the eastern delta grew more rice for both domestic consumption and export. Furthermore, the Mughal integration of the towns of western delta assisted the growth of sophisticated market institutions by linking the eastern Ganga plain with the wide-ranging commercial networks that spanned Hindustan and Gujarat. The Khatri, Marwari Hindus, and Jain, among other groups, controlled the market institutions that facilitated the transactions of merchandise and provided credits to the peasants and artisans. As a result of political, agricultural, and trading activities, there emerged a commercial corridor between Patna and Hugli along the Ganga between the last quarter of the sixteenth and the first half of the seventeenth century. Patna, Rajmahal, Maksudabad (Murshidabad since 1704), Kasimbazar, and Dhaka functioned within this commercialized zone. The westward commercial orientation of the delta may also be explained in terms of the fluid political situation in the eastern delta and the deleterious effects of a combination of slave hunting and forced mass migration from Chittagong to Arakan, which caused labour shortage in the region.¹⁹ As Van Galen notes, mid-seventeenth-century Dutch reports suggest that textile production in Chittagong overwhelmingly depended on cotton supplies coming in from Tripura rather than on those from Gujarat or the Deccan. This means that the eastern delta was yet to be integrated with the Mughal political economy. Another problem for the commercial growth of eastern delta was the weak Mughal presence in those parts. Therefore, the economic and commercial expansion continued in the western parts of the delta where the European Companies began to open their factories in the 1640s.

The process of agrarian expansion continued from the period of the Bengal Sultanate (Ilyas Shahis and Hussain Shahis from the late fourteenth to sixteenth centuries) to the Mughal conquest in 1576. This was aided by endogenous factors such as the state's need to extract more fiscal resources, the expansion of paddy cultivation, and demographic growth, and exogenous factors such as the growth in long-distance overland and maritime trade and the inflow of bullion. Thus, agrarian expansion and trade seem to have mutually enforced each other, which further encouraged craft specialization and urban growth. As we noted in Chapters 3 and 4, the towns along the Ganga drew considerable quantities of merchandise and services from their populous and productive hinterlands. In logistical terms, the Ganga connected commercial towns along its banks and facilitated the movements of goods, services, and credit. Such

¹⁹ Eaton, *The rise of Islam*, 200–203; Stephen Egbert Arie van Galen, “Arakan and Bengal: The rise and decline of the Mrauk U kingdom (Burma) from the fifteenth to the seventeenth century AD,” PhD diss., Leiden University, 2008, 157–64. For fluid political conditions, see Rila Mukherjee, “The struggle for the bay: The life and times of Sandwip, an almost unknown Portuguese port in the Bay of Bengal in the sixteenth and seventeenth centuries,” *Revista da Faculdade de Letras: História*, 3rd ser., 9 (2008): 67–88. The Mughals, after conquering Chittagong in 1666, drove away the Arakanese involved in kidnapping slaves and this measure hampered the Dutch procurement of slaves; see Richard Eaton, “Introduction,” in *Slavery and South Asian history*, ed. Indrani Chatterjee and Richard Maxwell Eaton (Bloomington: Indiana University Press, 2006), 12–13; see also Andrea Major, *Slavery, abolitionism and empire in India, 1772–1843* (Liverpool: Liverpool University Press, 2012), 51.

connectivity also brought transparency in market operations as information about the commodity prices and credit circulated with relative ease. These infrastructure and market institutions facilitated both overseas trade and internal trade within the Indian subcontinent.

Given the fragmentary nature of sources, scholars have rarely attempted to reconstruct the internal consumption markets for various goods produced in early modern India. I shall make a modest attempt to figure out the internal demand for eastern Indian commodities in the different parts of the subcontinent. For their needs and consumption, not all regions of South Asia were self-sufficient and there was considerable interregional trade in various goods. For instance, cotton weavers in Bengal and Bihar often relied on raw cotton supplied from Gujarat and the Deccan, while craftsmen in different towns and cities of Gujarat needed a regular supply of raw silk from Bengal. Evidence is less clear about saltpeter, but opium was taken to other parts of the subcontinent. As we will see, this internal trade along with the overseas commerce generated dynamism in the Bihar markets. Existing evidence hardly allows a reconstruction of trade balances between different regions, but at least we can discern some trends in commodity flows within South Asia.

Saltpeter Consumption in South Asia

Though a large share of Bihar saltpeter was intended for export, as we shall see below, there was some internal demand. Based on Van Ommen's report of 1688, Om Prakash suggests that towards the end of the seventeenth century about seventeen percent of the 127,238 *man* of refined saltpeter produced in Bihar was consumed in India.²⁰ Unfortunately, he does not say who consumed this roughly 21,600 *man* of saltpeter except to suggest that Bihar consumed only 5.5 percent and 11.75 percent was sent to other parts of Bengal. Saltpeter was needed for ice making, for preserving perishable grains, metalworking, textile dyeing, and most importantly, for gunpowder making. We can assume that saltpeter was in demand by people in all these industries.

From the *Ain-i-Akbari* we know that saltpeter was used for cooling water and possibly for making ice by Akbar's chefs at Agra. Cool drinks and ice beverages were not limited to the royal kitchen, and the Mughal rank holders and zamindars would also have consumed dishes and drinks prepared with ice during the hot and humid tropical weather of India. The Arabic word *sorbet* for ice-cooled sweet drinks became current in the medieval period and ice-consumption was undoubtedly more widespread in subsequent periods. According to Chris Clarke, ice making was known to the Indians probably from the early centuries AD, and an Indian poem from the fourth century AD describes the process of ice making, which includes saltpeter (potassium nitrate). A thirteenth-century Arabic medical textbook and another Arabic work describing the recipe of *sorbet* also give details of ice making.²¹ If *sorbet* became a common drink for

²⁰ Prakash, *The Dutch East India Company*, 59.

²¹ Abu'l-Fazl Allami, *The Ain-i-Akbari*, trans. H. Blochmann, vol. 1 (1927; repr. New Delhi: Oriental Books Reprint, 1977), 58. See also J. Burton-Page, "Matbakh in Mughal India," in *The encyclopaedia of*

elites in medieval India, and gradually in the course of later centuries for other well-off sections of society, the demand for saltpeter for ice making would have increased. However, it is impossible to quantify such demands.

Another and perhaps more common use of saltpeter was as a preservative, as indicated in Dutch sources.²² Again, we know hardly anything about how widespread this practice was, and how much saltpeter was consumed for protecting food grains from worms and rotting. If it was used by peasant households and in grain merchants' storehouses, saltpeter consumption would have been reasonably high. Yet another use of saltpeter was in metal-working, and metallurgists required it for smelting and refining iron, copper, silver and other metals for making swords, canon, and utensils, and for minting coins. Apart from its military uses, increased quantities of iron would have been needed to supply a growing population of peasants with agricultural tools and to some extent for fastenings for boats and anchor making.²³ There is no data available about iron consumption within the Mughal Empire but given the prominence of agriculture, this sector alone would have required large quantities of the metal. Although there was a local supply of iron from the ores of southern Bihar and from Bundelkhand, yet eighteenth-century shipping lists show consignments of iron imported into Bengal by European and Asian merchants.²⁴ Import of iron implies a growing consumption of the metal for which local supply would have been inadequate. Furthermore, gold- and silversmiths working in Mughal mints, as well as those making jewellery, needed saltpeter as a fluxing material. Therefore, the metallurgists and

Islam, ed. C. E. Bosworth, et al., New Ed., vol. 6 (Leiden: Brill, 1989), 814; Chris Clark, *The science of ice cream* (Cambridge: The Royal Society of Chemistry, 2012), 6; T. A. Wise, "Ice-making in the tropics," *Nature* (January 4, 1872): 189–90. Wise observed the process of artificial ice making in Bengal, which he believed continued from time immemorial and he expressed a word of appreciation for the native practicing the science without knowing its theory. Although Wise does not talk of the use of saltpeter and sal ammoniac and gives more attention to wind pattern and electric activity of straw placed in the ice pits, it would have been impossible to make ice without saltpeter.

²² See for the use of saltpeter in preserving wheat, NA, VOC, Inv. Nr. 1277, "Memoria raackende 's Comp:s voordeligen handel," 20.12.1669, fo. 1424r.

²³ See for instance Bakarganj, in Bengal, a boatyard where the Dutch captain had the boats anchors made, NA, VOC, Inv. Nr. 8772, From Hugli to Batavia 05.03.1733, "Daghverhaal van de Reijse met 's E Compn: Chialoupen en Bassura als eenige Oulacken," entries of 15, 16, 17 and 18.12.1732, pp. 1469–71. For the use of saltpeter in refining gold and silver, see A. Campbell, "On the Nepalese method of refining gold," and J. P., "Note on the above paper," *Journal of the Asiatic Society of Bengal* 3:36 (December, 1834): 622–25.

²⁴ NA, VOC, Inv. Nr. 2862, From Hugli to Batavia 15.12.1754, "Missive van de afgaande en aankomende directeurs and raad aen den Hoog Edelens in dato 15 dec.1754," p. 166; NA, VOC, Inv. Nr. 2862, "Lijst van zodanige inlandsche en andere vreemde schepen als gedurende deese zijder mousson successive in de Ganges verscheenen zijn," Hougly in't Fort Gustavus den 16.12.1754, pp. 836; in 1769 the Dutch sold different types of iron weighing about 12,000 pounds in Patna, see NA, VOC, Inv. Nr. 3284, "Generaal rendement van zodanige handelwaaren als er gedurende dit boekjaar 1768/9," comptoir Patna, 01.08.1769, fol. 397r. For the Swiss imports of iron in Bengal, see Christian Koninckx, *The first and second charters of the Swedish East India Company, 1731–1766* (Kortrijk: Van Ghemmert, 1980), 92.

smiths working with different types of metals would have depended on a constant supply of saltpeter.²⁵

Saltpeter would have been used by firework-makers whose services were required primarily by the elites, the Mughal rank holders, and other well-off members of society during the festive occasions from at least the fifteenth century.²⁶ Based on Francis Buchanan's report of there being 162 *atishbāz*, or firework-makers, in Patna, Behar and Bhagalpur, a source of 1841 estimates the total quantity of saltpeter consumption in these districts at 50,000 *man* for fireworks alone. This appears to be an exaggeration for two reasons. First, the British official was concerned about the loss of revenue on the sale of government monopoly salt because of the unauthorized manufacture of salt (*puckwah* and *fool-kharee*) from saltpeter. Hence exaggerating the amount of saltpeter used in this way could help explain the loss of revenue from the diminished sales of government salt. Second, the method of calculating the amount of saltpeter used in firework-making is also problematic, for Piddington assumes that the *atishbāz* were employed on a year-round basis, which might not have been the case, and their total annual salary of 42,768 rupees (which is again an inflated figure based on twelve-month employment) constituted ten percent of the total capital (437,680 rupees) employed in the fireworks industry. He further assumes that at least three-quarters of the gross capital (or 300,000 rupees) were employed in procuring saltpeter for this industry. At the prevailing rate of 6 rupee per *man*, this yields a figure of 50,000 *man* of saltpeter used in making fireworks.²⁷ Another use of saltpeter was for bleaching and dyeing textiles.

If so much Bihar saltpeter was being diverted into these manufacturing sectors, one wonders how much would have been left for making gunpowder for the Mughal arsenal. Gujarat and Awadh produced saltpeter too, and the Mughals would have drawn upon those sources of supply for gunpowder manufacturing. However, we know that owing to its ballistic capacity or propulsion charge Bihar saltpeter was considered the best in the world during the early modern period.²⁸ It is highly unlikely that the

²⁵ On the basis of a contemporary chronicler in 1665–1666, Shihab al-Din Talish, Eaton refers to the following event: “before embarking on the expedition, the Mughal commanders in Dhaka supplied their troops with thousands of axes, for the army had literally to hack its way through the dense jungle down Chittagong coast from the Feni to the Karnauli rivers.” For the use of saltpeter in refining gold see Eaton, *The rise of Islam*, 236; Lance Day, “The chemical and allied industries,” in *An encyclopaedia of the history of technology*, ed. Ian McNeil (London: Routledge, 1990), 221.

²⁶ For a fifteenth-century Persian work referring to the fireworks makers' use of saltpeter in Bengal see Iqtidar Alam Khan, “Early use of canon and musket in India: A.D. 1442–1526,” *JESHO* 24:2 (1981): 149; see also Frey, “The Indian saltpeter trade,” 512.

²⁷ Henry Piddington, Esq., “Report to the secretary of the board of customs, salt and opium, on the salts, called puckwah and phool-kharee; with a process for detecting the adulteration of government salt; estimates of the quantities of both Salts annually produced, and of the amount of loss which the Revenue may sustain through the production of these two articles,” *Journal of the Asiatic Society of Bengal* 10:2 New Series (1841): 948–49.

²⁸ On high quality of Indian saltpeter, see Frey, “The Indian saltpeter trade,” 511; although the Deccan produced saltpeter, the Qutub Shahi kings imported good quality saltpeter from Bengal through the coastal route; see R. Balasubramaniam and S. Jai Kishan, “Saltpetre manufacturing and marketing in medieval India,” *IJHS* 40:4 (2005): 668.

Mughals would have utilized inferior sorts from other regions for their own ammunition requirements. Yet as is the case with other saltpeter-consuming industries, the data on the Mughal ammunition manufacturing and saltpeter consumption are hard to come by. Dutch records occasionally mention some instances when the Nawab at Patna forced merchants to supply saltpeter for the gunpowder mill. On one occasion, the Nawab sought larger quantities of saltpeter from the Companies. In 1732, the Dutch captain Van der Bruggen alerted his militia in order to prevent the Nawab from seizing a few hundred bags of saltpeter for his own gunpowder production.²⁹ When Marathas raided Bengal in 1743, the Nawab demanded three to four *man* of gunpowder and an equal amount of lead from the Dutch.³⁰ From these instances it appears that the Mughals did not have a sound mechanism through which they could get a regular supply of saltpeter. When there was a need, the individual mansabdar was obliged to buy saltpeter in the open market from vendors and merchants. If saltpeter consumption by the Mughal army was so irregular, and ammunition production was so haphazardly organized, then it raises serious doubts about the Mughal polity being a gunpowder empire in the sense Marshall Hodgson and others have proposed.³¹ Instead, it was an

²⁹ J. van Goor, ed., *Generale Missiven van Gouverneur-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 9, 1729–1737 ('s-Gravenhage: Bureau der Rijkscommissie voor Vaderlandse Geschiedenis, 1988), 309, Diderik Durven XVII, 14.02.1732; NA, VOC, Inv. Nr. 2153, “Een briefje van de ministers ten comptoire Cossembazaar op den 29 der even afgewekene maand gedateerd en gerigt ten geleide van ditto door de Pattenase bediendens in dato 20 dier zelve maand herwaards gesonden,” Houglys Dag-Register, entry of 1.04.1730, fos. 8716v–8717r: “en ’t doen van gewone halve voor uitverstreking daar op advertentie van dat deze negotie nog al een tamelijke voortgang had, dog dat ze bedugt waren dat zulx geen stand houden zoude omdat ’s Nawabs kruijtmakerije in Pattenase gesprongen sijnde hij ligtelijk d’ E: Comp: wel een portie van deze schade doen dragen zoude,” Quote is from fo.8717r. As there was an explosion in the Nawab’s powder mill at Patna, he tried to persuade the Company also to bear some damage. In 1732, the Hugli Dagregister discusses a letter from Patna and the Nawab’s demand for 500 *man* of saltpeter for his gunpowder mill, “gelijk ook de pretentie des Nawabs om 200 mn: kalk tot het opbouwen van een accademie en 500 mn: salpeter tot zijn kruijtmakerij, wijders communicatie dat ze nog 4 pions en 2 nagtwaakers in dienst hadden genomen tot bewaken van het aangekomene lijwaat.” See NA, VOC, Inv. Nr. 2288, “Houglij’s dagregister van den jaare 1732,” entry of 8.05.1732, pp. 853–854. In a similar fashion, the Nawab put some horsemen and pion at the gate of English factory in Patna demanding 20,000 *man* of saltpeter. It is not clear whether the English obliged him. See, BL, APAC, IOR/G/28/2, Patna Factory Records, vol. 2, 11.07.1744, n.f.

³⁰ J. van Goor, ed., *Generale Missiven van Gouverneur-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 10, 1737–1743 (Den Haag: Instituut voor Nederlandse Geschiedenis, 2004), 1056, Thedens VIII, 05.04.1743: “Dog het een nog het ander was van gevolg geweest, gelijk ook met der ministers reeds toegestaane versoek van den nawab om 3 à 4 maon buskruyt en zoveel loot, omdat die van Cassembazaar voor de bekome qualificatie reeds daarvan g’excuseert hadde.” Also in 1719 when the Nawab of Patna was fighting against rebellious Rajput chief at Bhojpur, the Nawab asked the VOC to provide 12 canons and a loan of 50,000 rupees. See W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneur-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 7, 1713–1725 ('s-Gravenhage: Martinus Nijhoff, 1979), 429, Zwaardecroon, Castelijns, enz. IV, 30.11.1719.

³¹ Marshall G. S. Hodgson, *The venture of Islam: The gunpowder empires and modern times*, vol. 3 (Chicago: Chicago University Press, 1974), 17–18. For a critique see Douglas E. Streusand, *The formation of the Mughal empire* (Delhi: Oxford University Press, 1989), 11–15; for ambiguities in Streusand’s position about the role of artillery in Mughal warfare and the centralization of the Mughal state see also Sanjay Subrahmanyam, “The Mughal state—structure or process? Reflections on recent western historiography,” *IESHR* 29:3 (1992): 302.

empire primarily based on cavalry, for which saltpeter would have been of limited use. While artillery and infantry played some role in Mughal warfare in the sixteenth and seventeenth centuries, by the eighteenth European infantry, superior organization of military, political and financial prowess which outgunned Mughal firepower.³²

As far as the outflow of this strategic silt from the Mughal Empire was concerned, barring a couple of instances, the European Companies hardly encountered any resistance from the Mughals in their saltpeter procurement from Bihar or other parts of India. As there were hardly any restrictions placed on the sale of saltpeter, zamindars and other warlords could have easily procured it on the open market, if the mineral was not already produced in their fiefdoms. Interestingly, some zamindars had already secured better canons and guns from the Dutch, a fact about which the Nawab expressed serious displeasure.³³ The Bihar zamindars were certainly leaning more towards muskets, canons and saltpeter, yet the Mughals seems to have relied primarily on cavalry to subdue chieftains from the hills and jungle of southern Bihar. Considering the consumption by zamindars, metallurgists and fireworks makers, the consumption might have grown during the eighteenth century, but the internal consumption hardly matched the export figures.

Opium Trade and Consumption in South Asia

Was there an internal market for Bihar opium in South Asia during the early modern period? If yes, how big was it and who were the consumers? An effort to answer these questions and reconstruct the internal trade network and consumption patterns is even more difficult than to ascertain the internal demands for saltpeter. Scholars of South Asian history hardly bother to raise these questions about internal trade, primarily because of the lack of data. I too acknowledge this handicap and frankly admit that my answer may not be precise; nonetheless an effort will be made to address them.

³² Jos Gommans, *Mughal warfare: Indian frontiers and high roads to empire, 1500–1700* (London: Routledge, 2002), 133–35. However, this is not to suggest that the British established their supremacy in India because of their military superiority, which is doubted in recent literature. It is claimed that British success depended more on their long-term financial capabilities and their capacity to muster large forces from within the Indian labour market; see Douglass M. Peers, “Revolution, evolution, or devolution: The military and the making of colonial India,” in *Empires and indigenes: Intercultural alliance, imperial expansion, and warfare in the early modern world*, ed. Wayne E. Lee (New York: New York University Press, 2011), 81–106. See also Bruce Lenman and Philip Lawson, “Robert Clive, the ‘Black Jagir’, and British politics,” *Historical Journal* 26:4 (1983): 808–9.

³³ NA, VOC, Inv. Nr. 8739, From Hugli to Batavia 09.04.1709, “Translaat van een vertoog brievesgewijse gesch: en in de Persiaanse tale opgesonden door den directeur Willem de Roo,...,” pp. 275–78, see esp. p. 277 for the accusation leveled on the Dutch that they assisted the raja Hierza (Heera Shah, the chief of Chakwars at Milki?, for more on his trade contract with the Dutch, see Chapter 7) with gunpowder and lead against the king Shah Alam. In 1717, the Nabab had fished from the river a heavy gun that, along with other war materials, was believed to have been given to Siddhist Narayan of Bhojpur a couple of years previously by the Dutch officials at Patna. “Denselven [Nabab] hadde ook bij het opvisschen uyt de rivier van een swaar stuk canon, ’twelk — Sedisnareyn eenigen tijd bevorens daarin soude hebben doen werpen, willen bewijzen, dat de Pattenase bediendens hem daarmede onder meer andere oorlogsbehoeften na sijn voorgeven van over twee jaren hadden geadsisteerd en waarover s’ dan almede opnieuw eenige moeyelijkheden van hem hebben moeten ondergaan.” see Coolhaas, ed., *Generale Missiven*, 7:284, Van Swoll, Castelijn, enz. XIV, 23.03.1717.

Evidence on opium use in northern India is hard to come by before the fourteenth century. Broadly speaking we can identify three categories of people who used the drug: people suffering from various ailments to whom the *vaidya* or *hakim* (Ayurvedic or Unani doctor) prescribed opium in a measured quantity; soldiers; and the elites. Sanskrit works such as the *Sharangadhara Samhita* (fourteenth century) and *Bhavaprakash* (sixteenth century) offer several preparations for opium. The drug was even more widely prescribed in the Yunani system of medicine for such diseases as migraine or hemicrania, joint-pain, lumbago (rheumatism of the loins), dysentery and diarrhoea. Apart from its use as aphrodisiac, opium was administered to those suffering from respiratory problems such as cough, asthma, and hiccups.³⁴ From the work of Amar Farooqui it appears that the drug was widely used in western India during the pre-colonial period.³⁵ The extent to which the nobility and elites consumed opium is not entirely known; yet Mughal emperors such as Akbar and Jahangir routinely ate opium, which was also a favourite drug among the Rajput rulers of western India.³⁶ Fragmentary evidence indicates the use of opium by the army of Murshid Quli Khan in order to allay the tedium of long marches.³⁷

Although the overseas markets received a large part of opium, there was also demand within South Asia. The early sixteenth-century account by Duarte Barbosa mentions opium being a trade item among other goods at Cambay in Gujarat.³⁸ From the evidence presented in the Dutch records, we know that small quantities of opium were also brought to Gujarati ports from Mocha during the early seventeenth century, even though there was an Indian variety of opium in the market.³⁹ From the data given by the Dutch historian C. G. Brouwer, the quantities of Yemeni and Turkish opium brought to Gujarat do not appear to be large and the drug was probably brought to serve the exotic tastes of the elites.

³⁴ Chopra, *Chopra's indigenous drugs of India*, 205–06. See also Amar Farooqui, *Smuggling as subversion: Colonialism, Indian merchants, and the politics of opium, 1790–1843* (Oxford: Lexington Books, 2005), 72.

³⁵ Farooqui, *Smuggling as subversion*, 71–74.

³⁶ Muhammad Azhar Ansari, *Social life of the Mughal emperors (1526–1707)* (Allahabad: Shanti Prakashan, 1974), 33.

³⁷ NA, VOC, Inv. Nr. 1796, From Hugli to Batavia 08.11.1710, “Verhaal gedaan door twee casseds of loopers in Febr: jongst leden van hier over ’s Conings Zaeh Alems leger naar Suratta vertrocken, en den 26 maij 1710 weder geretourneerd,” pp. 166–67: “Maer verblijf van een nagt sijn ’s uijt het leger vertrocken, en hebben 10 mijlen herwaarts aan, ontmoet den heer Morsidcoelikhan tot renthmaur [Ranthambhour] (een formidable fortresse) die in aantogt naar herwärts was, en sijn sij naar 4: dagen gaans, tot Agra, en van daar in 11 dagen tot Patna, en vervolgens in 10 dagen van Patna alhier aangekomen hebben veel honger en kommer uijt gestaan en haar om de dorst te dooden met amphioen moeten behelpen, waer door heel uijtgeteerd sijn, en hebben een spetie van de vallende siekte gekregen.”

³⁸ Duarte Barbosa, *The book of Duarte Barbosa: An account of the countries bordering on the Indian Ocean and their inhabitants, written by Duarte Barbosa, and completed at about the year 1518 A.D.*, trans. Mansel Longworth Dames (London: Hakluyt Society, 1918), 154–55.

³⁹ For trade in “Hindustani [opium] from Mirtha” in the western Indian Ocean network around the 1640s, see C. G. Brouwer, “Storehouse of stimulants opium in the markets of al-Mukhâ at the turn of the seventeenth century: Statements by the Dutch eyewitnesses,” *Itinerario* 32:2 (2008): 25, 29–30.

Since the Indian variety circulated along the trade networks of the Indian Ocean, there must have been some cultivation of opium on the Indian subcontinent from the sixteenth century. *Mirat-i-Ahmadi* mentions opium as a source of revenue in Ahmadabad during the reign of Sultan Muzaffar, well before Akbar's conquest of Gujarat in 1573.⁴⁰ From the testimony of Abul Fazl (circa 1595), we learn that opium was an excellent crop and presumably a source of revenue in Malwa.⁴¹ Around the first decade of the seventeenth century, the English merchant William Finch wrote of the fertile soil of Malwa "abounding with opium."⁴² Already in the late sixteenth century, another English merchant Ralph Fitch had noted opium being shipped down the Yamuna and at Patna he saw opium being sold in the market.⁴³ Therefore, even before opium became an important commodity for the European Companies' overseas trade, the drug was produced and sold in different parts of India. It is difficult to know how much was grown for local consumption⁴⁴ and how much was intended for export.

Dutch sources indicate that opium was traded between Bihar and Agra in the seventeenth and eighteenth centuries. For example, Van Ommen's *Memorie van overgave* (MvO) or final report of 1688 informs us that merchants from Allahabad, Agra and other places bought considerable amounts of opium. Though it is not clear from Van Ommen's testimony, it is likely that some of the opium bound for Agra was re-exported to Persia or the Gujarati ports. Van Ommen further relates that the merchants of Hugli, Balasore, and Dhaka purchased opium in varying quantities and that some was consumed in Bihar itself.⁴⁵ Sixty-seven years later, in 1755, another MvO by Luis Tellefert, the director of the Hugli factory, reported that merchants from upcountry (*bovenlandsche kooplieden*) bought 1,000 *kists* or 2,000 *man* while consumption in Bihar, Bengal, and Orissa was 500 *kists* or 1,000 *man*.⁴⁶ It is highly likely that the roughly 1,000 *man* of opium purchased by Hugli and Balasore merchants was re-exported overseas or was sold to European private merchants. From both these Dutch reports we notice that while the quantity taken downstream to Hugli by Indian merchants remained almost the same, the amount sent upcountry or to Hindustan

⁴⁰ Ali Muhammad Khan, *Mirat-i-Ahmadi: A Persian history of Gujarat*, trans. M. F. Lokhandwala (Baroda: Oriental Institute, 1965), 13.

⁴¹ Abu'l Fazl Allami, *The Ain-i-Akbari: A gazetteer and administrative manual of Akbar's empire and past history of India*, trans. and ed. H. S. Jarrett and Jadunath Sarkar, vol. 2 (1949; repr. New Delhi: Oriental Books Reprint, 1978), 207; for reference to Fatehpur, Allahabad and Ghazipur as other regions of opium production before 1600 AD, see also Ram Nath Chopra, *Chopra's indigenous drugs of India* (1933; repr. Calcutta: U. N. Dhur, 1958), 206; Sir George Watt, *The commercial products of India: being an abridgment of "The Dictionary of the Economic Products of India"* (London: John Murray, 1908), 847.

⁴² William Foster, ed., *Early travels in India 1583–1619* (1921; repr. New York: AMS Press, 1975), 142.

⁴³ Foster, ed., *Early travels in India*, 24.

⁴⁴ On his journey from Agra to Surat in 1633, the English merchant Peter Mundy noted the ways and methods of the drug consumption. It appears from his description that people consumed more of the by-products (such as "seede" and "huskes") of poppy rather than opium, see Peter Mundy, *The travels of Peter Mundy, in Europe and Asia, 1608–1667*, vol. 2, *Travels in Asia, 1628–1634*, ed. Sir Richard Carnac (London: Hakluyt Society, 1914), 247.

⁴⁵ NA, VOC, Inv. Nr. 1454, MvO Van Ommen to Vrolijchart, 01.06.1688, fo. 767v.

⁴⁶ NA, VOC, Inv. Nr. 2849, MvO Louis Tallefert to Adriaan Bisdorn, 27.10.1755, fos. 195v–196r.

declined from 3,500 *man* in 1688 to 2,000 *man* in 1755. We do not know if the difference was made up by increased production of Malwa opium.

If the Dutch estimates are correct then a quantity of 2000 to 3000 *man* was annually taken to Agra and Allahabad by the Hindustani merchants (*bovenlanden handelaars*) presumably for the consumption in those parts but also for re-export. The historiography of the Indian opium trade is silent about why Malwa opium does not feature prominently since the second half of the seventeenth century, when Patna opium started to make inroads. The Malwa variety resurfaced again almost a century later when the British claimed a monopsony (sole purchasing rights) on Bihar and Banaras opium in 1773.⁴⁷ As we already noted, according to the Dutch reports, the Asian/Indian merchants who traded within Bihar, Bengal and Orissa handled around 1000 *man* of opium. That an internal trade network in Bihar opium existed at least between the 1680s and 1760s is beyond doubt.⁴⁸ One is tempted to imagine that some of the opium traded passed through Lhasa/Tibet to China, but evidence is lacking. There might have been local consumption of the drug in Malabar as Alexander Hamilton informs that the chiefs of Calicut annually sold 500 to 1000 chests of Bengal opium to the traders of inland countries. The VOC also supplied Malabar with Bihar opium between the 1650s and 1770s, and also bought large quantities for Batavia.⁴⁹

Unlike Southeast Asia or China, opium never became a drug for the mass consumption in South Asia. Evidence from the nineteenth century shows that opium was only moderately consumed in British India. Paul C. Winther calculated the per capita opium consumption at 14 grains per year in Madras province (one pound consisting of 7,000 grains avoirdupois) per year, though some other parts of southern India such as in Godavari district people consumed an average of 130.6 grains during 1892/3. Overall, consumption in southern India was rather modest. For northern India,

⁴⁷ Farooqui, *Smuggling as subversion*, 17. Farooqui discusses the growing trade in Malwa opium since the late eighteenth century when opium prices rose steeply in Bombay. However, its history in the seventeenth and first half of the eighteenth century appears murky when Patna opium dominated the markets both for the Asian and European merchants.

⁴⁸ NA, VOC, Inv. Nr. 3075, "Korten inhoud der secrete memorie van den Raad Extraordinair van India en afgaande directeur Louis Tallefert aan desselfs vervanger de Heer George Louis Vernet nagelaaten," (MvO Tallefert to Vernet), signed by Louis Tallefert at Hugli on 17.11.1763, "De Amfioen," paragraph 31, fos. 1386v–1387r: "Immers dit is zeker, dat het sterk woelen der Engelschen tegens ons, en hunnen toeleg om den inlander zijne whare voor een Spotprijse afte dwingen, nergens anders toe gestrekt hebben, als om hen en ons te beletten, om een naamwaardig insaam te doen; want ze hebben voorleden jaar, ook maar 316 kisten ofte nog 101 meer als wij bekomen, zijnde een derde, namentlijk de bovenlandsche kooplieden, er wel bij gevaren also het grootste gedeelte van den Oegst door hen, ter sluijks is uit gevoert." After the EIC assumed monopsony in 1773 the internal trade network weakened and Indian/Asian merchants turned more towards Malwa opium.

⁴⁹ Alexander Hamilton, *A new account of the east Indies: Being the observations and remarks of Capt. Alexander Hamilton, who spent his time there from the year 1688. to 1723. trading and travelling, by sea and land, to most of the countries and islands of commerce and navigation, between the Cape of Good-hope, and the island of Japon*, vol. 1 (Edinburgh, 1727), 315; Prakash, *The Dutch East India Company*, 57. See also Coolhaas, ed., *Generale Missiven*, vol. 3:853, Maetsuyker, Verburch, enz. LXV, 31.01.1673: "de opium steeg tot 124 ropia de man van 72 [pond], 15000 [pond] is ingekocht; de prijs steeg te Batavia tot 7 à 8 rsd. het kati, waarom 50000 [pond] is geëist, terwijl ze ook voor Cochin en Ceylon nodig is."

opium consumption averaged 30 grains per capita, although in some districts of Assam it was as high as 747.4 grains.⁵⁰

If the consumption pattern of the late nineteenth century may be taken to be as a yardstick to gauge ingestion of the drug in India, then it hardly appears that the consumption would have been greater in previous centuries. While some areas such as Malwa, Rajputana, Malabar, and Assam consumed more opium than other regions, demand for the drug was in no way comparable to what it was in China or Southeast Asia. In spite of the efforts of the colonial administration to enhance the sale of legal or *abkari* (excise) opium, the drug failed to become a commodity of large-scale consumption.

Internal Demands for Textiles

While saltpeter and opium were intended for specialist or small markets, textiles were an essential commodity needed by almost everyone. In northern India, people dispensed with heavy clothing during the relatively warm and humid months between March-April and September-October, yet they still required light garments. However, in the summer months the combination of humidity and perspiration wore out cloth, which increased demand for its consumption. During the four months of winter, extra clothing was a necessity for people across a large part of the Indian subcontinent. Since we lack quantitative data on textile consumption and the workings of the internal cloth markets for the early modern period, I shall begin the discussion with estimates of average textile consumption from a later period.

Referring to Bagchi and Roy, Clingingsmith and Williamson suggest that annual per capita consumption of cotton textiles by Indians in 1920 was 11.65 yards. Further, between 1800 and 1920, India's per capita GDP grew thirty percent while the price of cotton textiles fell by half. These factors would certainly have created a greater consumption of textiles in the 1920 than in 1800.⁵¹ Annual consumption of 11.65 yards would appear to be the bare minimum requirement of clothing in India, where an adult male and female required at a minimum one pair of *dhoti* or *sari*, each *dhoti/sari* measuring about 5 yards of unstitched cloth, while children would have required 2 yards per annum. The total population of India is assumed to have been 200 million at the turn of the nineteenth century, of which 125 million would have been adults, so there would have been demand for at least 775 million yards of cloth at the turn of the

⁵⁰ Paul C. Winther, *Anglo-European science and the rhetoric of empire: malaria, opium, and British rule in India, 1756–1895* (Lanham MD: Lexington Books, 2003), 296–98; see also Watt, *The commercial products of India*, 857.

⁵¹ David Clingingsmith and Jeffrey G. Williamson, "Deindustrialization in 18th and 19th century India: Mughal decline, climate shocks and British industrial ascent," *Explorations in Economic History (EEH)* 45:3 (2008): 229. Amiya Kumar Bagchi, *Private investment in India 1900–1939* (Cambridge: Cambridge University Press, 1972), 245; Tirthankar Roy, *The economic history of India, 1857–1947* (New Delhi: Oxford University Press, 2000), 192–97. According to Douglas Haynes the per capita consumption of textiles was about thirteen yards in the early 1920s; see his *Small town capitalism in western India: artisans, merchants, and the making of informal economy, 1870–1960* (Cambridge: Cambridge University Press, 2012), 97.

nineteenth century. This a very conservative figure, for there were many people who could afford many times more, thus driving up total domestic cloth consumption considerably.⁵²

Now lets us figure out how much textiles Bengal was producing for export and internal consumption at the turn of the nineteenth century. Working from the study of K. N. Chaudhuri, Clingingsmith and Williamson state that London imported 38 percent of all Bengali textiles exports in the five years leading up to 1800.⁵³ According to Michael Twomey, London imported 30 million yards of textiles from Bengal in 1800.⁵⁴ If Chaudhuri and Twomey are right, then Bengal exported about 78.95 million yards at the turn of the nineteenth century, a figure that does not include exports by non-British Europeans, Americans, British country traders, or Asian merchants.⁵⁵ Apart from substantial export of cotton textiles from Bengal, we can reconstruct a rough sketch of the textile production for internal consumption in Bengal.

Bengal's population of 30 million people in 1800—18 million adults and 12 million non-adults—would have needed more than 114 million yards of textiles, assuming. How did Bengal meet this demand during the eighteenth century? We have no evidence that cotton textiles were brought to Bengal from Gujarat or Coromandel. Instead throughout the eighteenth century, Bengal continued to be a major exporter for Indian, Armenian, European, and—at the end of the century— American merchants.⁵⁶

If Bengal continued to produce textiles to meet its own requirements and export demand, the argument about the eighteenth-century deindustrialization of Bengal appears to be undermined. Indeed, Clingingsmith and Williamson are aware of this fact

⁵² The figures on domestic production and consumption of cotton cloth in 1795 have been put 1,102–1,437 and 1,080–1,415 million square yards respectively, see Tirthankar Roy, "Consumption of cotton cloth in India, 1795–1940," *Australian Economic History Review* 52:1 (2012): 72–3.

⁵³ Clingingsmith and Williamson, "Deindustrialization," 229; K. N. Chaudhuri, "Foreign trade and balance of payments (1757–1947)," in *The Cambridge economic history of India*, ed. Dharma Kumar, vol. 2 (Cambridge: Cambridge University Press, 1983), 820–21.

⁵⁴ Michael J. Twomey, "Employment in nineteenth century Indian textiles," *EEH* 20:1 (1983): 42, where Table 3 shows that in 1800 a total of 1,824 thousand pieces (a little more than 40 million yards) of Indian textiles were exported to United Kingdom. Bengal exported 1,331 thousand cotton piece goods in 1800; at 22 yards per piece, this is equivalent to about 30 million yards. According to Table 1 (p. 40) of Twomey, in the 1790s India annually exported 50 million yards of cotton piece goods, which according to Tirthankar Roy was just one or two percent of total cloth production in India at that time, see Roy, *The economic history of India 1857–1947*, 30. For export of 791,646 pieces of cottons to London in 1787, see BL, APAC, IOR, Home Miscellaneous, H/434, pp. 523–29, esp. p.526.

⁵⁵ According to the figure given by Indrajit Ray, Calcutta port exported 5,602,961 cotton piece-goods in 1799–1800 and if we assume the average size of a piece to be 20 yards then 112,059,220 yards were exported from Bengal alone. This figure casts serious doubts about the de-industrialization thesis and diminishing world market share for Indian piece goods at the turn of the nineteenth century. Ray also sheds some light on increasing importance of American and non-British European demands for the Indian piece goods, see Indrajit Ray, "Identifying the woes of the cotton textile industry in Bengal: Tales of the nineteenth century," *Economic History Review* 62:4 (2009): 864–866; see also Holden Furber, *John Company at work: A study of European expansion in the late eighteenth century* (Cambridge: Harvard University Press, 1951), 182–90.

⁵⁶ In the 1790s and 1800s, for the American and other European merchants' participation in Bengal textile trade, see James R. Fichter, *So great a profit: How the East Indies trade transformed Anglo-American capitalism* (Cambridge: Harvard University Press, 2010), 181–91, 198–200.

when they assert that “Textile export volumes are a bit harder to judge; while much of the export trade was carried out by the East India Company, there were also private local traders and other European Companies at work.”⁵⁷ In the same paragraph they argue “the period from 1772 to 1812 saw an artificial increase in demand for Indian textile exports from East India Company servants, who used them as a vehicle to transmit their fortunes back to England.” If both the EIC and private British merchants continued to export large quantities from Bengal then there would have been large production too. However, the authors do not give separate figures for the EIC servants whose exports led to “an artificial increase” in the textile export from Bengal. Another problem with Clingingsmith and Williamson’s thesis is that they apply subcontinent-wide data for grain prices, wages and climatic factors to the major textile producing centres. If one focuses on individual regions such as Bengal, Gujarat and Coromandel, an entirely different picture emerges. Here I shall not go into the de-industrialization debate any further because our main concern is the internal trade and consumption of textiles.

While the environmental settings and geographical locales of major raw cotton and raw silk producing zones were located in western and eastern India respectively (more than thousand miles apart), the craft specialization in silk works and cotton weaving developed in different places. While Bengal’s primacy lay in weaving cotton textiles, it sent large consignments of raw silk to Gujarat. Although weavers in Gujarat wove cotton textiles, they were famous also for silk weaving, brocade, and embroidery work. Bengal produced its own cotton, yet the “imports” from the Deccan and Gujarat were essential to keeping the large-scale production and the prices of textiles within reasonable limits.⁵⁸ Therefore the textile industries of Bengal and Gujarat complemented each other in many ways. The distribution of raw materials and skills

⁵⁷ Clingingsmith and Williamson, “Deindustrialization,” 229. As late as the 1780s cities of Ottoman and Safavid empires imported considerable quantities of Indian cottons. See Parthasarathi, *Why Europe grew rich*, 122–23. If we combine the Indian textile exports to Central and West Asia with the exports to Southeast and East Asia by European private traders in collaboration with the Asian merchants in the late eighteenth century, we may have a higher figure for the export share of the Indian textiles in the world market than a mere 6–7 percent suggested by Clingingsmith and Williamson. Data presented by Ray shows a large export of textiles from Bengal towards the end of the eighteenth and early decades of the nineteenth century, see Ray, “Identifying the woes of the cotton textile industry,” 864–67.

⁵⁸ “Memorandum on the present state of the culture and trade of cotton in the East-Indies,” Letter from the Secretary to the Court of Directors to the Secretary to the India Board, dated the 5th September 1828, No. 57, in *Reports and Documents connected with the proceedings of the East-India Company in regard to the culture and manufacture of cotton-wool, raw silk, and indigo in India* (London, 1836), 122. It was remarked, “and during the periods when the Company’s investment of cotton manufactures for exportation to London was in its once large and flourishing state, and at the same time there was an active demand for the like goods by the French, Dutch, and Danish merchants, the quantity of cotton grown in the Bengal provinces did not equal one-eighth part of the quantity worked up there into piece-goods. The necessary supply was imported from the Deccan, the Doab, and the various parts of the Mahratta country; and it appears that the then frontier custom-house of Manjee, at the confluence of the river Gogra with the Ganges, amounted in one particular year to a crore of rupees.” Undoubtedly this report refers to the second half of the eighteenth century. If the information in this document can be relied upon then one crore, or ten million, rupees worth of cotton imports in Bihar and Bengal certainly points to the large scale weaving activities.

engendered reciprocity and trade relations between western and eastern parts of the subcontinent.

A cursory glance at the shipping lists of the coastal Indian traffic during the early eighteenth century shows the mutual dependence for raw materials between Gujarat and Bengal for their craft productions. Each year dozens of Gujarati ships sailed to Hugli, laden with the bales of raw cotton and large amounts of specie to buy raw silk, grains, and piece goods.⁵⁹ The evidence for this coastal traffic becomes more abundant from the late seventeenth and early eighteenth centuries, when occasionally unsettled conditions temporarily disrupted overland routes. Yet the cargo capacity of the coastal shipping was not sufficient to transport the entire demands of raw cotton in Bengal. Cotton was a low-value, high-volume cargo, and Gujarati merchants would not fit out extra ships to carry raw cotton if there was no guarantee of a return cargo of comparable or greater value. Furthermore, since the coastal traffic was more dependent on the rhythms of trade winds, and was seasonal in character, the raw cotton was often transported by land and river in order to meet the more perennial demand of the weavers in Bengal. For the seventeenth and eighteenth centuries, we have evidence that merchants followed overland and riverine routes from western India through Mirzapur, to Patna and Murshidabad. While the merchants utilizing the coastal, overland, and riverine traffic brought raw cotton from Gujarat and the Deccan to Bengal, many of these merchants purchased raw silk from Bengal for Agra, Gujarat, and other areas.⁶⁰

Internal trade in cotton textiles from Bengal was no less significant. For example, Dhaka muslin was as famous in Gujarat as anywhere else.⁶¹ A report prepared in 1800 with the help of an old and experienced *dalal* (agent) of the Company called Royjee (and after his death with the assistance of Hurry Sing) throws valuable light on the consumption of Dhaka cottons within India. In this report it is reported that in 1747, the Mughal emperor consumed one hundred thousand rupees worth of piece goods for his personal use. The Murshidabad Nawab got piece goods worth three hundred thousand for himself and the court. For home consumption, Juggut Seatt bought goods

⁵⁹ The shipping list of 1712 noted the four ships which arrived from Surat in the month of June. Together they brought 380 bales of cotton among other merchandise. Interesting these ships brought 950,000 rupees probably to purchase silk and other commodities from Bengal. See, NA, VOC, Inv. Nr. 1828, From Hugli to Batavia 31.10.1712, "Memorie der aangekomene scheepen inde Revier de Ganges van Int: equipanten, sedert den 10 Junij tot ulto: Augustus 1712," pp. 218–19. Again in 1730 it was feared that the prices of textiles will be higher on account of a weak cotton crop in Bengal and also because many Surat ships carrying raw cotton for Bengal wrecked on the Malabar coast because of a storm there, see Van Goor, ed., *Generale Missiven*, 9: 81, Diderik Durven VII, 31.01.1730.

⁶⁰ See Coolhaas, ed., *Generale Missiven*, vol. 3:342, Maetsuyker, Hartsinck, enz. XX, 16.12.1660, 342 for Gujarati merchants' use of overland route through Patna and Agra. An early nineteenth century source, reflecting on the eighteenth- and early nineteenth-century scenario, relates that, "A considerable quantity of filature silk is exported to the western parts of India: a large proportion of it is sold at Mirzapoor, and passes thence to the Mahratta dominions, and the central parts of Hindostan," see *The London encyclopaedia, or universal dictionary of science, art, literature, and practical mechanics* . . . in 21 vols. (London: 1829) vol. 4: 18.

⁶¹ Prasannan Parthasarathi and Giorgio Riello, "From India to the world: Cotton and fashionability," in *The Oxford handbook of the history of consumption*, ed. Frank Trentmann (Oxford: Oxford University Press, 2012), 148.

amounting to one hundred and fifty thousand. Both the “Turannies” (Turks) and “Pattans” (Pathans or Afghans) took one hundred and one hundred fifty thousand rupees’ worth, respectively, for the consumption in the upper province. While “Mogul” merchants spent four hundred thousand partly for home consumption and partly for foreign exports, “Hindoos” purchased piece goods worth two hundred thousand rupees for home consumption.⁶² Armenians, too, purchased piece goods worth half a million rupees for the West Asian markets. For the year, 1747 the total value of piece goods purchased at Dhaka by Asian and European merchants was 2.85 million rupees. A few decades later, the total sale of piece goods at Dhaka stood at little more than 2.2 million rupees, though by 1797 the figure came down to 1.25 million rupees, with the share of Pathans, Armenians, Mughals and Hindus stood at more than six hundred thousand rupees.⁶³ The above figure comes from only one cotton textile production district, namely Dhaka, and when other piece-goods production centres are taken into account, a large amount of money was spent on cotton textiles for consumption within the Indian subcontinent.

There was an internal market for Bengal piece goods within South Asia. Bengal itself consumed a large proportion of coarse and fine cottons produced in the region, and textiles were also taken to the upper provinces. At the same time, raw cotton for textile production in Bengal came from western India and the Deccan. Raw silk produced in Bengal found its way to other weaving centres of the subcontinent such as Banaras, and silk weavers in Gujarat needed it in large quantities. The importance of the subcontinent-wide market networks in textiles can be imagined from the fact that out of 1.25 million rupees worth of Dhaka textiles purchased in 1797, Asian merchants accounted for about half the total, even though the major clients such as the Mughal emperor, Bengal Nawabs and Jagat Seths were no longer the formidable clients they once were.

In the above section, we focused on the internal markets, consumption, and trade in commodities of the eastern Ganga plain. We noted that a part of these goods were consumed internally. While the domestic market for textiles was large, other commodities such as opium and saltpeter were consumed in comparatively modest amounts. However all these commodities catered to external demands. The robust export markets gave an important boost to the commercial economy, production processes, and wealth accumulation in the Ganga plain. Who these foreign consumers were and the uses to which these commodities were put, I shall explore in the following section.

Section II: External Demands and Overseas Markets for Patna Goods

Towards the end of the sixteenth century, Patna emerged as an important marketing centre linking the Bengal delta with upper Hindustan. Mughal imperial expansion

⁶² BL, APAC, IOR, Home Miscellaneous, H/456f, pp. 45–47.

⁶³ BL, APAC, IOR, Home Miscellaneous, H/456f, p. 55.

during the second half of the century had brought the Bengal delta and the coasts of Gujarat under the control of Agra and Delhi, and integration into the Mughals' imperial domains facilitated the expansion of agriculture and gave a boost to trade. The old trunk route linking the Ganga plain with the northwestern parts of India, Persia and Central Asia became more secure and serviceable for the caravans of pack animal and bullock carts. As we noted above, links also developed between flourishing trade centres of Gujarat and that of the Ganga plain. With the Mughal expansion to the east, traders and entrepreneurs also moved to the eastern Ganga plain. These merchants became conduits for the conversion of agricultural surplus into cash and facilitated revenue collection, which resulted in increased commercialization and urban development.⁶⁴ As these developments in agriculture and the economy were getting underway, European merchants appeared in the Bengal delta and the Ganga River. They gravitated towards Bihar and around the mid-seventeenth century the European Companies began opening factories at Patna. The demand for saltpeter, opium, and textiles started to accelerate from this time on.

In this section, I examine the growing demand for commodities across the seventeenth and eighteenth centuries. While on the supply side in Bihar, peasant producers, craftsmen and market institutions facilitated production and procurement of commodities, many factors fuelled European and Asian demand for these commodities. As I shall discuss below, the political situation in Europe, experiments in military technology, military organization, and state formation all spurred the consumption of saltpeter, primarily for making gunpowder.

The Markets for Bihar Saltpeter

In the early modern period, India was perhaps the most important source of saltpeter in the world. Within India, Bihar produced probably the best variety of saltpeter and had the potential to meet global demand. At the very basic level, one may ask why the demand of saltpeter surged in the early modern period. The strategic importance of saltpeter in global politics first comes into sharp focus when, acting upon the Ottomans' request in 1693, the Mughal emperor Aurangzeb prohibited the sale of saltpeter to Europeans. The Ottomans feared that the saltpeter imported by the Christians (that is, the European Companies) would be used against them and other Muslims.⁶⁵ But the fact was that the warring state of Europe really needed saltpeter to fight each other; and in addition to the need for saltpeter by the land armies of Europe, a growing need for saltpeter had been generated by the development of sea-going vessels armed with several dozen guns. These ships had a global reach and they connected destinations across the Atlantic, Indian, and Pacific Oceans. Thus Europe

⁶⁴ B. R. Grover, "An integrated pattern of commercial life in the rural society of north India during the seventeenth and eighteenth centuries," in *Money and the market in India 1100–1700*, ed. Sanjay Subrahmanyam (Delhi: Oxford University Press), 232–33.

⁶⁵ W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 5, 1686–1697 ('s-Gravenhage: Nijhoff, 1975), 593, Van Outhoorn, Van Hoorn, enz. V, 09.02.1693.

seems to have become one of the largest consumers of saltpeter in the early modern world.

As the military fiscal states of Europe geared their efforts towards greater centralization and started competing with their rivals, their need for stable supplies of gunpowder became a pressing one.⁶⁶ As the “military revolution”—some would prefer to call it evolution—progresses, the growing military needs of the states made them dependent on an unhindered supply of war materiel and ammunition.⁶⁷ Since European sources of saltpeter were limited and could not meet the expanding demands in the seventeenth and eighteenth centuries, the import of this commodity assumed a critical significance.⁶⁸ The VOC first purchased saltpeter from Bihar in the mid-seventeenth century and soon it started to procure it in substantial quantities.

The growing importance of saltpeter in Europe is evidenced from a series of royal proclamations in England about this strategic commodity starting in the late sixteenth and early seventeenth centuries.⁶⁹ Local production, importation, and storage of this commodity assumed ever-greater significance, as is seen in the claims of an English pamphlet of 1693. Around this time the Netherlands managed to keep its warehouses well stocked and the prices there had been only a third of “8 l. per Hundred[weight]” prevailing in England.⁷⁰ Other European states coveted saltpeter for similar strategic reasons. The pamphlet also reported that the Dutch prohibited the sale of saltpeter to their German allies, but allowed them to buy unrestricted quantities of gunpowder on which “a great Duty” was imposed by Holland. Unlike the English, who banned the export of gunpowder, the Dutch made huge profits on selling this commodity to the English plantations in the West Indies. Furthermore, a number of ancillary industries such as glass making, silver refining and woollen dyeing depended

⁶⁶ Charles Tilly, *Coercion, capital, and European states, AD 990–1992* (Cambridge: Blackwell, 1992).

⁶⁷ For a constructive criticism and endorsement of the “military revolution” thesis of M. Roberts and the changing nature of warfare in Europe, see also Geoffrey Parker, “The ‘military revolution’, 1550–1660—a myth?” *Journal of Modern History* 48:2 (1976): 195–214; For the evolutionary pattern of military techniques in Europe, see also Jeremy Black, “A revolution in military cartography?: Europe 1650–1815,” *Journal of Military History* 73:1 (2009): 49–68; In 1578, hectic efforts went into constituting a union comprising Gelderland, Zutphen, Holland, Zeeland, Utrecht, Overijssel, Vriesland, Groningen, Omlanden, Lingem and Drent. It was only by forming a larger union that the smaller states of the lowland countries could survive. They formed the United Provinces of Netherlands in 1579, see *Extract uit de Resolutien van de Edele Mogende Heeren Raaden van Staate der Vereenigde Nederlanden* (Donderdag den 28 Augusti 1777) unpublished printed documents of 1578, 1579 and 1580, n.p. Preserved at Bijzondere Collecties (Special Collections) of Leiden University Library. The unification of the lowland countries prepared the background and perhaps motivated the Nassau cousins to build the first uniform standing army in order to give teeth to the United Provinces.

⁶⁸ Frey, “The Indian Saltpeter trade,” see especially pp. 531–54.

⁶⁹ See a proclamation, *By the Queene A Proclamation for the calling in and frustrating all Commissions for the making of Salt-peter granted forth before to George Evelin and others, the 28 of January 1587* (London, 1595), n.p.

⁷⁰ *REASONS Humbly offered to . . . the Honourable House of Commons*, n.p. For the royal ban on the export of saltpetre, especially fearing hostilities from the French, see *By the King and Queen, A PROCLAMATION to Prohibit the Exportation of Salt Petre* (London, 1689), n.p.; Chaudhuri gives the sale price of the Company’s saltpeter in London at 4.84 l. per cwt. in 1693, see K. N. Chaudhuri, *The trading world of Asia and the English East India Company, 1660–1760* (Cambridge: Cambridge University Press, 1978), Appendix, 531.

on saltpeter. The pamphlet complained that the English East India ships brought only about 60 tonnes of saltpeter in the preceding year.⁷¹ The data given in K. N. Chaudhuri's work shows that while the English Company imported no saltpeter in 1691, it brought in 6,107 cwt (310 metric tonnes) of saltpeter in 1692.⁷² One may suspect that the pamphleteer was deliberately quoting lower import figures in order to make a strong case for passing a bill to allow the importation of saltpeter by private English merchants, but its emphasis on the importance of saltpeter for strategic and commercial purposes stands out clearly. But how did the market for saltpeter operate in the Netherlands and who were the prominent customers?

The Netherlands emerged as an important market for gunpowder and catered to the needs of different European states in the seventeenth century.⁷³ The gunpowder mills in several Dutch towns needed huge amounts of saltpeter to keep the production and trade going. Before the VOC became an important supplier of saltpeter, the gunpowder mill-owners imported it from the other parts of Europe, particularly Poland and Russia. In the early seventeenth century Joost Willemsen, a merchant from Amsterdam, at times purchased 100 tonnes of saltpeter from Poland. In 1609, the Russian Czar "donated" fifty tonnes of saltpeter to the Dutch Republic in the hope of securing Dutch help in containing the expansion of Catholic Poland.⁷⁴ European saltpeter was subject to exorbitant export duties and high tolls, which increased the cost dramatically, but even so these sources could hardly meet the burgeoning demands of saltpeter in early modern Europe. Since importing this commodity from India was more cost-effective, several European states such as France, Austria, Prussia, Sweden, the

⁷¹ *REASONS Humbly offered to . . . the Honourable House of Commons*, n.p.

⁷² Chaudhuri, *The trading world of Asia*, see Appendix, 531. In 1692, the Mughal *wazir* (the minister) Asad Khan prohibited saltpeter export from Bihar on behest of an appeal made to Aurangzeb by the Sultan of Turkey who feared that saltpeter brought to Europe by the Companies will be used against the Ottomans. The ban was lifted in 1694, see Prakash, *The Dutch East India Company*, 58–59.

⁷³ There was an export trade in armaments and gunpowder from the Netherlands since the sixteenth century. After the creation of the United Provinces in 1579 following the *Unie van Utrecht* (Union of Utrecht) such export was regulated by the States General in order to suit its strategic interests. See, Hans Vogel, "Arms Production and exports in the Dutch Republic, 1600–1650," in *Exercise of arms: warfare in the Netherlands, 1568–1648*, ed. Marco van der Hoeven (Leiden: Brill, 1997), 199. Occasionally, depending on its strategic calculations, the government banned the export of armaments from the Dutch Republic. As the Twelve Years Truce (1609–21) ended with Spain, in following year, in 1622, a "placcaet" or regulation from the States General prohibited the export of saltpeter, gunpowder and other armaments, see *Placcaet van de hoghe ende mog: Heeren Staten Generael [...] inhoudende scherp verboth, van uyte Vereenighde Nederlanden, op eenige havenen, steden ofte plaetsen, wesende onder't gebiedt vanden koningh van Spaengien en desselfs adherenten, geen toe-voer te moghen doen van eenigh salpeter*, Pamflet 1622: 15 ('s Graven-haghe, 1622), n.p., Bijzondere Collecties, Leiden University Library.

⁷⁴ For the Dutch official request made to the king of Poland and council of Danzig for allowing the imports of saltpeter to the Dutch Republic, see J. G. Smit, ed., *Resolutiën der Staten-Generaal, nieuwe reeks, 1610–1670*, vol. 4, 1619–1620 ('s-Gravenhage: Martinus Nijhoff, 1981), 546 and p. 465 for another request to the king of Denmark to allow the toll-free passage of Danzig saltpeter; see also <http://www.historici.nl/Onderzoek/Projecten/BesluitenStaten-generaal1626-1651> check the webpage for 23 April and 24 August for Joost Willemsen; for the reference to the donation of saltpeter by Russia, see Frey, "The Indian saltpeter trade," 542.

United Provinces, and England attempted to obtain saltpeter from Bihar.⁷⁵ However, the Dutch, English, and French remained the dominant players in the market until the eighteenth century.

From about the mid-seventeenth century till the third quarter of the eighteenth, saltpeter from Bihar played an especially important role in the Dutch Republic. The seventeenth century was crucial in terms of the proliferation of gunpowder mills in the Netherlands. While the Republic was at loggerheads with Spain for most of the first half of the century, its wars with France and England provided sufficient grounds for the expansion of the industry in the second half. In the Netherlands, there were already a number of gunpowder mills in such towns as Delft (established in 1597), Vlissingen (1603), Enkhuizen (before 1606), Rotterdam (1608), Utrecht (1622), Monnikendam (before 1623), and Stavoren (1639). Towns such as Arnhem, Apeldoorn, and Neer (Limburg) were also important centres of gunpowder manufacturing. Amsterdam alone had not less than six such mills around 1660, and two more were founded in the 1670s.⁷⁶ As the VOC's supply of saltpeter from Bihar peaked in the second half of the century, prices fell in the Dutch Republic. This would have been a major factor behind the expansion of the gunpowder industry and the increasing export of gunpowder from the Netherlands.⁷⁷ It is suggested that during the first half of the seventeenth century the Netherlands exported over 5 million pounds of gunpowder, with, at a rate of 5 guilders per pound, a value of 25 million guilders.⁷⁸ Although, presently we do not have comparable export figures for the second half of the century, there is no reason to believe that it did not expand further.⁷⁹ The increased supply of saltpeter not only catered to the needs of gunpowder in the Netherlands; its export became a lucrative sector of the Dutch economy. The importance of saltpeter continued in the seventeenth and well into the next century. For example, for the sixth extension of the charter to the VOC from 1755 to 1774, the Company authorities undertook to pay 1.2 million guilders and 1.5 million pounds of saltpeter to the States-General of the Dutch

⁷⁵ Frey, "The Indian saltpeter trade," 540–42. For Swedish imports of Bihar saltpeter, see also Koninckx, *The first and second charters of the Swedish East India Company*, 252, 254–55.

⁷⁶ H. J. Reitsma, *Geschiedenis van het buskruit in Nederland van de 14^e tot de 20^e eeuw* ([S.I.: s.n.], cop. 2010), 26–27. Reitsma suggests that in 1640 there were at least fifteen big saltpeter mills in the Dutch Republic.

⁷⁷ Gerrit de Bruin, *Buscruytmaeckers: Ervaringen en lotgevallen van een merkwaardig bedrijf in Holland* (Amsterdam: Nederlandsche Springstoffenfabrieken, 1952), 12.

⁷⁸ Vogel suggests that the export of gunpowder from the Dutch Republic was "truly impressive," see Hans Vogel, "Arms production and exports," 197–210, the reference to export figure is from p. 210. Many VOC high-ranking officials as well as their family members took active part in the gunpowder manufacturing business in the Dutch Republic, see Paul van der Heijden, *Buskruit voor de wereldzeeën: de opgraving van kruidfabriek De Eendracht in Middelburg* (Hoorn: Uniepers, 2010), 32.

⁷⁹ J. P. Puype and Marco van der Hoeven, ed., *Het arsenaal van de wereld: De Nederlandse wapenhandel in de Gouden Eeuw* (Amsterdam: De Bataafsche Leeuw, 1993), the focus remains on the first half of the seventeenth century in the most of the essays collected in this volume; for 50,000 pounds gunpowder export from the Dutch Republic to Portugal in the early eighteenth century, see A. J. Veenendaal jr, ed., *De briefwisseling van Anthonie Heinsius 1702–1720*, vol. 2:1703 ('s-Gravenhage: Martinus Nijhoff, 1978), 422–23.

Republic.⁸⁰ Indeed, saltpeter was a valuable commodity often subject to negotiation in discussions over extending charter of the VOC.

From the early years of its operation, the VOC itself was an important buyer of war materials in the Netherlands. According to one estimate, between 22 and 29 percent of outfitting costs was spent on military hardware. While expenditures by the *West-Indische Compagnie* (WIC, the Dutch West India Company) were comparatively smaller than those of the VOC, expenditures on gunpowder, canon and other such goods constituted a large share of the costs for putting a fleet to sea.⁸¹ As the number of ships employed by the VOC and WIC grew during the seventeenth and eighteenth centuries, the need for ammunition expanded proportionately. During the war years particularly, gunpowder demands must have skyrocketed.⁸² In the eighteenth century, the Dutch *Middelburgsche Commercie Compagnie* (MCC) exported large quantities of gunpowder to West Africa.⁸³ As the VOC's imports of saltpeter from Bihar constituted the single largest source of supply to the Dutch Republic after the mid-seventeenth century, it is safe to assume that gunpowder exports from the Netherlands drew heavily upon Bihar saltpeter. During the eighteenth century the cutthroat competition among the Europeans Companies in the saltpeter markets of Bihar makes more sense if we appreciate growing warfare in Europe and the global strategic importance of gunpowder.

The VOC also exported saltpeter to its other settlements in Asia. For example, the Dutch factory at Pulicat had its own gunpowder mill from at least the 1620s. Pulicat had easy access to Coromandel saltpeter until the mid-seventeenth century and subsequently, to Bihar saltpeter. As Wil O. Dijk suggests, Pulicat had an excellent harbour and offered good shipping facilities. Therefore the Dutch merchants there kept the other VOC settlements such as Batavia, Malacca, and Ceylon well supplied with munitions. It is not clear whether the coastal climate at Pulicat had some positive effect on the quality of gunpowder, which was considered more durable than that supplied from the Dutch Republic.⁸⁴

⁸⁰ H. J. den Heijer, *De geotrooieerde compagnie: de VOC and WIC als voorlopers van de naamloze vennootschap* (Deventer: Kluwer, 2005), 156.

⁸¹ Michiel de Jong, '*Staat van oorlog*': *Wapenbedrijf en militaire hervorming in de Republiek der Verenigde Nederlanden, 1585–1621* (Hilversum: Verloren, 2005), 138. For the East Indies in the years 1610 and 1630 respectively, the Dutch ships carried 78,100 and 120,000 ponds of gunpowder. For the same years, the ships leaving for the West Indies took 60,000 and 48,000 ponds, see p. 118.

⁸² For example, the war-ships and armed vessels were provided with canon-balls and gunpowder. A VOC ship of 200 last was fitted with 28 guns and 75 muskets and it took on board 46,800 ponds of canon-balls and 10,000 ponds of gunpowder, see M. A. G. de Jong, "'Staat van oorlog': Wapenbedrijf en militaire hervorming in de Republiek der Verenigde Nederlanden (1585–1621)," PhD diss., Leiden University, 2002, 95; see also Reitsma, *Geschiedenis van het buskruit*, 94.

⁸³ Van der Heijden, *Buskruit voor de wereldzeeën*, 34; Also, personal communication with Professor Henk den Heijer on 21 May 2012 at Leiden.

⁸⁴ Wil O. Dijk, *Seventeenth-century Burma and the Dutch East India Company, 1634–1680* (Singapore: Singapore University Press, 2006), 44–5. It has been suggested that gunpowder shipments from Europe to India were not very significant and that the European Companies normally produced their own saltpeter in India; see Henry A. Young, *The East India Company's arsenal and manufactories* (Oxford: Clarendon Press, 1937), 62–65.

Saltpeter also had markets in Southeast Asia too. An early eighteenth-century English traveller, Charles Lockyer, notes saltpeter and gunpowder among the merchandises brought to the port of Aceh by the Moors.⁸⁵ Indeed, there existed a network in saltpeter between Bengal and Aceh during the seventeenth century. The Nawab Buzurg Ummed Khan's ships were carrying opium and saltpeter from Patna to Aceh in 1684, and the Dutch were particularly concerned that such trade potentially threatened Dutch commercial and strategic interests in Southeast Asia.⁸⁶ Mughal rank holders were also sending cargos of saltpeter to Colombo in 1656, when the Portuguese and Dutch were busy fighting for the possession of the island kingdom.⁸⁷ The VOC ships too carried saltpeter from Bengal to Ceylon and Batavia for gunpowder production there.⁸⁸ Om Prakash has studied the Bengal shipping lists between 1680 and 1718 and shown that the Asian merchants' traffic to Southeast Asia also carried saltpeter.⁸⁹

As we discussed above, Bihar saltpeter was exported to different markets in Europe and Asia. Scholars are beginning to appreciate the importance of this commodity for world history. In the European context, the military revolution thesis is seen as closely linked to the massive expansion of trade in saltpeter in the early modern period.⁹⁰ Although the effect of the saltpeter trade in European history is easily recognized, we know far less about the commodity market integration and its implications for Bihar. Scholars generally agree that the Patna market exported saltpeter primarily against bullion and that this trade constituted an important source of money supply in the seventeenth and eighteenth centuries. This pattern of trade was obviously based on an earnest cooperation between local merchants and ruling groups on the one hand and the European Companies on the other. Yet, the existing historiography has largely ignored the evolving patterns of relationships between local and foreign merchants and their shifting loyalties in the course of the seventeenth and eighteenth centuries. I will discuss the interactions between the local and European merchants and cash-nexus in the Chapters 6 and 7. But in order to give a larger background against which to analyse merchant activities and the growing use of money

⁸⁵ Charles Lockyer, *An account of the trade in India: containing rules for good government in trade, ...with descriptions of Fort St. George . . . Calicut . . . to which is added, an account of the management of the Dutch in their affairs in India* (London, 1711), 34–5.

⁸⁶ W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 4, 1675–1685 ('s-Gravenhage: Martinus Nijhoff, 1971), 724, 727, Camphuys, Hurd, enz. IV, 30.11.1684.

⁸⁷ NA, VOC, Inv. Nr. 1212, *Memorie . . . door Joan Verpoorten*, 28.10.1655, fo. 212r: “en d’ Hr Samsamdaula op Persia accomoderende d’ Hr Nawasischan met ’t aanvaarden van 4500: man salpeter tot 2 ½ R o/a de man die voornemens was geweest op Colombo te doen vervoeren.”

⁸⁸ For saltpeter needed for Ceylon to be procured at Patna, see NA, VOC, Inv. Nr. 1569, From Hugli to Batavia 30.09.1695, “Aen den Hoogh edelen heere, Mr. Willem van Outhoorn...,” p.121; for gunpowder production in Batavia and others places in Asia, see C. O. van der Meij, “De VOC onder de wapenen,” in *Het arsenaal van de wereld*, ed. Puype and Van der Hoeven, 50–51.

⁸⁹ Prakash, *The Dutch East India Company*, see table on p. 28.

⁹⁰ Frey, “The Indian saltpeter trade,” 531–54.

in the eastern Ganga plain, I will consider the overseas markets for two other significant bullion-drawing commodities.

Opium Markets

It is unclear as to when Chinese and Southeast Asian societies became familiar with opium and its uses. Joseph Needham believes that Nestorian missionaries introduced Western medical knowledge into China, including Claudius Galen's *De Theriaca*, and the formulas for a universal antidote made with a number of substances such as gall, myrrh, opium, and hemp.⁹¹ According to Trocki, specialized knowledge about the medicinal use of opium from the ancient Greek treatise of Galen (130–200 AD) may well have circulated through the Eurasian trade routes.⁹² However, recent research shows that before the emergence of the Muslim seafarers, Nestorian Christians from Sassanid Persia were very active in the Indian Ocean trade networks that extended up to China.⁹³ Therefore, an Indian Ocean circuit of the transmission of medical knowledge cannot be ruled out and it is likely that the Nestorian Christians may have been an agency for such knowledge transfer among coastal East Asian societies. In the previous chapter, we referred to the medicinal use of opium for rat bites mentioned in a ninth-century work on toxicology from Malabar. Earlier medical treatises written in northern India do not mention the medicinal use of opium, and it is doubtful that such knowledge was transmitted via overland routes to the northern parts of the subcontinent.

The transmission and exchange of skills, culture and goods accelerated when Persian and Arab merchant-navigators began exploiting the Indian Ocean trade networks in the second half of the first millennium AD, and from that point onwards, opium probably became some sort of medicinal merchandise sold at the ports of the Indian Ocean. By the time Melaka came to be founded in 1400, West Asian opium had long been in circulation along the Indian Ocean networks.⁹⁴ In the sixteenth century and earlier, the Gujarati and other merchants already sold opium in the different markets across the Indian Ocean.⁹⁵ If we may place some reliance on the sixteenth-century Venetian merchant Caesar Frederick's account, it appears that opium was sold at Pegu and Aceh. Rather in a dramatic way, Frederick tells us that he narrowly missed an

⁹¹ Joseph Needham, *Science and civilization in China*, vol. 1, *Introductory orientations* (Cambridge: Cambridge University Press, 1954), 205.

⁹² Carl A. Trocki, *Opium, empire and the global political economy: A study of the Asian opium trade 1750–1950* (London: Routledge, 1999), 17–20.

⁹³ Pius Malekandathil, *Maritime India: Trade, religion and polity in the Indian Ocean* (Delhi: Primus Books, 2010), 3–4.

⁹⁴ Kenneth R. Hall, "Local and international trade and traders in the Strait of Melaka region: 600–1500," *JESHO* 47:2 (2004): 251; for the reference to the merchants of Aden bringing opium among other commodities to the west Indian ports, see K. N. Chaudhuri, *Trade and civilization in the Indian Ocean: An economic history from the rise of Islam to 1750* (Cambridge: Cambridge University Press, 2005), 109.

⁹⁵ M. N. Pearson, *Merchants and rulers in Gujarat: The response to the Portuguese in the sixteenth century* (Berkeley: University of California Press, 1976), 10 and for a passing reference to opium being produced in Gujarat Sultanate, see p. 20.

opportunity to become rich when he carried sixty parcels of Cambay opium worth 2,100 ducats to Pegu. Unfortunately he suffered a net loss of 1,100 ducats when a large ship sailing from Cambay to Aceh with “great quantitie of Opium” was forced off course in a violent storm in the Bay of Bengal. The ship reached Pegu just a day before Frederick’s and drove down the opium price there.⁹⁶ However, within a century opium had become a far more important commodity in the eastern Indian Ocean. Bihar was probably growing opium during the first half of the seventeenth century, and it was around 1652 that the VOC started purchasing opium from Patna for export to Southeast Asia.⁹⁷

Opium consumption in Southeast Asia remained relatively low until the late seventeenth century. Scholars such as Trocki have located the reasons for the expansion of the opium markets in Southeast Asia and China in two significant developments. These were the cultural modes in which the drug came to be ingested and the economic transformations and the availability of small denomination coins to labourers who spent their money on such leisurely pursuit. It is believed that the Dutch carried the practice of smoking tobacco along with a pinch of opium and arsenic to Java in order to ward off the threats malaria posed to their health. This blend, called *madak*, was soon picked up by the Chinese, and the habit of smoking remained confined to Dutch trading posts in Taiwan and in the areas of Fujian.⁹⁸ (It is interesting to note that *madak* seems to come from the Sanskrit *mada*, meaning intoxication, and the term may have gained currency in the Javanese/Malay speaking groups.) However, another mild drug, tobacco, introduced in China around the mid-sixteenth century probably by Spaniards in Manila, had already become “the opiate of the people” by the mid-seventeenth century, according to Zheng Yangwen. While chewing opium was prevalent in South Asia and perhaps elsewhere, first the Fujianese and later other Chinese picked the habit of smoking tobacco. There may have been a link between the existing practice of tobacco smoking and later the opium ingestion in a similar fashion.⁹⁹ Referring to the Javanese annals of 1601, John Crawford has suggested that the Dutch introduced the

⁹⁶ M. Caesar Frederick, *The voyage and travail*, 37–38.

⁹⁷ The first reference to opium purchase by the VOC at Patna come in the year 1652, see W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 2, 1639–1655 (’s-Gravenhage: Martinus Nijhoff, 1964), 622, Reniers, Maetsuyker, enz. VII, 24.12.1652. But even before the VOC started buying opium from Bihar, the Muslim merchants seems to have been purchasing this commodity for Southeast Asia. This becomes clear from the cargoes of one of the two ships which both were captured in 1649 by Leyel, a Danish commander, before they reached Balasore. The ship with opium was destined for Aceh, see Coolhaas, ed., *Generale Missiven*, 2:348–49, Van der Lijn, Caron, enz. VIII, 18.01.1649. In 1641 the VOC was already buying some opium at Surat for the Malabar Coast, see Coolhaas, ed., *Generale Missiven*, 2:145, Van Diemen, Van der Lijn, enz. XVII, 12.12.1641.

⁹⁸ Martin Booth, *Opium: A history* (New York: St. Martin Press, 1998), 105; Rudolph P. Matthee, *The pursuit of pleasure: Drugs and stimulants in Iranian history, 1500–1900*, (Princeton: Princeton University Press, 2005), 212; Frank Dikötter, Lars Laamann, Zhou Xun, *Narcotic culture: A history of drugs in China*, (London: C. Hurst, 2004), 32–36.

⁹⁹ Zheng Yangwen, *The social life of opium in China* (Cambridge: Cambridge University Press, 2005), 26–30. Zheng refers to the archaeological evidence and suggests the porcelain pipes for smoking tobacco were already manufactured in 1550.

practice of tobacco smoking in Java.¹⁰⁰ Whether the Chinese already knew how to smoke or the Dutch introduced the practice, the changed methods of ingestion transformed opium from being a medicinal drug to a little luxury smoked along with tobacco by many who could afford to buy a little. By 1689, the well-known Westphalian medical practitioner in VOC service, Engelbert Kaempfer had found the Javanese smoking madak.¹⁰¹ It is hard to determine whether demand triggered supply or supply stimulated demand, but in the course of the seventeenth and eighteenth centuries both the supply and consumption continued to grow in Southeast Asia and China.¹⁰² During the early nineteenth century, when Crawford was in Java, he noted the islanders' passionate addiction and habitual use of opium.¹⁰³

Another reason for the expansion of opium markets is linked to the economic changes associated with mining and plantation work and the growing influx of Chinese labourers in many parts of Southeast Asia. According to Leonard Blussé, Chinese labourers started to migrate to Batavia and its hinterlands, or *Ommelanden*, in large numbers towards the end of the seventeenth century.¹⁰⁴ Contrary to the general agreement that locates the migration of Chinese labourers in the eighteenth century, in fact such migration grew steadily in the 1600s.¹⁰⁵ As opium consumption gradually became more widespread, the VOC's trade in Bihar opium became more important and the Dutch imported increasingly larger quantities to Southeast Asia especially from the closing decades of the seventeenth century.¹⁰⁶

¹⁰⁰ John Crawford, *History of the Indian Archipelago: Containing an account of the manners, arts, languages, religions, institutions, and commerce of its inhabitants* vol. 1 (Edinburgh, 1820), 104.

¹⁰¹ Trocki, *Opium, empire and the global political economy*, 34–36; see also Engelbert Kaempfer, *Amoenitatum Exoticarum Politico-Physico-Medicarum Fasciculi V, quibus continentur variae relationes, observationes & descriptiones rerum persicarum ulterioris Asiae, multâ attentione, in peregrinationibus per universum Orientem, collectae* (Lemgoviae, 1712), 650, “Vidi in Javâ tabernas levidenses ex arundine, in quibus id genus tabaci hauriendum exponebatur praetereuntibus. Nulla per Indiam merx majori lucro divenditur à Batavis, quàm Afiuun, quô carere adsueti non possunt, nec potiri, nisi navibus Batavorum ex Bengalâ & Choromandelâ advecto.”

¹⁰² Amar Farooqui believes that “opium consumption became widespread in China as a result of aggressive marketing of the drug in south-east Asia by the Dutch and subsequently by the English.” See book-review of Zheng Yangwen's *The social life of opium in China* by Amar Farooqui in *Social History of Medicine* 20:1 (2007): 183; see also Farooqui, *Smuggling as subversion*, 13.

¹⁰³ Crawford remarked that “the general use of this drug is but of comparatively recent introduction. They may have been taught the use of it by the Arabs; but the extensive and pernicious consumption which now distinguishes the manners of the Indian islanders, is to be ascribed to the commerce of the Europeans, and to the debauching influence of Chinese manners and example.” See John Crawford, *History of the Indian archipelago*, 1:105.

¹⁰⁴ Leonard Blussé, “Batavia, 1619–1740: The rise and fall of a Chinese colonial town,” *JSAS* 12:1 (1981): 169–70.

¹⁰⁵ Hui Kian Kwee, “Pockets of empire: Integrating the studies on social organizations in Southeast China and Southeast Asia,” *Comparative Studies of South Asia, Africa and the Middle East* 27:3 (2007): 618–20; see also for the problems with environmental sustainability, the mid-seventeenth century crisis in the seventeenth century Guangdong province. This might have given a push towards migration to Southeast Asia, see Robert B. Marks, *Tiger, rice, silk, and silt: Environment and economy in late imperial south China* (Cambridge: Cambridge University Press, 1998), 137–62.

¹⁰⁶ Prakash, *The Dutch East India Company*, 148–56; see also Luc Nagtegaal, *Riding the Dutch tiger: The Dutch East Indies Company and the northeast coast of Java 1680–1743* (Leiden: KITLV Press, 1996), 143–45; During the seventeenth century, in other parts of Southeast Asia such as the Vietnamese

There was probably some connection between the expansion of mining and rice, pepper, sugar, and gambier growing run and managed by the Chinese and the increased role of opium in such complexes. Although the Chinese *kongsi* system of organizing mining enterprises by the Chinese is assumed to be based on egalitarian principles, as Trocki suggests an unequal economic relationship often coloured the mining and plantation complexes of the eighteenth and nineteenth centuries. Labourers at these complexes often had to pay several times the prevailing market price for provisions and other basic necessities. The headman of these *kongsis*—the *taukeh* or big brother—often monopolized the supply of provisions, including opium, as well as the purchase of the products of mines or plantations and earned hefty profits. In the course of the eighteenth century, Chinese migrant labourers became increasingly dependent on opium and by the early nineteenth century they would simply desert if opium supply failed to reach them. For the *taukehs* the drug became an essential tool to keep labourers permanently indebted and assume control of their shares in the *kongsi* and secure the ownership of the mines and plantations for themselves.¹⁰⁷

Although the above pattern of economic change underlines the role of opium in the emerging political economy of the eighteenth and nineteenth centuries, one may suspect an increasing consumption of the drug at least since the late seventeenth century when Chinese migrant population in Southeast Asia was already fairly large. In the last quarter of the seventeenth century, Alexander Hamilton, an English merchant, wrote of the growing market for opium near Melaka:

The *Dutch* have another Factory right opposite to *Malacca*, on the Side of a large River, called *Bankalis*. . . . The Company vends a great Deal of Cloth and Ophium there, and brings Gold-dust in Return. That beneficial Trade was not known to the *Dutch* before 1685. that one Mr. *Lucas*, a Factor in the Company's Service at *Malacca*, was advised by a *Malaya* to send some *Surat Baftaes* dyed blue, and some *Berams* dyed red, which are both coarse Cotton Cloth much worn in that Country; and Ophium is as much in Request there, as Tea is with us. In 10 Years that he kept that Trade wholly to himself, tho' in other Mens Names, he got an Estate of 10 or 12 Tuns of Gold, or about 100000 Pounds *English*, and then revealed the Secret to the Company, who took that Trade altogether into their own Hands.¹⁰⁸

If Hamilton's estimate of Lucas's profits are correct, then opium consumption was already well on its way to becoming widespread in Southeast Asia. In 1676,

states, the Philippines, Pattani and Banten, Chinese traders formed the largest group of foreigners, see Anthony Reid, "Economic and social change, c. 1400–1800," in *The Cambridge history of Southeast Asia*, vol. 1, pt. 2, *From c. 1500 to c. 1800*, ed. Nicholas Tarling (Cambridge: Cambridge University Press, 1999), 150–51, 155.

¹⁰⁷ Carl A. Trocki, "A drug on the market: Opium and the Chinese in Southeast Asia, 1750–1880," *Journal of Chinese Overseas* 1:2 (2005): 8–10.

¹⁰⁸ Alexander Hamilton, *A new account of the East Indies: Being the observations and remarks of Capt. Alexander Hamilton*, vol. 2 (Edinburgh, 1727), 124–25; italics in the original.

probably just a year after Lucas started running his opium empire from Melaka, VOC servants in Bengal were able to smuggle 140,000 pounds of opium.¹⁰⁹ Even though the VOC followed an active “marketing policy” to expand its trade in opium in Southeast Asia, as argued by Reid and others, the same could hardly be said of the unorganized Dutch officials who conducted a sizable clandestine trade in opium on their private account.¹¹⁰ Increased opium consumption fuelled by the wider availability of the drug and, concomitantly, an increasing number of Chinese migrant labourers to Southeast Asia, explains the market expansion on the demand side.

Chinese migrants, however, were not the only people addicted to opium. As we saw above, Aceh was already importing opium in the late sixteenth century, when Caesar Frederick was a peddler in the Indian Ocean trade. In the mid-seventeenth century Leye, a Danish commander, captured two ships originating from Bengal one of which was bound for Aceh with opium and one hundred fifty packs of cloth among other merchandise on its hold, the total value of which was around 50,000 real of eight.¹¹¹ In the early eighteenth century, Charles Lockyer wrote about opium imports into Aceh,¹¹² and he further reported that the “Mallayans are such Admirers of Ophium, that they would mortgage all they hold most valuable to procure it.” He also noted the addictive power of the drug and its use among the people for pleasure rather than as a medicine.¹¹³ As opium consumption was expanding in the eighteenth-century Malay world, the migration of Chinese labourers might have further fuelled its consumption and demands.

A recent study has discussed the longstanding cultural appeal of opium in China and its growing importance since the mid-Ming period, when the drug reached the court as a part of tribute from different Asian polities. Since the late sixteenth century, opium appeared more frequently in Chinese medical treatises as an ingredient in formulas to improve “the art of sex.”¹¹⁴ By the mid-seventeenth century, opium and tobacco smoking had become familiar modes of relaxation in southeastern China and Southeast Asia. Zheng suggests that following a reduction in the import tax on opium in Zhangzhou (Fujian) between 1589 and 1615, larger quantities of opium found their way to China. She has attributed the spread of opium smoking culture in China, Java, and the Malay Peninsula to the cyclical movement of Chinese merchants and labourers.¹¹⁵

Owing to the factors ranging from a change in consumption method, an increased supply of the drug, and the mining and plantation concerns run with the Chinese migrant labourers, opium markets expanded slowly but steadily. During the eighteenth and nineteenth centuries, drug consumption and supply reached an unprecedented peak. According to Trocki, by the mid-eighteenth century, the Dutch

¹⁰⁹ Prakash, *The Dutch East India Company*, 154; cited, XVII.B. 18.10.1677, K.A. 458, n.f.

¹¹⁰ Anthony Reid, “Economic and social change,” 155.

¹¹¹ Coolhaas, ed., *Generale Missiven*, 2:348–49, Van der Lijn, Caron, enz. VIII, 18.01.1649.

¹¹² Charles Lockyer, *An account of the trade in India*, 34.

¹¹³ Charles Lockyer, *An account of the trade in India*, 60–61.

¹¹⁴ Zheng, *The social life of opium in China*, 17–20.

¹¹⁵ Zheng, *The social life of opium in China*, 43–44.

were importing 100,000 pounds sterling worth of opium into Java. After the British took over Bengal's opium production, almost a third of the entire production found its way to Southeast Asia.¹¹⁶ According to Gerrit Knaap's estimates, between 1774 and 1777 Batavia annually handled the import and export of opium worth 300,000 rixdollars.¹¹⁷ During the late-eighteenth century, opium and Indian textiles were Melaka's two most important imports.¹¹⁸

From this discussion we can conclude that the volume of trade in opium increased rapidly from the seventeenth century onwards. The Dutch procured increasingly larger quantities of opium from Bihar starting in the mid-seventeenth century in order to cater to the demands in Southeast Asia. There may have been a clandestine trade in opium run by the Dutch officials. After the fall of Bantam to the Dutch in 1682, Asian and other European merchants moved to other areas such as Benkulen in southwest Sumatra and Aceh and continued supplying opium and other goods.¹¹⁹ As was true for saltpeter, the growing demand for opium in overseas markets had a positive effect on the economy of Bihar. This trade brought a regular stream of bullion into the eastern Ganga plain. Yet another commodity of long-lasting importance was textiles. Although the trade in textiles was carried on from the different parts of Bengal, Bihar too played a fairly significant role.

Textiles Markets

From at least the late sixteenth century, Bihar was producing cotton textiles far in excess of what it consumed. Therefore trade developed in this commodity. The overland route through Agra and Lahore to Central and West Asia attracted good quantities of Patna textiles in the course of the seventeenth and eighteenth centuries. Referring to a report of 1639, Bruce Stanley suggests that between twenty and twenty five thousand camels loaded with cotton textiles from India crossed Herat on their way to Persia.¹²⁰ Central Asian merchants' journey to the eastern Ganga plain was disrupted from time to time, yet they continued to buy until around the mid-eighteenth century. Apart from the overland route, Patna textiles were increasingly exported from the ports at the Hugli on the Bay of Bengal.¹²¹ The expanding global markets for textiles help us

¹¹⁶ Trocki, *Opium, empire and the global political economy*, 54–56.

¹¹⁷ Gerrit Knaap, "All about money: Maritime trade in Makassar and west Java around 1775," *JESHO* 49: 4 (2006): 497.

¹¹⁸ Nordin Hussin, *Trade and society in the Straits of Melaka: Dutch Melaka and English Penang, 1780–1830* (Copenhagen: Nordic Institute of Asian Studies, 2007), 55.

¹¹⁹ Om Prakash, *The new Cambridge history of India: European commercial enterprise in pre-colonial India* (Cambridge: Cambridge University Press, 2000), 217.

¹²⁰ Bruce Stanley, "Herat," in *Cities of the Middle East and North Africa: A historical encyclopedia*, ed. Michael R. T. Dumper and Bruce E. Stanley (Santa Barbara: ABC-CLIO, 2007), 170.

¹²¹ For the first half of the eighteenth century, we have some interesting evidence in the Dutch sources about the Asian merchant shipping from Gujarat, Coromandel and other parts of the Indian subcontinent. From the shipping list of coastal vessels it appears that while chintz came from Coromandel to Bengal, bales of cloth were taken to Coromandel, see NA, VOC, Inv. Nr. 2862, From Hugli to Batavia 15.02.1755, "Lijst van zodanige inlandsche en andere vreemde schepen," Hougly in't Fort Gustavus den 16.12.1754, pp. 836–837; and NA, VOC, Inv. Nr. 2862, "Lijst van zodaenige inlandse en andere

to put cotton textiles production in Bihar in a larger perspective as European merchants emerge alongside Asians as important buyers of textiles for both the Asian and European markets since the seventeenth century.

Southeast Asia and China were important markets for Indian cotton textiles in the first millennium. During the Chola political expansion of the eleventh century, trading links with Southeast Asia strengthened,¹²² and in the course of the second millennium AD, commercial ties across the Bay of Bengal became still more robust and enduring.¹²³ There already exists a standard literature on the expansion of textile consumption and changing consumer tastes, the value of textiles as prestige goods or status markers, their use in death rites, as precious heirlooms to be passed on to successive generations, and for paying services or taxes and so on in Southeast Asian societies.¹²⁴ Our discussion will focus on the Southeast Asian ports and European markets that imported textiles from the Bengal region during the seventeenth and eighteenth centuries.

Initially the VOC purchased chiefly the coarse variety of cotton textiles from Coromandel to barter for Southeast Asian commodities. Towards the end of the seventeenth century, the focus shifted to the Bengal markets where textiles cost less. Before this shift occurred the merchants based at Coromandel were already bringing textiles from Bengal for re-export to Southeast Asia and other regions of the Indian Ocean.¹²⁵ This pattern of coastal trade on the Bay of Bengal might have prompted the VOC officials in Coromandel to venture into Bengal for lower-priced textiles. On the demand side, around the mid-seventeenth century the VOC and the rulers of Kedah, Bangery, Mataram, and Palembang signed treaties that in principle gave the Company monopoly rights to sell specific types of Indian textiles, according to the taste and preferences in the region. In return, the Company was allowed to buy spices and non-precious metals mined in those kingdoms. According to the figures given by Om Prakash, the VOC's exports of Bengal textiles to the Indonesian archipelago peaked towards the end of the seventeenth century, when the Coromandel regions became less competitive. In the last thirty-three years of the seventeenth century, the VOC exported

vreemde schepen als er geduurende deese Noorder Mousson successive uijt de Ganges vertrocken zijn," Hugli, 20.03.1755, pp. 1079–1081.

¹²² Hema Devare, "Cultural implications of the Chola maritime fabric trade with Southeast Asia," in *Nagapattinam to Suvarnadwipa: Reflections on the Chola naval expeditions to Southeast Asia*, ed. Hermann Kulke, K. Kesavapany and Vijay Sakhuja (Singapore: Institute of Southeast Asian Studies, 2009), 178–92.

¹²³ Geoff Wade, "An early age of commerce in Southeast Asia, 900–1300 CE," *JSAS* 40:2 (2009): 221–65.

¹²⁴ Kenneth R. Hall, "The textiles industry in Southeast Asia, 1400–1800," *JESHO* 39:2 (1996): 92–94; Lotika Varadarajan, "Syncretic symbolism and textiles: Indo-Thai expressions," in *Commerce and Culture in the Bay of Bengal, 1500–1800*, ed. Om Prakash and Denys Lombard (New Delhi: Manohar, 1999), 361–81; Fiona Kerlogue, "The early English Textile trade in South-East Asia: The East India Company factory and the textile trade in Jambi, Sumatra, 1615–1682," *Textile History* 28:2 (1997): 150–51. See also Prasannan Parthasarathi and Giorgio Riello "From India to the world," in *The Oxford handbook*, ed. Trentmann, 154–56.

¹²⁵ Sinnappah Arasaratnam, *Maritime India in the seventeenth century* (Delhi: Oxford University Press, 1994), 158.

226,343 pieces of textiles from Bengal, an annual average of only 6,858 pieces. Between 1700 and 1718, however, the Company exported 698,566 pieces—an annual average of 38,809 pieces—which were sold in the markets of Arakan, Pegu, Siam, Sumatra, the Malay Peninsula, and Manila.¹²⁶

Between 1728 and 1734, VOC fetched a profit of 29.75 percent on the sale of textiles worth f. 656,279 at Batavia, which was well below the benchmark of gross profits of 40 to 50 percent set by the Company authorities in Batavia and the Dutch Republic. The textiles market at Bantam was much smaller, although the Company netted a profit of 50 percent there during the same period.¹²⁷ According to Susil Chaudhuri, for its intra-Asian trade the VOC exported more than 215,000 pieces of textiles annually between 1730 and 1735, of which about 54 percent was shipped to Batavia, while Japan and Persia received 21.42 and 6.07 percent respectively. The other 19 percent went to ports in southern India, Ceylon, Siam, Malacca, and Makassar. The VOC's annual procurement gradually decreased to about 129,000 pieces in 1740–45, and about 86,000 pieces per annum during 1745–50.¹²⁸ In the course of the eighteenth century, the VOC's profits on textiles in Southeast Asia declined, primarily because of the commercial activities of country traders and other competitors who operated on a lower profit margin. Private European merchants continued to supply Bengal textiles to Southeast Asian markets.¹²⁹ Towards the end of the eighteenth century, the VOC tried to make the best of this heightened competition and started exacting levies on Indian cloth imported on the north coast of Java, which earned the Company considerable revenue.¹³⁰ However, the VOC trade in textiles with Europe expanded rapidly from the late seventeenth century, and it is this expansion that kept the Company servants busy in the Bengal markets.¹³¹

The VOC and EIC began carrying textiles between Asia and Europe in the seventeenth century, but it was only towards the end of the century that this trade expanded rapidly thanks to the so-called “calico craze” and an aggressive “marketing

¹²⁶ Prakash, *The Dutch East India Company*, 142–44, and for the figures, pp. 146–47, table 6.1. Though textiles constituted of five different varieties of cotton and silk, the overwhelming majority remained of the ordinary cotton calicoes.

¹²⁷ Prakash, *European commercial enterprise*, 216.

¹²⁸ Sushil Chaudhuri, *From prosperity to decline: Eighteenth century Bengal* (New Delhi: Manohar, 1995), 197.

¹²⁹ Cotton piece goods also featured in the list of goods in the Indian coastal traffic plied by the European and Indian Europeans merchants. Based on Lambert's report bearing figures of 1793, it has been suggested that the eastward and westward country trade in the Indian Ocean used 20,000 tonnes of cargo space while the coastal trade utilized 80,000 tonnes capacity, see Holden Furber, *John Company at work*, 182–90.

¹³⁰ Els M. Jacobs, *Merchant in Asia: The trade of the Dutch East India Company during the eighteenth century* (Leiden: CNWS Publications, 2006), 91–93.

¹³¹ For the expansion of the VOC's textiles trade with Europe, see F. S. Gaastra, “De textielhandel van de VOC,” *Textielhistorische Bijdragen*, 34 (1994): 51–56. For an increasing use of the Indian cotton textiles in the Netherlands, especially in the eighteenth century, see Hanneke van Zutem, “Boeren en burgers in katoen,” in *Sits: Oost-West relaties in textiel*, ed. Ebelte Hartkamp-Jonxis (Zwolle: Waanders, 1987), 65–75.

policy” followed by the British in European markets. John Cary, a Bristol merchant who sought a ban on Indian calicoes, wrote in 1695,

It was scarce thought about twenty Years since that we should ever see *Calicoes*, the Ornaments of our greatest Gallants (for such they are, whether we call them *Muslins*, *Shades*, or anything else) when they were then rarely used. . . ; but now few think themselves well drest till they are made up in *Calicoes*, both Men and Women, *Calico Shirts*, *Neckcloths*, *Cuffs*, *Pocket-Handkerchiefs*, for the former, *Head-Dresses*, *Night-royls*, *Hoods*, *Sleeves*, *Aprons*, *Gowns*, *Petticoats*, and what not; for the latter, besides *India-Stockings* for both Sexes.¹³²

If we believe Cary, then it appears that calicoes had become popular amongst different classes of people in England.

As a result of the mobilization of the pamphleteers, the British parliament put a number of legal restrictions on the imports of painted, stained, or dyed Indian calicoes during the late seventeenth and early eighteenth centuries. Yet, in spite of such protectionist measures, the English Company’s procurement from Bengal kept increasing.¹³³ This expansion of the calico trade was a result of the well-executed commercial policy of the EIC under the leadership of Joshua Child.¹³⁴ Since the intra-Asian trade was more important to the VOC than to the EIC, the former was slow to recognize the enormous market potential for textiles in Europe. However, the VOC reoriented its attention to tap the lucrative trade in textiles for the European market. The earnest desire to profit from the Indo-European trade resulted in many initiatives.

One such initiative was to develop artistic patterns and designs suited to the tastes and preferences of European consumers. Hence, in the last quarter of the seventeenth century, the VOC directors recruited painter and textile trader Gerrit Clinck to go to Coromandel and Bengal and train local weavers and painters in the styles and patterns required for the European markets. He instructed Indian painters to paint flowers not too close to each other and in sweeping whirls and curves so that they would appear more graceful. The changes introduced by Clinck were successful and for many years to follow the VOC demanded “designs according to the drawings of the merchant Clinck.”¹³⁵ Apart from these artistic innovations by the Dutch merchant, there

¹³² John Cary, *A discourse concerning the East India Trade, shewing it is unprofitable to the Kingdom of England* (London, 1699), 4–5; italics in original.

¹³³ Indrajit Ray, *Bengal industries and the British Industrial Revolution (1757–1857)* (London: Routledge, 2011), 55–57.

¹³⁴ Woodruff Smith, “The European-Asian trade of the seventeenth century and the modernization of commercial capitalism,” *Itinerario* 6:2 (1982): 83. Some scholars argue that the revolution in western consumer tastes prepared the background for the upcoming Industrial Revolution and economic imperialism of the nineteenth century, see K. N. Chaudhuri and Jonathan I. Israel, “The English and the Dutch East India Companies and the Glorious Revolution of 1688–9,” in *The Anglo-Dutch moment: Essays on the Glorious Revolution and its world impact*, ed. Jonathan I. Israel (Cambridge: Cambridge University Press, 1991), 408–9.

¹³⁵ Heleen B. van der Weel, ‘*In die Kunst en wetenscha p gebruyckt*’: *Gerrit Claeszoon Clinck (1646–1693), meester kunstschilder van Delft en koopman in dienst van de Verenigde Oostindische Compagnie*

were some traditional varieties of textiles such as Lucoris or Lucorns, from the Lakhwar area near Patna, and Patna chintz that were sought after by the EIC and VOC for the European markets.¹³⁶ From a report of 1791 it appears that Bihar remained a foremost procurement zone for the cotton goods demanded by the VOC. According to the demand list, the goods to be supplied from Bihar included “cassas,” “malmollen,” “termdaans,” “tansjeebs” and “baftassen” 6,900 pieces in total, and purchased with f.50,117.2. Although this sum constituted less than 5 percent of the total money (f.1,101,874.4) invested in textiles, yet for the Company Bihar remained the seventh most important textiles supplier after (in descending order) Birbhum and Burdwan (f.205,739.19), Hendiaal (f.111,694.28), Herriapaal and Dhenniacallij (f.97,224.18), Bourong (f.76,166.3), Santipur (f.71,487.11) and Jeggernaatpoer (f.68,726.16).¹³⁷

From the early decade of the eighteenth century, the Europe-bound ships of the VOC carried large consignments of Indian textiles. Els Jacobs suggests that the profit on the VOC’s textile trade was 125 percent at the turn of the seventeenth century, but the margins subsequently declined to 80 percent in the course of the eighteenth century.¹³⁸ Femme Gaastra argues that the Company was wary of bringing too large consignments of textiles for fear eroding its profit margin.¹³⁹ Yet, in the eighteenth century, the VOC continued importing impressive quantities of Indian textiles, primarily from Bengal.

Among the biggest customers for Indian textiles was the Dutch West India Company, which used them in the slave trade in West Africa. They employed primarily the coarse variety of goods and the names of textiles featured in ships’ manifests include *nicanees*, *inlandse chintz*,¹⁴⁰ *salampouri*, *bafta*, *bonte cassa*, *gebloemde zijd*, and *witte graaties*. A number of other Dutch traders also sold Indian textiles to the WIC.¹⁴¹

(Hilversum: Verloren, 2002), 86–87, 92; see also F. S. Gaastra, *The Dutch East India Company: expansion and decline* (Zutphen: Walburg Pers, 2003), 137. Merchant Clinck’s provided samples of flowers to be drawn on Patna chintz, see NA, Collectie Alting, 1.10.03, Inv. Nr.21, Instruction to the Bengal Director and Council by Van Rheede, 1687, p.168.

¹³⁶ NA, VOC, Inv. Nr. 9544, “Extract uijt den eijsch van retouren uijt India voor den Jaar 1711,” and “Provisioneele beantwoordinge op en nevenstaanden Eijsch van Retour goederen door de Ed: Hoog Agtb: heeren XVII voor den loopende Jaare 1711 uijt dese directie gedaan,” Hugli, 31.10.1711, pp. 192–93, in 1711, the VOC demanded 12,000 pieces of Patna chintz and 5,000 pieces of Lucoris. For a rise in the demand of different sorts of textiles from Bihar between 1735 and 1764, see NA, VOC, Inv. Nr. 3075, MvO Taillefert to Vernet, Hugli, 17.11.1763, “De lijwaat handel,” paragraph 120, fos. 1368r–1369v.

¹³⁷ NA, VOC, Inv. Nr. 3918, “Memorie van ’t geen op den 23 Junij 1786 na den eisch van anno 1782 aanbesteedden wat daarop door de kooplieden te dier tijd is geleverd, met aanwijzing van ’t inkoop bedraagen der leverantie, te weten,” Hugli, 21.03.1791, fos. 252r–254r.

¹³⁸ Jacobs, *Merchant in Asia*, 94.

¹³⁹ Gaastra, “De textielhandel van de VOC,” 61.

¹⁴⁰ *Inlandse chintz* was a variety of textiles, first imported as plain textiles from India and later printed in the Dutch Republic.

¹⁴¹ See for the West Africa bound West India Company ships’ cargo lists, NA, West-Indische Compagnie (hereafter, WIC, toegang nr. 1.05.01.02), Inv. Nr. 1282, “Factura van d coopmanschappen die geladen zijn in’t schip Juffr. Margarita Catharina...,” Received on 05.02.1701, see for the guinee cloths which

Textiles formed the most important export item from Bengal, followed by saltpeter and opium. Contrary to commonly held assumptions, the textile trade continued to be a leading sector of the economy in the second half of the eighteenth century and scores of weaving villages supplied piece goods to the Companies and private traders alike. It is true that at times the weavers were forced to supply cloth below the market price, and the market system itself was subordinated to the superior political authority wielded by the English Company after it secured from the Mughals the diwani in 1765. As coercion assumed distressing proportions, as investigation from Shantipoor showed, the President and Council adopted some resolutions to ameliorate weavers' conditions. These resolutions forbade any forced advances either by the Company agents or private merchants upon the weavers.¹⁴² Around the 1770s, following a Dutch complaint about the forcible collection of cloth they had bought against cash at Malda, the English even removed the *gomashta* (broker or agent) who was found to be troublesome.¹⁴³

Above I have discussed overseas markets and how external demand for piece goods of the eastern Ganga plain lent momentum to the commercial economy. Demand-driven growth and expansion of productive capacity continued during the seventeenth and eighteenth centuries. Factors such as growing population and food production supported the process for most of the time, while political disturbances and climate shock after the mid-eighteenth century temporarily disturbed the process. After about one and a half decade of turmoil following the political transition in 1757, the economy would continue to be productive in the second half of the eighteenth century. The question of the "de-industrialization" in the Ganga plain, insofar as it relates to the weaving and export of cotton textiles, becomes relevant only for the nineteenth century.

were sold to the West India Company by several Dutch traders, n.p.; NA, WIC, Inv. Nr. 1283, "Facture van de koopmanschappen door d' Ed: heeren Bewindhebber der geotroijeerde Westind: Comp: ter camer Zeelant doen laden in 't schip genaamt Duijnenburg, ...," Middelburg 01.01.1702, see for the purchase of blue bafta from the VOC and blue guinee cloths, chintz etc. from other traders, n.p.; NA, WIC, Inv. Nr. 1284, "Factura van d' coopmanschappen die gelaaden zijn in 't schip de Tijger,...," Amsterdam, 26.04.1703, n.p., "Factura van de coopmansschappen die geladen zijn in't schip de Juffr: Christina, ...," Hoorn, 25.04.1703, see for the Indian textiles such as white Salampuri in the cargo list n.p., "Facture van de coopmanschappen door de Ed: heeren bewindhebberen van de geotroijeerde Westind: Comp: ter camer Zeeland doen laden in't schip genaamt de Fortijn,...," Middelburg, 15.05.1703, see for guinee cloths, "nicanesen," "inlandsche sitsen" and other cotton goods from India in the cargo list. n.p.; NA, WIC, Inv. Nr. 1285, "Factuure van de coopmanschappen door d' Ed: heeren bewindhebberen der geotro: Westind: Comp: ter camer Zeeland doen laden in't schip gent: Duijnend,...," Middelburg, 01.07.1704, n.p.; NA, WIC, Inv. Nr. 1286, "Factura van d' coopmanschappen die gelaaden zijn in 't schip de Beurs van Amsterdam,...," Amsterdam, 23.10.1705, n.p.; see also Henk den Heijer, *Goud, ivoor en slaven; Scheepvaart en handel van de tweede Westindische Compagnie op Afrika, 1674–1740* (Zutphen: Walburg Pers, 1997), 117; Henk den Heijer, "Een Afrikaan in Leids laken: De Nederlandse textielhandel in West-Afrika, 1600–1800," in *Alle streken van het kompas: Maritieme Geschiedenis in Nederland*, ed. Maurits Ebben, Henk den Heijer and Joost Schokkenbroek (Zutphen: Walburg Pers, 2010), 287.

¹⁴² BL, APAC, IOR, P/2/3, Bengal Public Consultations, Fort William 12 April 1773, pp. 311–22; Om Prakash, "From negotiation to coercion: Textile manufacturing in India in the eighteenth century," *MAS* 41:6 (2007): 1331–68.

¹⁴³ BL, APAC, IOR, Home Miscellaneous Series, H/117, pp. 21–22, although it was alleged that the Dutch complaints "to be ill founded or at least greatly exaggerated."

Conclusion

In this chapter I have argued that in the course of the eighteenth century the eastern Ganga plain assumed a distinct political and economic orientation. As the hinterland of the Bengal coast, Bihar was firmly incorporated into the global maritime economy by the eighteenth century. The VOC invested close to a million rupees in buying merchandise from Bihar, the investment by the English Company would have been even higher considering its surging demands compared to the Dutch rival.¹⁴⁴ The French and Danish Companies' trade added into the region's foreign trade and growing demands gave further boost to the economy.

Although the quantitative data on the total share of Bihar in eastern Ganga plain's overseas trade is lacking at the moment, the qualitative evidence suggests an increasing participation of the European Companies in trade from Bihar. Saltpeter, opium and textiles became important merchandise for the overseas markets, and their quantity grew enormously in the course of the late seventeenth and eighteenth centuries. This growing demand had important implications for the region.

The expansive and resource-rich hinterland of Bihar, relatively dense population, the Ganga as trade highway and the composition of its political and mercantile elites markedly differed from other South Asian regions such as the Coromandel Coast and Gujarat. Perhaps the merchants and political elites, being themselves immigrants and lacking long-standing regional roots, did not find it strange to side with other immigrant merchants from Europe. An alliance with the latter appeared to give them more opportunities to make money. The easy conquest of Bengal by the English Company with the support from some of the Mughal rank holders, bankers and merchants in 1757 perhaps underlines the economic interest these groups had in aligning with a regime engaged in the maritime commerce. The expansion of the commercial economy in the Ganga plain gave rise to the formation of interest groups that sought to benefit from the maritime linkages and the imports of specie.

By the first half of the eighteenth century, overseas trade was the most important source of uninterrupted money supply, and the leading merchants in the region, together with the European Companies, assumed a far more important role in the political economy. They became puppet-masters in the political drama that unfolded during the mid-eighteenth century. How did the rising prosperity of merchants and political elites redefine their mutual relationships? In what ways did the money-flows along the Ganga influence marketing hubs such as Patna? How did participants in the cash-nexus become capable of undermining the existing political regime in eastern India? In Chapter 6, I will explore these questions by inquiring into the dynamics of the Patna hub and looking at the trading activities of local and European merchants along the Ganga.

¹⁴⁴ Van Goor, ed., *Generale Missiven*, 10: 476, Valckenier IX, 31.03.1740, and p. 619, Valckenier XIII, 25.03.1741 for the sums the Dutch were spending in the Patna markets. For the English Company's growing trade, see Prakash, *European commercial enterprise*, 275–76.

Chapter 6

Ganga-local: The Patna Hub, Growing monetization, and the workings of the market

*Patna, the chief city so called; the river Ganges bounds it on the west, Sersily on the east; it is a very fertile province. . . . The chief cities in [Bengal] are Ragamahat [Rajmahal] and Dekaka [Dhaka]. It hath many havens and ports belonging unto it, which are places of very great trade.*¹

*Murshid Quli Khan, the imperial diwan in the province, wrote in 1706 that following the closure of the Dutch factory at Kasimbazar two years earlier, the Hollanders' demand for raw silk had registered a considerable decline, leading to a substantial shift of land away from mulberry into rice and pulses. This had had an injurious effect on the income from land revenue, inasmuch as mulberry lands were assessed at Rs. 3 per bigha, whereas the corresponding rates for rice and pulses—being lower-value crops—were only Rs. 0.75 and Rs. 0.37 per bigha, respectively. This could be reversed only if the Company were persuaded to reopen its factory at Kasimbazar.*²

Introduction

The term *Ganga-local* refers to the regional economy along the Ganga between Patna and the delta, a region known as the eastern Ganga plain or eastern India. Chapter 5 discussed the demands for the commodities of Bihar in South Asian and global markets. The export of goods was balanced primarily against the imports of bullion because the region imported little merchandise. Because money was central to market transactions, the present chapter examines the dynamics of money-supply and cash-nexus. As we have already noted, the connecting links of the Ganga brought cohesiveness to the regional markets and the river facilitated the circulation of commodities, money, credit and information with relative ease. We have also seen how the river linked the productive hinterlands and the maritime zone. Now the merchants and traders from Hindustan and Bihar increasingly participated in the market exchange for agricultural and craft goods. The first integrative impulse came from the Mughal conquests of Gujarat and Bengal in the 1570s. Mughal integration of Hindustan with the western and eastern sea-boards facilitated the growth of the commercial economy in the Ganga plain during the age of maritime commerce.

The participation of the long-distance merchants from the overland and maritime routes gave a further stimulus to the goods production in eastern India. Since the sixteenth century, the Portuguese merchants, though based mainly along the coast and estuaries of the Bengal delta, had participated in the riverine commerce of Patna. In

¹ Edward Terry, *A voyage to East-India* (1655; repr. London, 1777), 84–85.

² Om Prakash, *The Dutch East India Company and the economy of Bengal, 1630–1720* (Princeton: Princeton University Press, 1985), 25, cites Enclosure to H. B. 9.10.1706, K. A., fos. 63–68.

the seventeenth and eighteenth centuries, as regular bulk buyers of commodities, the European Companies became increasingly important in the commercial economy of the region. Interestingly, the Europeans' participation in the regional commerce largely coincided with the eastwards movement of the political and agricultural frontiers, almost a century-long drawn out process from the 1570s to the 1660s when the conquests of the western and eastern deltas were finally completed by the Mughals. The political expansion in the eastern Ganga plain led to a more efficient exploitation of the local resources and encouraged the production of tradable goods. These political and economic developments in the Ganga plain made it possible for the long-distance traders to participate in the regional economy at a large scale.

Although before the mid-sixteenth century a fort was built at Patna by Sher Shah who foresaw a great future for the town, yet its growth as an important market probably owes to Mughal initiatives.³ Once Bengal was conquered, the western parts of the delta underwent rapid agricultural expansion. Perhaps the crucial push for this economic spurt came with those merchants who had followed the Mughal armies as suppliers and logistics providers. These so-called Hindustani merchants belonged primarily to the Khatri and Marwari or Jain communities. Once the region was conquered the merchants settled in the towns and qasbas along with Mughal civil and military officials and indirectly rendered important fiscal services to the empire. The merchants offered credits to the cultivators and zamindars, and assisted them in carrying out agricultural operations. The credit providers as local merchants converted the agricultural and trade goods into cash. With this money the peasants could pay the land revenue to the Mughal fiscal officials. The hard work of the peasants and weavers and the financial and the marketing services of Hindustani merchants assisted the process of agricultural and tradable goods' production. As the production cycle was set in motion, the Dutch and English Companies' moved up the Hugli River from the relatively peripheral locations in Orissa and Arakan in order to participate in that economy. By the mid-seventeenth century, maritime trade began to systematically integrate the riverine port cities of Hugli, Kasimbazar, Rajmahal and Patna which offered a range of goods for the overseas markets. At these towns and their hinterlands the growing demands for commodities created opportunities at many levels in the local economy. Historians argue that the stimulus to the economy from the demands for goods by the European Companies created more employment opportunities.⁴ Casting a skeptical glance on such proposition Sanjay Subrahmanyam argues that the commercial expansion and employment opportunities did not take place in isolation with the

³ 'Abdu-lla, *Tarikh-I Daudi of 'Abdu-lla*, in *The History of India as told by its own historians*, ed. and trans. H. M. Elliot and John Dowson, vol. 4 (London, 1872), 477–78.

⁴ K. N. Chaudhuri, *The trading world of Asia and the English East India Company, 1660–1760* (Cambridge: Cambridge University Press, 1978), 462; Prakash, *The Dutch East India Company*, 234–48. For a critique of Prakash's position see Sushil Chaudhury, "European companies and the Bengal textile industry in the eighteenth century: The pitfalls of applying quantitative techniques," *MAS* 27:2 (1993): 321–40; for a reply to Chaudhury, see Om Prakash, "On estimating the employment implications of European trade for the eighteenth century Bengal textile industry—a reply," *MAS* 27:2 (1993): 341–56.

agrarian expansion and demographic growth, I would further add the favourable climate and rainfall also contributed to these developments.⁵

Scholars generally agree that the market institutions of Patna were highly sophisticated during the early modern period.⁶ When the EIC merchants first reached Patna in 1620, they encountered a well-established commercial economy and an export sector based on textile and other goods.⁷ Other towns of eastern India such as Rajmahal, Maksudabad (or Murshidabad since 1704), and Dhaka also had sophisticated market institutions that helped with the creation of merchant capital. This finding once again questions Immanuel Wallerstein and Fernand Braudel's Eurocentric proposition that the roots of capitalist modern world economy developed in Europe since about 1500.⁸ This view has already been challenged by scholars such as André Gunder Frank. Frank turned this approach upside down by suggesting an early modern world economy rooted in Asia, more specifically in China, at least till the end of the eighteenth century.⁹ The centrality of China got further support in the works of Kenneth Pomeranz who further developed the insights gained from R. Bin Wong's important work.¹⁰ Although historians increasingly agree that Asia played a prominent role in the early modern world economy, Prasannan Parthasarathi seeks to challenge the Sino-centric bias in the existing historiography. Instead, he suggests a poly-centric Asian economy in which India had its own place.¹¹ As there were many regional foci of trade and economy within Asia such as the Red Sea, Persian Gulf, Bay of Bengal, Malacca, the Indonesian archipelago and the Yangtze basin in China, within the Indian subcontinent also there were distinct regions. For example, Gujarat, the Malabar and Coromandel coasts and the eastern Ganga plain are believed to be the economically advanced zones

⁵ For a critique of the Recardian approach espoused by Chaudhuri and Prakash in the works cited in the footnote 4 above, see Sanjay Subrahmanyam, *The political economy of commerce: Southern India, 1500–1650* (Cambridge: Cambridge University Press, 1990), 343–65.

⁶ Kumkum Chatterjee, *Merchants, politics and society in early modern India: Bihar, 1733–1820* (Leiden: Brill, 1996); Jagadish Narayan Sarkar, *Glimpses of medieval Bihar economy: Thirteenth to mid-eighteenth century* (Calcutta: Ratna Prakashan, 1978).

⁷ BL, APAC, IOR, G/28/1, Patna Factory Records, 1620, vol. 1; R. C. Temple, ed., "Documents relating to the first English commercial mission to Patna, 1620–1621," *The Indian Antiquary: A Journal of Oriental Research* 43 (May 1914): 69–83 and 44 (June 1914): 97–111.

⁸ Fernand Braudel, *Civilization and capitalism, 15th–18th century*, vol. 3, *The perspective of the world*, trans. Siân Reynolds (New York: Harper and Row, 1984), 89–279. Rather than seeking a linear flow of capitalism from Europe to all other parts of the world, I believe that modern capitalism had multi-polar origins across Europe and Asia. It was through the convergence of economic forces from the east and the west that the modern capitalist world economy developed. Wallerstein in the preface to new edition asserts that the Indian subcontinent was outside of the capitalist world economy, see Immanuel Wallerstein, *The modern world-system: Capitalist agriculture and the origins of the European world-economy in the sixteenth century* (Berkeley: University of California Press, 2011), xiv–xv.

⁹ André Gunder Frank, *ReOrient: Global economy in the Asian age* (Berkeley: University of California Press, 1998); see also Dennis Owen Flynn and Arturo Giraldez, "Cycles of silver: Global economic unity through the mid-eighteenth century," *JWH* 13:2 (2002): 391–427.

¹⁰ Kenneth Pomeranz, *The great divergence: China, Europe and the making of the modern world economy* (Princeton: Princeton University Press, 2000); R. Bin Wong, *China transformed: Historical change and the limits of European experience* (Ithaca: Cornell University Press, 2000).

¹¹ Prasannan Parthasarathi, *Why Europe grew rich and Asia did not: Global economic divergence, 1600–1850* (Cambridge: Cambridge University Press, 2011), chap. 2, esp. 21–50.

which had their own hinterlands producing important merchandise and these regions were well connected through the long-distance trading networks. In economic terms, these commercialized zones of the Indian subcontinent are comparable with the advanced regions of Western Europe and China.

Historiography on the Bengal economy prior to the Mughal conquest is sketchy and it hardly allows us to form a picture of the pattern of trade and commerce. After the Mughal conquest, and particularly since the seventeenth century, the agricultural expansion, demographic growth, favourable environment and commercial boom benefitted directly or indirectly a large number of the peasants, labourers and craftsmen. Many local traders who transacted business with the long-distance merchants and participated in the regional trade were able to accumulate large capitals. Opportunities to make profits were not limited to the merchants and moneylenders alone; in fact many Mughal rank-holders and zamindars too had developed interests in trade and speculation. In the eighteenth century, with the weakening of the Mughal Empire and the periodic disruptions of the overland routes through Hindustan the interest group (which included the bankers, merchants, zamindars among others) in Bihar and Bengal became more dependent on the maritime trade for export of merchandise. As the overseas trade became a more regular source of bullion flow in the regional economy, the local merchants, crafts-producers and zamindars could see the region's economic destiny gradually breaking away from the classical Mughal political economy based on agricultural exploitation. Hence, rather than being with Delhi or Agra, many of the merchants, Mughal rank-holders and zamindars on the eastern Ganga plain sided with the forces which could maintain and consolidate the maritime oceanic links of the region.

To understand the market dynamics in eastern India, this chapter discusses the interactions between the local traders and the seaborne merchants who operated in the long-distance markets in Asia and Europe. The occasional references in the VOC records indicate that the share of the overland and maritime Asian merchants perhaps was substantial in the commercial economy of the eastern Ganga plain well up to the mid-eighteenth century. However, we have no way of knowing their consistent operation over a longer period of time. This study, therefore, exploits the systematic records generated by the European Companies and makes an effort to understand the regional political economy by focussing on the maritime trade.

In the present chapter I shall argue that the inflow of bullion stimulated monetization of the regional economy. The growing cash-nexus had far reaching implications for the political and economic processes in the eastern Ganga plain. Political elites, zamindars and merchants benefited from the expanding trade and economy. While this chapter focuses primarily on merchants and their involvement in the cash-nexus, in Chapter 7 shows the growing interests of zamindars in trade and commerce. During the first half of the eighteenth century, as a result of the unprecedented expansion of the European Companies' overseas trade, the maritime zone became an important and dependable source of bullion imports. On the other

hand, the fluid political situation in northern India and Persia occasionally disrupted the overland trade network through Hindustan, even though the traffic continued with periodic disruptions. Such disturbances favoured the maritime zone for the export of commodities and imports of bullion into the eastern Ganga plain.

In order to discuss the issues of merchants, market institutions and bullion flows, I have organized the present chapter into two sections. Section one discusses the growing monetization as a result of demands for the commodities from the region. It further goes into the migration and settlement of the merchant communities in eastern India from the sixteenth century. It also discusses some of the famous eighteenth-century merchant magnates who emerged from the long established merchant communities. It was with the active participation of the local traders and merchant magnates that the European Companies played an important role and successfully integrated the regional commercial economy with the global maritime economy. To underline the infrastructural basis for the workings of cash-nexus, section two describes how money, credit and information circulated with relative ease along the Ganga. It shows that the maritime zone encompassed the entire eastern Ganga plain and Patna became the western outpost of an economic system based on the oceanic trade from the Bay of Bengal. Overall, I argue in this and the next chapter that it was the interest group comprising of the Mughal rank-holders, merchants, zamindars and the Europeans that had developed a strong stake in connecting the regional economy to the maritime trade. It was this common interest that spearheaded the political change and put the EIC at the helms of the affairs since around the mid-eighteenth century.

Section I: The Patna Hub: The Company and Cash-nexus

The term Patna hub refers to the cross-roads on the Ganga plain not only in the sense of a geographical meeting point of the rivers and overland routes but the term also signifies the convergence of commercial and political cross-currents in the transitional zone of Bihar. Therefore in order to put the Patna hub in perspective, this section analyzes the commercial impetus coming from the maritime zone of the Bay of Bengal and its effects on the productive hinterlands of Bihar. Located at the centre of the cross-roads, the Patna hub facilitated the cash-nexus which primed the wheels of commerce on the Ganga plain. Cash-nexus implies the operative mechanism of the commercial economy through which agricultural and trade goods were exchanged for ready money.

Recently the Dutch historian René Barendse has suggested that the Ganga plain developed a seaward orientation since the closing years of the seventeenth century. He reasons the growing insecurities of the Malwa route linking Agra and Surat as well as a far more time consuming and tedious overland transportation to the western coast induced the Indian traders to glide down the Ganga to Patna and then Hugli.¹² While

¹² R. J. Barendse, *The Arabian seas, 1700–1763*, vol. 1, *The western Indian Ocean in the eighteenth century* (Leiden: Brill, 2009), 374–75. Barendse substantiates his argument of the eastward trade ordination of Hindustan by giving two examples. First is that the transportation of land revenue from Bengal by well-guarded Mughal army was normally accompanied by merchant groups. This process

this explanation is partly valid considering the eastward focus of the Hindustani merchants, the connection between the hinterlands of Agra with the west coast and Gujarat became even less attractive for the merchants in the eighteenth century primarily owing to fluid political situation in western India. In this study, however, I am more concerned with the role of the Ganga River in orienting the economy of the fertile Ganga plain toward the maritime zone.

In the following paragraphs, I shall focus on the European Companies and Asian merchants who were vital forces behind the economic and political transformations of the Ganga plain. First, I discuss the role of the European Companies and local merchants in advancing the cash-nexus and cementing their mutual interests. Further, in order to understand the functioning of the cash-nexus, I go deeper into the dynamics of regional trade as seen from Patna. Subsequently, I will reconstruct the migration and settlement of the important South Asian and Armenian merchant communities in the eastern Ganga plain. Overall, the section discusses the evolving patterns of the relationship among the Europeans, local merchants and political elites in the Ganga plain in the course of the seventeenth and eighteenth centuries.

The European Companies and the Workings of Cash-nexus

The first ever European Company which gravitated towards the eastern Ganga plain was the English. Following the Mughal expansionary drive from the west to the east, the English Company opened a factory at Patna in 1620. Around this time, the English had extended their trading arm from Surat and Agra to the Ganga plain. Though this venture was a short-lived one, less than a year to be precise, yet it marked the importance of the region as an emerging commercial zone. However, in the early decades of the seventeenth century, Patna seems to have been only loosely integrated with the ports and markets of Bengal. In fact, the area along the Ganga from Patna to Hugli was yet to emerge as an important commercial zone on the scale matching that of the Coromandel Coast or Gujarat. By the mid-seventeenth century, the eastern Ganga plain came into the league of the other advanced commercial regions of the subcontinent when the European Companies also stepped into the region.

Already since the early decades of the seventeenth century the ports on the Bay of Bengal had attracted the attention of the Companies. Since 1606 when the Dutch received a farman from the king of Golconda for establishing a factory at Masulipatnam, the Bay of Bengal increasingly became a familiar zone for the VOC's commercial activities.¹³ By 1610, the Company established a factory at Mrauk-U, the

further aided the growth of commerce at Patna, which “became the terminus of the ‘mansabdars-caravan’ that transported the Mughal revenue from Bengal.” Secondly, after the first quarter of the eighteenth century the flow of correspondence between the Dutch Agra and Hugli factories through Patna began to assume large proportion in comparison to similar exchanges between Agra and Surat.

¹³ Tapan Raychaudhuri, *Jan Company in Coromandel 1605–1690: A study in the interrelations of European commerce and traditional economies* (s-Gravenhage: Martinus Nijhoff, 1962), 15–16; Heert Terpstra, *De vestiging van de Nederlanders aan de kust van Koromandel* (Groningen: M. De Wall, 1911), 33–43.

capital of Arakan, for meeting its need of rice and slaves for the labour deficit settlements at Batavia, Ambon and the Banda islands.¹⁴ In the 1620s, the VOC had established contacts with Balasore in Orissa for the procurement of commodities such as textiles, rice, sugar and slaves. From the peripheries of Arakan and Orissa, the Company now sharpened its focus on the deltaic area along the Hugli and the hinterland further west which was undergoing rapid agricultural and economic growth.

The Mughals' removal of the belligerent Portuguese traders from Bengal in 1632 and the proactive role of the Mughal administration to promote trade certainly had a favourable effect on the local economy.¹⁵ These political events, important though they are, do not fully explain why the European Companies went to Hugli (in the western delta) by the mid-seventeenth century and still hesitated to establish their regular or long-lasting factories in Chittagong or Dhaka to the east. One explanation could be that the eastern delta had yet to be integrated by the Mughals and was not yet fully developed commercially. In pushing the political and agricultural frontiers toward the eastern delta the Mughals faced logistical problems. The changing course of the numerous river channels and a landscape wooded with rainforests posed further difficulties. Hence, the proper integration of the eastern delta into the Mughal political economy was a slow-moving process as it took several decades before the Mughals could adapt to the riverine warfare in the humid zone. It was only after the Mughal governor Shaista Khan subdued the Arakanese pirates in the Chittagong area in 1666 that the region was stabilized. On the other hand, the western delta had been part of the Mughal political and economic system since the last quarter of the sixteenth century. During the first half of the seventeenth century, the region underwent significant economic and commercial expansion. Therefore, in order to participate in the commercial economy of the region, the European Companies had to move up the Hugli River and established their factories closer to the productive heartland.¹⁶

It was probably in 1634 that the VOC obtained a *qaul* (a deed of lease) from Azam Khan, the subadar of Bengal, to open a factory at Hugli. Yet, it was only with the receipt of the succession of *farmans* and *nishans* (orders or permits) from the Mughal emperor and the provincial authorities between 1636 and 1652 that the matters gradually moved forward. Between 1645 and 1647 the VOC laid a long lasting foundation in Bengal by established a factory at a place called Chinsura in Hugli. After

¹⁴ Piet Emmer and J. J. L. Gommans, *Rijk aan de rand van de wereld: De geschiedenis van Nederland overzee 1600–1800* (Amsterdam: Uitgeverij Bert Bakker, 2012), 380–81; Terpstra, *De vestiging van de Nederlanders*, 57–61.

¹⁵ Traditional historiography attaches too much weight to the role of the Portuguese in preventing the Dutch and English from entering the Bengal delta. The Companies had already beaten the Portuguese in Surat, Hormuz, and other parts of the Indian Ocean, and there is no reason why they could not have succeeded in the delta had the economic situation been right. See Susil Chaudhuri, *Trade and commercial organization in Bengal, 1650–1720: With special reference to the English East India Company* (Calcutta: Firma K. L. Mukhopadhyay, 1975), 9, 21; see also Raychaudhuri, *Jan Company in Coromandel*, 76–78.

¹⁶ Emmer and Gommans, *Rijk aan de rand van de wereld*, 380–381. For the agrarian expansion in the eastern parts of the delta, see Richard M. Eaton, *The rise of Islam and the Bengal frontier, 1204–1760* (New Delhi: Oxford University Press, 2006), 235–38.

1655, on the recommendations of the commissioner, Johan Verpoorten, the Bengal factories were made independent from the Dutch Pulicat “government” and the Hugli factory became the chief Dutch factory in the Bengal region.¹⁷ In 1638 the VOC established a factory at Patna but it was soon closed down because of the establishment costs and marginal profitability.¹⁸ Commercial activities at Patna seem to have resumed when, in 1646, the Dutch merchant Thomas van Cuijck obtained a “fierman” from Prince Shuja for the toll-free transportation of goods between Hugli and Patna via the Ganga.¹⁹ Unlike the English, who previously attempted to reach Patna from Surat and Agra, the VOC entered the commercial economy of the rich Ganga plain from the Bengal delta. Again, in contrast to the short-lived English venture of 1620, the Dutch established themselves there for almost one and a half centuries.²⁰ By the mid-seventeenth century, the Dutch Company maintained important commercial links with the procurement centres along the Ganga, reaching all the way up to Patna.

Having failed in their first attempt to operate from Patna in 1620–21, the English Company made a renewed attempt to participate in the trade of eastern India. Following in the Dutch footsteps, the English took another, logistically more feasible, route through the Ganga from the Bay of Bengal. By the early 1630s they were exploring ways and means to participate in the trade of Bengal and dispatched several ships like the *Hopewell* and the *Swan* towards Orissa. Susil Chaudhuri suggests that the English moved towards Bengal in the 1630s because famine in Gujarat and elsewhere on the subcontinent had made piece-goods a scarce commodity.²¹ The famine may have been a proximate cause, but the beginning of long-term commercial activities in Bengal had more to do with structural changes in the regional commercial economy that cannot be explained by a single environmental event. The fact that Bengal remained a lucrative market even after the famine ended and piece-goods production resumed in Gujarat points to the expanding commercial potential of the eastern Ganga plain. By 1651 the English Company had established its factory at Hugli and in the course of the seventeenth century its trading network had branched out along the river to Patna,

¹⁷ Prakash, *The Dutch East India Company*, 39, citing K. A. 1091, 12.06.1653, fo. 436v; G. D. Winus and M. P. M. Vink, *The merchant-warrior pacified: The VOC (the Dutch East India Company) and its changing political economy in India* (Delhi: Oxford University Press, 1991), 22, 42, citing ARA, VOC 677, Resolutie GG & R, 27.07.1655, n.f. Johan Verpoorten was appointed as special commissioner by the Batavia Council in 1653 to give his recommendations on Bengal and the possibilities of trade there.

¹⁸ W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 1, 1610–38 ('s-Gravenhage: Martinus Nijhoff, 1960), 721, Van Diemen, Lucasz. enz., 22.12.1638; W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 2, 1639–1655 ('s-Gravenhage: Martinus Nijhoff, 1964), 61, Van Diemen, Caen en Van der Lijn VIII, 18.12.1639. See also N. MacLeod, *De Oost-Indische Compagnie als zeemogendheid in Azië*, vol. 2, 1632–1650 (Rijswijk: Blankwaardt Schoonhoven, 1927), 198.

¹⁹ NA, VOC, Inv. Nr. 1162, Missive door de oppercoopluijden Pieter Sijme, ... aen de edele heren raden van India naer Batavia, 17.04.1746, see “Translaet uijt fierman bij den Prince Sjoesa,” fo. 84r.

²⁰ For the details on how the Dutch opened their factories in Orissa and Bengal see Prakash, *The Dutch East India Company*, pp. 34–40, and Winus and Vink, *The merchant warrior pacified*, 20–23.

²¹ Chaudhuri, *Trade and commercial organization in Bengal*, 21.

Rajmahal, Kasimbazar, Malda, and also downstream to Dhaka.²² Thus, one may ask, what transformation occurred in the economy of the eastern Ganga plain during the first half of the seventeenth century that enabled it to attract the Europeans and other merchants and to keep them supplied with commodities?

The most plausible explanation seems to be the growing agricultural expansion and commercialization of the region between Patna and Hugli. These changes helped integrate the region with the maritime commerce and attracted the Companies to participate in the regional trade. After the eastern delta came under Mughal control, more lands were brought under the plough. Agricultural expansion, food production, demographic growth, and the growth of trade went hand in hand, which explains why Bengal emerged as one of the most important commercial zones in the Indian subcontinent in the late seventeenth and eighteenth centuries.

The existing literature has paid some attention to the commercial activities of the Asian and European merchants in Bengal, the local economy and markets, and society by highlighting the commercial operations, methods of procurement, long-distance trading networks, and local trade and market structures during the Mughal and early colonial periods.²³ Readers interested in tables and figures on trade statistics can find a good deal of data in these works. In this chapter I am more concerned with the question of interactions between the European Companies and local merchants and the economic processes that such interaction engendered. I shall examine the evolving pattern of their relationship in the seventeenth and eighteenth centuries in an effort to underscore the role of the cash-nexus in the political economy of the Ganga plain. I shall discuss the local merchants first: who were they?

While the Jain and Bania merchants in Gujarat; the Maraikkars, Mappilas, and Saraswat Brahmins on the Malabar Coast; and the Chettis, Kelings, and others on the Coromandel Coast had traditionally rooted themselves in the commerce of these regions, Bengal had no comparable trading community of its own. Therefore in Bengal the new migrants from the other parts of India—including Khattris, Marwaris, and Jains—started their profitable ventures in the early modern period. As we have noted, this development followed on the heels of Mughal political expansion, and the newly emigrated merchants subsequently became entrenched in the local economy. The economic clout of these merchants continued to consolidate through the seventeenth and eighteenth centuries thanks to the expanding commercial economy in general and the European Companies' commerce in particular. In the eighteenth century, some big

²² William Foster, ed., *The English factories in India 1651–1654* (Oxford: Clarendon Press, 1915), 20. After the Mughals conquered the eastern delta and made Dhaka the capital of Bengal, the English Company established a new factory there in 1668; see Sukumar Bhattacharya, *The East India Company and the economy of Bengal from 1704 to 1740* (Calcutta: Firma K. L. Mukhopadhyay, 1969), 10.

²³ Chaudhuri, *The trading world of Asia and the English East India Company*; Chaudhuri, *Trade and commercial organization in Bengal*; Prakash, *The Dutch East India Company*; Sushil Chaudhury, *From prosperity to decline: Eighteenth century Bengal* (New Delhi: Manohar, 1995); Chatterjee, *Merchants, politics and society*; Rajat Datta, *Society, economy and the market: Commercialization in rural Bengal, c. 1760–1800* (New Delhi: Manohar, 2000); Tilottama Mukherjee, "The Co-ordinating state and the economy: The Nizamat in eighteenth-century Bengal," *MAS* 43:2 (2009): 389–436.

merchants such as Khwaja Wajed, Deep Chand, Amir Chand, and the Jagat Seths formed associations with the political elites and by mid-century many of them had become power-brokers in their own right. This involvement with the Nawabs for monopoly control of some branches of trade lasted as long as the interests of traders and bankers remained secure. It became increasingly apparent to the merchants that the Nawabs were poorly capable of handling the economic and military pressures coming from the maritime forces as well as from the Marathas and Perso-Afghan warlords. When the merchant magnates realized that the Nawabi regime alone could not guarantee their continuing wealth and prosperity, they allied with the European maritime powers in the belief that such alliances would similarly secure their economic interests. As we will see below, the economy of eastern India took a distinct maritime orientation in the eighteenth century. The prosperity of local merchants became closely connected with the maritime trade in which they increasingly participated along with the European merchants. In order to highlight the emerging interdependent relationship between the local merchants and European Companies, below I shall discuss some aspects of their interactions and the workings of the cash-nexus.

Dynamics of Trade at Patna

From the second half of the seventeenth century, the Companies procured opium, saltpeter, and textiles with the active cooperation of local merchants at Patna. The “bullion for goods” character of this trade is well-described in the scholarly literature.²⁴ Relatively less explored is the role of money in cementing the inter-dependence of the local merchants and the European Companies. As a result of the greater inflow of liquid cash, a related development was the acceleration of the production of agricultural and commercial goods. The expanding commercial economy also prompted some Mughal officials to participate in overseas commerce.²⁵ However, it is hard to find a convincing explanation as to why such ventures stopped towards the end of the seventeenth century. Perhaps the growing economic opportunities in the region itself were able to satisfy their monetary needs. It is also possible that they now dropped the highly remunerative but often risky and uncertain overseas ventures in favour of the sure gains to be made at home from simply taxing, maneuvering, and often extorting local merchants.²⁶ Another important group, the zamindars from eastern India, rarely

²⁴ Om Prakash, *Bullion for goods: European and Indian merchants in the Indian Ocean trade, 1500–1800* (New Delhi: Manohar, 2004).

²⁵ Satish Chandra, “Some aspects of the growth of a money economy in India during the seventeenth century,” *IESHR* 3:4 (1966): 323–25; see also Satish Chandra, “Commercial activities of the Mughal emperors during the seventeenth century,” *BPP* 78:146 (1959): 92–97.

²⁶ In the eighteenth century, many Mughal officials took an interest in the expanding commerce of the region and made good fortunes. Around 1712, Husain Ali Khan, the governor of Bihar, had his own dealings with the European Companies at Patna; see Shatish Chandra, “Early relations of Farrukh Siyar and the Saiyid brothers,” *Medieval India Quarterly* 2:1–2 (1957): 142, cited in Karen Leonard, “The ‘great firm’ theory of the decline of the Mughal empire,” *CSSH* 21:2 (1979): 160. Apart from Husain Ali Khan, the case of Haji Ahmad, the brother of the Nawab Alivardi Khan, perhaps best illustrates how an influential political elite could amass great wealth without ever sending a ship overseas. Haji Ahmad and

displayed an interest in owning ships or directly participating in overseas trade, yet they actively promoted trade within their zamindaris, as we shall see in the next chapter.²⁷

The evidence in VOC documents suggests a competitive trade environment at Patna where the Company had to find its way around the saltpeter monopoly held by Mughal officials. With clever diplomacy and the exchange of gifts, the Company was able to procure the desired commodities and establish itself in the market.²⁸ In 1655, Joan Verpoorten hoped that by providing more kettles for refining saltpeter, the Company would be able to increase its purchase of the refined variety of saltpeter from 800,000 Dutch pounds to at least 1 to 1.2 million pounds annually.²⁹ In 1660, the procurement of raw saltpeter at Patna and Chhapra surged to 47,303 *man* (roughly about 3.4 million pounds) and was delivered by the twenty-one creditors of the Company.³⁰ Tulsi, Boijsa, Backton, Nourdj Mameth, Miersa Hassemallij, Nellou, Nijna Benjaen, Kasij, and others were among the merchants who were in debt to the VOC for money the company had advanced them for saltpeter.³¹ The expansion of trade continued and between 1665 and 1669 the VOC procured a total of 227,636 *man* of saltpeter.³² Along the same lines, the English Company also procured saltpeter by

Alivardi Khan became active in the government of Shujauddin in the 1720s, and by 1748 Haji Ahmad had reputedly amassed a fortune of “30 *caroa*’s *ropia*” in the form of jewels and cash, according to the Dutch sources. The figure of 30 *crore*—30 million rupees—is probably an exaggerated figure, but he did make a fortune promoting merchants like Amar Chand and taking an interest in the saltpeter business. For the reference to Haji Ahmad’s wealth, see J. E. Schooneveld-Oosterling, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 11, 1743-1750 (Den Haag: Instituut voor Nederlandse Geschiedenis, 1997), 673, Van Imhoff XXXI, 31.12.1748; for his connections to and support of Amar Chand and Deep Chand, see BL, APAC, IOR, P/1/20, Bengal Public Consultations, Fort William, February 1747/48, fos. 341v-342v; see also Sushil Chaudhury, *From prosperity to decline*, 118, 265-66. On the early career of Alivardi Khan and Haji Ahmad in Bengal, see Jadunath Sarkar, ed., *History of Bengal*, vol. 2, *Muslim period, 1200-1757* (Dacca: University of Dacca, 1948), 436–40.

²⁷ Some zamindars functioned as brokers and later ventured into the overseas trade in partnership with the Europeans; see Aniruddha Ray, “Two Indian brokers of the French East India Company in Eastern India during the first half of the eighteenth century,” in *Business history of India*, ed. Chittabrata Palit and Pranjal Kumar Bhattacharyya (Delhi: Kalpaz Publications, 2006), 117.

²⁸ NA, VOC, Inv. Nr. 1212, *Memorie . . . door Joan Verpoorten*, 28.10.1655, fos. 216r–v. Although the Nawab’s monopoly of the saltpeter trade in Patna created problems, with the help of the king’s diwan the VOC was able to procure 20 thousand *man* of saltpeter in 1655.

²⁹ NA, VOC, Inv. Nr. 1212, *Memorie . . . door Joan Verpoorten*, 28.10.1655, fo. 222v. In 1655 the VOC also received 18,000 to 20,000 *man* saltpeter from Ahmad Beg who sold on behalf of the Nawab Jaffarbeg, at the rate of 2½ rupees per *man* of 64 Dutch pounds, the same rate the English had agreed to pay. “Ondertusschen is dien heer Ametbeeck [Ahmad Beg] contentement gedaen over de aengebooden 18 à 20000 *man* salpeter om voor den nabab S’jaffrachan aen de Comp. te leveren tot 2½ *ropia* de *man* van 64 [pond], ter occasie dat de Engelschen ondernomen ende toesegginge gedaen hadden die partije te ontfangen, daerin noch tijdich geprevenieert sijn, alsoo buyten hunne kennisse bij de Comp. ter voorsz. prijse geaccepteert wierden,” see Coolhaas, ed., *Generale Missiven*, 2:796, Maetsuyker, Hulft, enz. IV, 26.01.1655.

³⁰ NA, VOC, Inv. Nr. 1232, “Relaes ofte kort schriftelijck verhael door den Coopman Arnold van Wachtendonck,” 01.09.1660, fo. 597v.

³¹ NA, VOC, Inv. Nr. 1232, “Relaes ofte kort schriftelijck verhael door den Coopman Arnold van Wachtendonck,” 01.09.1660, fos. 597r–607v.

³² NA, VOC, Inv. Nr. 1277, “Memoria raackende ’s Comp:s voordeligen handel,” 20.12.1669, fos. 1421v–1422r.

advancing money to local merchants. In 1683 saltpeter suppliers who owed advance money to the EIC were Cossynaut, Rammaw, Hera, Chunda and Buctmall.³³ These examples make it clear that from around the mid-seventeenth century a group of merchants, mostly Hindus but also some Muslims, had begun forging trading contacts with the VOC and EIC at Patna and in Bengal in general. The cooperation between the Companies and the local merchants continued through the next century. At the heart of such trading contacts were the commodities—not just saltpeter, but opium and textiles—sold for hard cash, and the benefits accrued to the local traders, the provincial government, and a host of rajas and zamindars.

In Chapter 4, we noted the opium production in Bihar and the different merchant groups who began purchasing this in the seventeenth century. Opium created another opportunity for profit and capital accumulation. The local merchants in Bihar benefited from the growing demands for opium by the European Companies and private merchants alike. In the VOC documents, a host of names appear as *hoekiels* (*vakeels*) or agents and *makelaars* (brokers), and it is clear that the Company depended on these brokers and merchants. It is impossible to follow them all, but in the 1730s Bhowani Das appears as a prominent agent and supplier of opium,³⁴ while in the next decade Meer Afzal was reported to be the *vakeel* of the VOC at Patna and he was reputedly a man of great experience in the trade affairs of Bihar.³⁵

The expansion of trade in Patna goods continued through the early eighteenth century and saltpeter, opium, and textiles attracted more bullion into the local economy. Apart from the role of bullion in commercial expansion generally, individual merchants put the money to good use. Deep Chand acquired the *faujdari* (keeping of law and order) of Chhapra and Bhojpur, a rich saltpeter producing area, and he reportedly paid 100,000 rupees to the Nawab Alivardi Khan for the *faujdari* of Bhojpur. His brother Amir Chand tried to obtain the office of darogha at the Patna mint by offering 50,000

³³ BL, APAC, IOR, G/28/1, Patna Diary, January 13, 1682/3, n.f.

³⁴ While Nanderam and Beharidas are mentioned as *hoekiels*, Kirtsen Ram Agri is named as *makelaar* in 1710. Another *makelaar* called Satae appears in the Company's good books. See NA, VOC, Inv. Nr. 1796, MvO Willem de Roo to Anthonij Huijsman, 06.11.1710, pp. 135–137; NA, VOC, Inv. Nr. 2288, From Hugli to Batavia 5.03.1733, "Brief van den directeur Rogier Beerenaert nevens den raad tot Houglij aan haar hoog edelen tot Batavia," for the mention of Bhowani Das see p. 72. Interestingly, Bowannydass also appears in the English Company's records of 1683 when the English contracted him and sent him to Banaras with 2000 rupees "to buy all sorts of goods with direction for colours." See BL, APAC, IOR, G/28/1, Patna Diary, October 16, 1683, n.f.

³⁵ NA, VOC, Inv. Nr. 2849, "Memorie ...door den afgaande Directeur der Bengaalse Directie Jan Kersseboom, aan deszelfs successeur in dat ampt den Heer Louis Taillefert, oud eerste secretaris van welm: Haar Hoog Edelens, omme zig daar na in de maneance van zaken tot contrarie ordre van Haar Hoog Edelens te kunnen reguleeren" (hereafter, MvO Kersseboom to Louis Taillefert, 14.02.1755), signed by Jan Kersseboom at Hugli on 14.02.1755, fos. 89r–136v, for the Patna merchant Meer Afzal see fo. 102v: "het provisioneel opperhoofd La Tour in goede vrindschap heeft met 's Comp:s gewezen hoequil in Patna, Mier Afzel, een man van grote experientie, inde zaken van de handel in Behaar." On Meer Afzal and his son Meer Ashraf's trading connections with the other Europeans in the 1740s and 1750s, see Chatterjee, *Merchants, politics and society*, 73–76.

rupees to the Nawab.³⁶ Thus, some features of the “portfolio capitalists” start appearing in the business world of Bihar, too.³⁷ In eastern India it was not only the local merchants who farmed revenue; the Companies also ventured into the profitable economic activities of land management and rent collection.³⁸ Interestingly, during the eighteenth century while the Companies were taking some interest in land revenue collection, the zamindars seem to have taken more interest in trade.³⁹ The zamindars also raised their own militia and challenged the provincial Mughal authorities, as we shall see in Chapter 7. In order to maintain their militia, these warlords needed more money. Hence, land revenue and incomes from trade and customs duties all contributed to meet their growing need for cash, and the cash-nexus helped finance the military expansion of both the provincial government and the zamindars.⁴⁰ Just as the commerce of the Europeans and other merchants benefitted both traders and brokers, it also enriched the coffers of the local and provincial political elites.

While the services of agents and brokers were indispensable to the VOC and EIC, in the eighteenth century some prominent merchants monopolized important branches of trade. The Armenian merchant Khwaja Wazed, the Kashmiri merchant Meer Afzal, the Punjabi Khatri merchant brothers Deep Chand and Amir Chand held monopolies of the more important commodities of Bihar. These merchant-magnates

³⁶ For the acquisition of faujdari of Bhojpur by Deep Chand see Schooneveld-Oosterling, ed., *Generale Missiven*, 11:542, Van Imhoff XXV, 31.12.1747 and pp. 672, 793: “sig voor ’t overige flatterende dat het met den salpeterinsam beter zoude vloten nu den Sjoppriassen fausdaar Diepsjent in sijne groote voornemens tot bemagtiging van het Boospourse land, en dus met hetselve van den salpeter en amphioen tegelijk volkomen meester te worden” (p. 672, Van Imhoff XXXI, 31.12.1748). For the darogha of the mint at Patna: “en zijn broeder [or Amir Chand] voormelt voor de somme van 50.000 ropia losgekogt, mitsgaders tot daroga over de munt in Patna doen aanstellen, hoewel gemelt nawab op de doleance onser bediendens verklaard hadde haar gaarne de praferentie te willen geven, mits jaarlijks 50.000 ropia betalende,...” (p. 793, Van Imhoff XXXVI, 31.12.1749).

³⁷ Sanjay Subrahmanyam and C. A. Bayly, “Portfolio capitalists and the political economy in early modern India,” *IESHR* 25:4 (1988): 401–24, esp. 418. The term portfolio capitalist implies “an entrepreneur who farmed revenue, engaged in local agricultural trade, commanded military resources (war animals, arms and human labour), as well as on more than the odd occasion had a flutter in the Great Game of Indian Ocean commerce.”

³⁸ Farhat Hasan, “Indigenous cooperation and the birth of a colonial city: Calcutta, c. 1698–1750,” *MAS* 26:1 (1992): 66–67. The Dutch too managed the land revenues of some villages in Bengal, see, NA, Hoge Regering Batavia, Inv. Nr. 244, “voorts heeft d’ Comp: al van den beginne verkregen het usufruct en bestier der dorpen,” fo. 4r.

³⁹ In 1758, the Raja of Bettia farmed out saltpeter fields to the highest bidder from the month of October. It was reported that the Raja desired to give saltpeter to the Dutch rather than to the English. NA, VOC, Inv. Nr. 2920, “Aan den Edele Achtbare Heere Adriaan Bisdom Directeur en opperbeieder...,” From Patna signed on 28.09.1758 and received at Hugli on 11.10.1758, fos.1244v–1245r.

⁴⁰ NA, VOC, Inv. Nr. 2288, “Extraordinaire vergadering gehouden op Woensdag voor de middag den 21: Januarij 1733, alle present,” p. 195: “dat den presenten Nawab Sousachan een extraordinaire formidabel krijgsmagt op de been houdende bestaande wel in 45,000 ruijters en voetvolk, en zulx wel 35,000 man meerder dan sijn voorsaat ooit in dienst gehad heeft.” For the zamindar’s militia at Oeriab, see NA, VOC, Inv. Nr. 8762, From Hugli to Batavia 25.01.730, “Journaal in form van een dagregister gehouden door den Lijutenant Commandant Jacob van der Helling,” entry of 1.10.1729, pp. 48–49: “bij het dorp Serampoer over de Bergen van Oeriab al waar een Siemidaar leijt met 50 roerschutter staat[,] onder het gebied van den ragia Sessehan.” For a chieftain of Kharagpur near Munger, see the entry of 07.10.1729, p. 56: “tusschen Coeder Kotta en Sittacon den Ragier Mahomet Asiem met 5[00] á 600 man zoo ruijters als roerschutters lag.”

wielded considerable clout in trading and political circles and tried to control prices to ensure maximum gain. The famous Jain-Marwari bankers from the house of the Jagat Seths also exerted great influence on the financial services and managed the provincial government's treasury in Bengal. These merchants belonged to distinct merchant communities that had settled and developed strong economic interests in eastern India in the age of maritime commerce.

The Merchant Communities and the Merchant Magnates

The eastern Ganga plain drew a number of merchants from Hindustan and other parts of Asia and some of them were able to make huge fortunes. Although we have no diary of a northern Indian merchant magnate in comparable to that of the south Indian merchant Ananda Ranga Pillai at Pondicherry,⁴¹ the fragmentary evidence allows us to reflect on the meteoric rise of some merchants who dominated the booming markets of the Ganga plain. After the battle of Plassey, the EIC realized the threat that big merchants and bankers had posed to the erstwhile Nawabi regime. Thus as soon as it consolidated its power in Bengal in the second half of the eighteenth century, it moved to undercut the merchant magnates and discourage the formation of very large business enterprises.⁴²

The Armenians

The Armenian merchant community centred in New Julfa in Persia spread across Eurasia and the Indian Ocean port cities during the early modern period, and their trading activities on the Ganga plain date from the seventeenth century if not earlier.⁴³ In 1665 the Mughal emperor Aurangzeb issued a royal decree allowing the Armenians to establish a settlement in Saidabad, in the vicinity of Maxudabad (later Murshidabad).⁴⁴ From the journal of Hovhannes Joughayetsi we know that the Armenians had an extensive trade network by the late-seventeenth century. On the basis of this journal it has been suggested that "a substantial community of Armenians"

⁴¹ Ananda Ranga Pillai, *The private diary of Ananda Ranga Pillai, dubash to Joseph François Duplex, governor of Pondicherry: A record of matters, political, historical, social, and personal, from 1736 to 1761*, trans. and ed. by J. Frederick Price and K. Rangachari, 12 vols. (Madras: Government Press, 1904–28). Almost a century ago another south Indian merchant who made big fortunes as a result of the assistance rendered to the Europeans was Kasi Viranna. For a biographical description of the merchant, see Yogesh Sharma, "A life in many parts: Kasi Viranna—A seventeenth century South Indian merchant magnate," *MHA* 1: 2 (1998): 261–90.

⁴² Sushil Chaudhury, "Armenians in Bengal trade and politics in the 18th century," in *Les Arméniens dans le commerce asiatique au début de l'ère moderne*, ed. Sushil Chaudhury and Kéram Kévonian (Paris: Fondation maison des sciences de l'homme, 2008), 158; Lakshmi Subramanian, "Banias and the British: The role of indigenous credit in the process of imperial expansion in western India in the second half of the eighteenth century," *MAS* 21:3 (1987): 473–510; Leonard, "The 'great firm' theory," 163–67.

⁴³ Chaudhury, "Armenians in Bengal trade," 149.

⁴⁴ Sebouh David Aslanian, *From the Indian Ocean to the Mediterranean: The global trade networks of Armenian merchants from New Julfa* (Berkeley: University of California Press, 2011), 50; Chaudhury, "Armenians in Bengal trade," 150.

was residing in Patna, while another Armenian colony in Bihar sarkar had its own church.⁴⁵

The celebrated eighteenth-century entrepreneur Khwaja Wajed would probably not have achieved such success as he did had he been unable to draw on the expertise and cooperation of the Armenian merchant community of Bengal. While the business acumen of the Armenians is beyond doubt, they also benefitted from their relationships with the Bengal Nawabs, who were favourably disposed towards many of them. For example, Khwaja Wajed was able to operate his extensive salt trade in Bengal while paying only one percent customs duty.⁴⁶ It is hard to establish whether many Armenians actually converted to Islam, but several Armenian merchants adopted Islamic names probably to get more access to the Mughal-dominated political economy. Further, as the Armenians spoke Persian and many of them were culturally similar to the Muslim elites, they easily gained the latter's trust and confidence. As traders and brokers many of them also developed an excellent rapport with European merchants, which helps explain why many of them functioned as "go-betweens" or brokers for the Europeans and the Mughals.⁴⁷

Khwaja Wajed Fazel was born at Azimabad (Patna),⁴⁸ probably at around the turn of the seventeenth century, the son of an influential merchant named Coja Mahmet Fazel. By the 1740s, the commercial success of Khwaja Wajed had earned him the honorific title *Fakhru'l-tujjar* (pride of the merchants). He also gained access to the provincial court at Murshidabad and cultivated friendship with the Nawab Alivardi Khan. As a prominent supplier of commodities to the European Companies, he also had good relations with them.⁴⁹ In the 1750s he managed a thriving domestic trade,

⁴⁵ Levon Khachikian, "The ledger of the merchant Hovhannes Joughayetsi," *Journal of Asiatic Society of Bengal* 8:3 (1966): 153–86, esp. pp. 159, 162. For a reference to the Armenian priest and religious services of the community being conducted in a private house at Patna as referred to by Hovhannes, see Aslanian, *From the Indian Ocean to the Mediterranean*, 249.

⁴⁶ BL, APAC, IOR, Eur. Mss., D283, fo. 22, cited by Chaudhury, "Armenians in Bengal trade," 153. Different customs rates were applied to Indian non-Muslim merchants and the European Companies. For example, in 1694 the VOC sold goods such as sandalwood, areca, and conch shells to local merchants who transported these to different markets and paid 7 percent duty, while on the same goods the VOC paid only 4 percent. See W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 5, 1686–1697 ('s-Gravenhage: Nijhoff, 1975), 691–92, Van Outhoorn, Van Hoorn, enz. IX, 30.11.1694: "men leed er enige tijd zeer aan geldgebrek, maar men kon er sandelhout, areca en chancos verkopen, de goederen werden op naam der kooplieden opgevoerd, die 7% tol moesten betalen tegen de V.O.C. 4%, zij worden echter 'buytengemeen gevexeert'."

⁴⁷ Aslanian, *From the Indian Ocean to the Mediterranean*, 4; Kapil Raj, "Mapping knowledge go-betweens in Calcutta, 1770–1820," in *The brokered world: Go-betweens and global intelligence, 1770–1820*, ed. Simon Schaffer, Linda Roberts, Kapil Raj, and James Delbourgo (Sagamore Beach, MA: Science History Publications, 2009), 115. See also, Bhaswati Bhattacharya, "Armenian European relationship in India, 1500–1800: No Armenian foundation for European empire?," *JESHO* 48:2 (2005): 277–322.

⁴⁸ From around the turn of the seventeenth century Patna was also known as Azimabad, for Prince Azim-us-Shan, a grandson of Aurangzeb who was the subahdar.

⁴⁹ For Khwaja Wajed's involvement in saltpeter trade and its supply to the Dutch, English and French see, *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde*

monopolized salt trade (the total worth of which would have been roughly a million rupees), had lucrative dealings in opium, and most important exerted his monopoly over the saltpeter trade.⁵⁰ The large business empire of Khwaja Wajed would have been impossible to run without the assistance and cooperation of other Armenians and some Indian merchants such as the Amir Chand and Deep Chand. His participation in the overseas trade is well known and eventually he came to own and employ at least six ships in the coastal and West Asian trades.⁵¹

His commercial success in the 1740s and 1750s is characteristic of an age fraught with political disturbances such as Nadir Shah's invasion, Maratha incursions, and the overall insecurity of the overland route through Hindustan. It was precisely in these troubled times that Khwaja Wajed made a fortune by turning increasingly to overseas trade. He was hardly unique, however, and during the same period the commercial economy of the eastern Ganga plain as a whole became more closely connected to maritime trade, a process accelerated by the declining health of the Mughal Empire. Bengal's nearly total dependence on maritime trade for imports of bullion had important implications for the political economy. The closely intertwined economic interests of the local and foreign merchants necessitated a more prudent political solution than the Nawabs were able to offer.⁵² When Khwaja Wajed threw in

Oostindische Compagnie, ed. H. K. s'Jacob, vol. 13, 1756–61 (Den Haag: Instituut voor Nederlandse Geschiedenis, 2007), 161, Mossel XXXII, 31.12.1757.

⁵⁰ NA, VOC, Inv. Nr. 2763, From Hugli to Batavia 20.03.1750, "Memorie ingevolge de gegevene orde door de hoge Indiasche Regeering bij der selver geerd missive van den 2 October jongstl: ter narigt van den heer g' eligeerd Directeur Jan Kersseboom ontworpen door den Raad Extraordinaire van Nederlandsch India en afgaande Directeur der Bengaalsche directie Jan Huijghens omme sig in het bestier van zaken naar tijds gelegentheid daar van te bedeenen," signed by Jan Huijghens at Hugli on 16.03.1750, pp.448–470, see esp. p 458 for the Khwaja Ashraf's large purchases of opium; see also NA, VOC, Inv. Nr. 2732, From Hugli to Batavia 11.02.1750, fos. 8v–9r, the Dutch believed Khwaja Ashraf was an agent of Khwaja Wajid; see also Chaudhury, "Armenians in Bengal trade," 153; Sarkar, *Glimpses of medieval Bihar economy*, 88.

⁵¹ NA, VOC, Inv. Nr. 2661, "Lijst van zodanige inlandse schepen als binnen korten uijt de Ganges staan g'expediert te werden, te weten," Hugli in het Fort Gustavus, 10.01.1747, fos. 162r–65v, see for Kwaja Wajid's Surat departing ship *Salamat Rissan*, fo. 163r; NA, VOC, Inv. Nr. 2689, Hugli in the Fort Gustavus, 25.11.1747, "Lijst van zodanige inlandse schepen als er geduurende de jongste zuijder mousson in de Ganges g'arriveerd," fos. 136r–39r, for Wajid's ship *Salamat Mensjief* which returned from Surat with 850 bales of cotton, along with other valuable cargoes see fo. 136r; NA, VOC, Inv. Nr. 2689, "Lijst van zodanige inlandse schepen als eerst daags uijt de Ganges staan gedepecheert te werden, te weten," for Wajid's ship *Salamat Masjel* departing to Surat with cargoes of rice and sugar among others, Hugli in the Fort Gustavus, 15.01.1740, fo. 140r; NA, VOC, Inv. Nr. 2862, From Hugli to Batavia 15.02.1755, "Lijst van zodanige inlandsche en andere vreemde schepen," Hougly in't Fort Gustavus den 16.12.1754, pp. 836–837; and NA, VOC, Inv. Nr. 2862, "Lijst van zodaenige inlandse en andere vreemde schepen als er geduurende deese Noorder Mousson successive uijt de Ganges vertrocken zijn," Hugli, 20.03.1755, pp. 1079–1081; see for the prerogatives obtained by Khwaja Wajid from the Murshidabad court for saltpeter trade, NA, VOC, Inv. Nr. 2849, MvO Kersseboom to Louis Tallefert, 14.02.1755, fo. 105v; see also Chaudhury, "Armenians in Bengal trade," 154; Chatterjee, *Merchants, politics and society*, 71–72.

⁵² On the Nawab Sirajuddaula and his policies, see Brijen K. Gupta, *Sirajuddaulah and the East India Company, 1756–1757: Background to the foundation of British power in India* (Leiden: Brill, 1966), 85–102; see also S. C. Hill, ed., *Bengal in 1756–1757: A selection of public and private papers dealing with the affairs of the British in Bengal during the reign of Siraj-uddaula*, 3 vols. (1905; repr. New York: AMS Press, 1968), 1: 58–60.

his lot with the English during the Plassey conspiracy, he probably did so with the full support of the Armenian merchant community, which he had led since 1741.⁵³ The convergence of economic interests of local and European merchants in the age of maritime commerce was not unique to the Armenians.

The Punjabi Khatri

The immigration of Punjabi Khatri merchants to the eastern Ganga plain probably began in the 1570s when they provided supplies to the Mughal conquerors. After the conquest of Bengal, many of them settled and became an important element in the local economy. By the late-seventeenth century some of these merchants began to acquire land and by the 1700s some, like the Burdwan raj family, had become prominent zamindars or rajas.⁵⁴ Unfortunately, the fascinating history of Khatri expansion into the Ganga plain during the Mughal period has attracted scant attention from scholars. As a result we know comparatively little about their activities during the Mughal period. I will make an effort to join the dots to get a clearer picture of the Khatri community's involvement in trade. The achievements of the leading eighteenth-century Khatri merchants such as Deep Chand and Amir Chand can best be understood by looking into the operational dynamics of the Khatri community in Bihar and Bengal. The Chand brothers were not the only traders from the Khatri community and it would have been impossible for them to run their business without the cooperation of the other members of the community. In order to appreciate the making and unmaking of the Chand brothers, I shall first reflect a little on the pre-history of the Khatri community on the Ganga plain.

It is hard to establish the actual number of the Khatri residents in the eastern Ganga plain during the seventeenth and eighteenth centuries. However, qualitative evidence points to small communities of Khatri in a number of towns in eastern India. In the 1640s, the Portuguese traveller Sebastien Manrique reported about the wealthy residents of Dhaka, especially "Cataris" or Khatri.⁵⁵ The presence of Khatri along the eastern tracks of the Ganga might have prompted the ninth Sikh guru, Tegh Bahadur, to visit Bihar and Bengal to win more adherents, and when the guru visited Dhaka in

⁵³ If Sushil Chaudhury is right in identifying "Coja Avid" as Khwaja Wajed, then the latter assumed the leadership of the Armenian merchants of Hugli in 1741; see Chaudhury, "Armenians in Bengal trade," 149. According to Kumkum Chatterjee, Wajed was the leader of not only the Hugli merchants but also for those at Patna, see, *Merchants, politics and society*, 72.

⁵⁴ John R. McLane, *Land and local kingship in eighteenth-century Bengal* (Cambridge: Cambridge University Press, 1993), 25, 130–36; also see Scott C. Levi, *The Indian diaspora in Central Asia and its trade* (Leiden: Brill, 2002), 107. For a passing reference to the simultaneous growth of Mughal power and the rise of Khatri's trade network between the Ganga plain and central Asia, see Muzaffar Alam, "Trade, state policy and regional change: Aspects of Mughal-Uzbek commercial relations, c. 1550–1750," *JESHO* 37:3 (1994): 211; Iqtidar Alam Khan, "Middle Classes in the Mughal Empire," *Social Scientist* 5:1 (1976): 42.

⁵⁵ Sebastien Manrique, *Travels of Fray Sebastien Manrique, 1629–1643*, vol. 1, *Arakan*, trans. and ed. C. Eckford Luard and H. Hosten (Oxford: Hakluyt Society, 1927), 44; also see Donald F. Lach and Edwin J. Van Kley, *Asia in the making of Europe*, vol. 3, *A century of advance* (Chicago: University of Chicago Press, 1993), 680.

1666, the Khatri community welcomed him. The birth and early childhood of the tenth Sikh guru, Guru Gobind Singh, at Patna Sahib in 1666 perhaps indicates the presence of the Khatri/Sikh merchant group along the trade networks of the Ganga.⁵⁶ John McLane suggests that there were also Sikh (probably Khatri) communities in other Bengali towns such as Sylhet, Chittagong, Sandip, and Lashkar.⁵⁷ Their presence in these Bengali towns is hardly surprising given their assistance to the Mughals as the latter pushed their agrarian and political frontiers eastward.

It is not known when the merchant-brothers Amir Chand and Deep Chand came to Patna from Agra.⁵⁸ Since they were fairly well-established in the trade of Bihar and Bengal by the 1740s, they probably migrated in the early eighteenth century. Whenever they might have reached Patna, the Chand brothers were simply following in the footsteps of the Khatri merchants who had been working the eastern Ganga plain since the late 1500s. How exactly the Khatri brothers established themselves in the trading world of eastern India is unknown, but the success of their business certainly depended on the network of Khatri traders already active in the region. In an arrangement typical of family businesses, Deep Chand was mostly located at Patna while Amir Chand supervised the business concerns in Hugli and Calcutta. Again we do not know how the Chand brothers recruited their agents, managers, and other functionaries to expand and diversify their business.⁵⁹ What we do know is that while earlier generations of Khatri merchants depended on and exploited the overland trade routes and traded in raw silk, cotton textiles, and possibly opium, the Chand brothers' fortunes depended heavily on maritime trade.⁶⁰ Their extensive dealings with the Europeans Companies clearly show that the Chand brothers' real income actually came from the expanding demands generated by overseas trade. Despite trading disputes and problems with the English Company, the Chand brothers could hardly have prospered without the overseas merchants who bought merchandise from them.⁶¹ Taking the Chand brothers as a case study of the trading and commercial interdependence between local and overseas merchants helps us better understand contemporary economic and political dynamics

⁵⁶ J. S. Grewal and S. S. Bal, *Guru Gobind Singh (a biographical study)* (Chandigarh: Punjab University, 1967), 30–46.

⁵⁷ McLane, *Land and local kingship*, 132. As late as 1830, there were 1,070 Khatri out of a total Hindu population of 31,429 in Dhaka; Sharif Uddin Ahmed, *Dacca: A study in urban history and development* (London: Curzon Press, 1986), 20–21, cited by McLane.

⁵⁸ Chatterjee, *Merchants, politics and society*, 72; for Amir Chand as reflected through the records of the Mayor's Court of Calcutta and the Supreme Court in the 1740s and 1750s, see N. K. Sinha, *Economic history of Bengal: From Plassey to the permanent settlement*, vol. 1 (Calcutta: The Author, 1956), 238–44.

⁵⁹ For example many smaller merchants depended on the power and influence of Amir Chand and were hardly in a position to break off relations with him even if there were disputes. See Chatterjee, *Merchants, politics and society*, 75.

⁶⁰ René Barendse has shown that the Khatri merchants dominated the overland silk trade between Bengal and Gujarat. For the decline of overland trade through the Ganga plain and primacy of seaborne traffic from the late seventeenth and early eighteenth centuries, see R. J. Barendse, *The Arabian Sea: The Indian Ocean world of the seventeenth century* (Armonk: M. E. Sharpe, 2002), 164.

⁶¹ BL, APAC, IOR, P/1/20, Fort William, February 1747/48, fos. 341v–342r. See for a debt dispute between the English and Deep Chand in which Haji Ahmad supported the latter.

and explains why the brothers collaborated with the English Company during the Plassey conspiracy. The importance and profitability of these relationships is clear from the fact that when the British took over the regime and made the Nawabi rule subservient, few merchants lamented the good old days of the Nawabs.⁶²

The Marwari/Jain Community

The Marwaris are so called because they originated in the Marwar region in Rajasthan. They practiced Jainism or Vaishnavism, and like the Khatri they followed the Mughal armies to the Ganga plain. Coming from Rajasthan, they had access to arid zone resources such as zebu cattle, which they put to good use transporting grain for the Mughals, as well as money, which formed the seed capital for their forays into trade. By the late sixteenth century, the Marwaris were active in interregional trade in grains, textiles, cottons, and raw silk. Their history of the Marwaris' trading activities during the Mughal period is still under-explored, but their spread across much of Bihar and Bengal is generally assumed to have peaked in or after the late eighteenth century.⁶³ The extensive *hundi* or credit network operated by Marwari and Khatri merchants in the eighteenth century certainly existed during the Mughal period.⁶⁴ While the traditional pilgrimages to places such as Prayag, Banaras, Gaya, Maner, and Hajipur facilitated contacts among pilgrims and traders and the exchange of information and credit, the addition of new groups of traders led to the emergence of new pilgrimage sites with similar mixtures of spiritual and worldly concerns.

The presence of Marwari traders along the Ganga during the Mughal period comes into sharp relief from the location of their pilgrimage on the river banks. Just as the Sikhs had maintained their pilgrimage at Patna Sahib, a place close to Patna, since the late seventeenth century, the Marwaris too had their pilgrimage on the Ganga. In Chapter 3 we mentioned the Jain pilgrimage at Champanagar, about two hundred fifty kilometres downriver from Patna, about half way to the delta.⁶⁵ What is more interesting for our purposes is the patronage given to the pilgrimage by the descendants of reputed banking house of Bengal and by the maharaja of Jaipur. Did this pilgrimage function as an important link amongst the Jain/Marwari traders and bankers active in the eastern Ganga plain during the Mughal period and later? When Robert Montgomery

⁶² For example see, Suprakash Sanyal, "Ramchand Pandit's report on opium cultivation in 18th century Bihar," *BPP* 87:2 (1968): 181–89.

⁶³ C. A. Bayly, "Patrons and politics in northern India," *MAS* 7:3 (1973): 355. For the geographical spread of "Bania" merchants in northern India by the seventeenth century, see Ishrat Alam, "Extracting social history from documents of medieval India," in *The varied facets of history: Essays in honor of Aniruddha Ray*, ed. Ishrat Alam and Syed Ejaz Hussain (Delhi: Primus Books, 2011), 62; see also Thomas A. Timberg, "A study of a 'great' Marwari firm: 1860–1914," *IESHR* 8:3 (1971): 264–83.

⁶⁴ Chatterjee, *Merchants, politics and society*, 178–83; Subramanian, "Banias and the British," 473–510; for the credit networks operated by the Khatri in the Mughal period, see Eaton, *The rise of Islam and the Bengal frontier*, 156–57. For an overview of *hundi* operation in colonial period, see L. C. Jain, *Indigenous banking in India* (London: MacMillan, 1929), 70–83.

⁶⁵ William Francklin, *Inquiry concerning the site of ancient Palibothra, conjectured to lie within the limits of the modern district of Bhaugulpoor, according to researches made on the spot in 1811 and 1812* (London, 1815), 13–15.

Martin visited Champanagar in the nineteenth century he saw two temples whose reconstruction was being paid for by the descendants of Jagat Seth. Dedicated to Vasupujya, the temple had twenty-four small cross-legged figures in white marble representing Jain deities. Martin writes that “Many pilgrims, especially from Marwar in the west of India, are said to frequent these temples,” which he dated to 1637, around the time that increasing numbers of Marwari merchants were moving onto the eastern Ganga plain.⁶⁶ Once a year, in February, the Marwaris/Jains would make a pilgrimage to Vasu Paduka in Champanagar.⁶⁷

They had been active there for more than half a century when Hiranand Sahu, grandfather of Fateh Chand (of the house of the Jagat Seths) left his native Nagar in Marwar for Patna in 1652.⁶⁸ We do not know much about his banking business or other commercial activities, but in all probability he would have known the father of the Armenian businessman Khwaja Wajed. Hiranand Sahu’s decision to move to the river port of Patna suggests that the centre of gravity of the Hindustan’s commercial economy was already shifting eastward, a pattern that followed the Mughals’ eastward political expansion. The opportunities to trade would have been greater in the expanding economy of the eastern Ganga plain, and the decision to migrate to Patna would have been a well thought out idea of the ancestor of the Jagat Seths. Again, in all likelihood Sahu followed the trail of Marwari merchants migrating to the eastern Ganga plain to participate in the growing trade.

In 1711, when Hiranand Sahu died at Patna he was survived by seven sons and one daughter who all belonged to the Oswal sub-caste of the Jain sect. For some time, ambitious traders and bankers from Patna had been looking further east, toward the Ganga delta and the coastal towns. Manik Chand, Hiranand Sahu’s eldest son, went to Dhaka in 1703, and when the subadar Murshid Quli Khan moved his capital from Dhaka to Murshidabad, he followed and built his family home there.⁶⁹ By 1711 Fateh Chand, the nephew of Manik Chand, had emerged in EIC documents as an “eminent merchant” who gave short-term loans to the Company’s merchants in Bengal.⁷⁰ Earlier, in the seventeenth century the Mughal emperor Aurangzeb had held Manik Chand in high regard for advancing large loans to the government. In the early eighteenth

⁶⁶ Robert Montgomery Martin, *The history, antiquities, topography, and statistics of eastern India; comprising the districts of Behar, Shahabad, Bhagulpoor, Goruckpoor, Dinajepoor, Puraniya, Rungpoor, Assam in relation to their geology, mineralogy, botany, agriculture, commerce, manufactures, fine arts, population, religion, education, statistics, etc.*, vol. 2, *Bhagulpoor, Goruckpoor, and Dinajepoor* (London, 1838), 29–30.

⁶⁷ Francklin, *Inquiry concerning the site of ancient Palibothra*, 15.

⁶⁸ J. H. Little, “The house of Jagatseth,” *BPP* 20 (1920): 116–17.

⁶⁹ Philip Calkins suggests that from the seventeenth century Maksudabad (renamed Murshidabad by Murshid Quli Khan in 1704) derived its significance more from the European Companies’ trade there rather than from its being a Mughal administrative post. An unpublished paper of Calkins, “The role of Murshidabad as a regional and sub-regional center in Bengal” is cited by Leonard, “The ‘great firm’ theory,” 161. Narayan Chandra Saha, *The Marwari community in eastern India: A historical survey focusing north Bengal* (New Delhi: Decent Books, 2003), 76–77.

⁷⁰ Little, “The house of Jagatseth,” 123; see also J. F. Richards, “Mughal state finance and the premodern world economy,” *CSSH* 23:2 (1981): 287–88.

century, the emperor Farrukhsiyar granted the title of Jagat Seth to Fateh Chand who was appointed “imperial treasurer.”⁷¹ By the 1720s Fateh Chand had secured privileges in coining silver at the imperial mint at Karimabad.⁷² Before the 1750s, none of Bengal merchants rivalled the house of Jagat Seths in economic and political importance.

The success of the Jagat Seths depended on two critical factors. First was their dealing with the Companies as commercial credit providers and second was the state contract to manage the imperial mint and to provide fiscal services and capital to the provincial governor.⁷³ Apart from extending credit to the Companies and zamindars, the Seths also earned substantial profits from remitting money to the imperial treasury and providing other essential banking and financial services.⁷⁴ As Philip Calkins suggests, by the 1730s the powerful banking houses and big zamindars were undermining the authority of the provincial government. Murshid Quli Khan’s policy of encouraging big zamindaris proved detrimental after his demise in 1727.⁷⁵ While the big zamindars increased their resources by means of agrarian expansion, increasing the production of cash crops, and encouraging trade, they did not always share their revenues with the state. Combining their political and financial power, in 1740 the zamindars and Jagat Seths deposed and killed the Nawab Sarfaraz Khan at the battle of Giria and replaced him with the sympathetic army commander Alivardi Khan.⁷⁶ Within a couple of decades a similar combination of bankers, big merchants, and military officers, together with EIC merchants, challenged and overthrew the successor of Alivardi Khan, Nawab Sirajuddaula, at the battle of Plassey. The “Revolutions” of 1740 and 1757 were engineered by interest groups whose economic prosperity depended on the regional economy’s closer connections with maritime trade.

Historians such as Kumkum Chatterjee and Sushil Chaudhury perhaps give too much credit for the success of local merchants to the political (*darbar* or court) backing

⁷¹ Leonard, “The ‘great firm’ theory,” 156.

⁷² For the influence of Fateh Chand at the Karimabad mint, see NA, VOC, Inv. Nr. 8760, From Hugli to Batavia 18.12.1728, “Aan den E: E: Heer Rogier Beerenaerd opperkoopman secunde deser Bengaalse directie en opperhoofd benevens den raad aldaer,” Hollaer and Wildervank from Karimabad, 08.11.1728, p. 25: “en onse dagelijcx gedaene klagten wegens hare onreedelijke en enorme gedoentens door gem: opzienders onder frivole voorgevinge dat zij lieden vermits de E: Comp: geen zilver meer als wel voor dese geschied was aan den wisselaer Fattesjend verkogt en waardoor dies munts werk thans van geen belang zijnde ’s Conings inkomsten uijt dese werkplaats dit jaar grotelijks verminderd waren.” In subsequent years the Dutch continued taking money to the Karimabad mint and did not encounter many problems in getting their silver coined.

⁷³ For the contract to operate the mint and manage the fiscal services of the province see Richards, “Mughal state finance,” 289; for the state contract see Little, “The house of Jagatseth,” 133; it has been established that Fateh Chand did not have monopoly control over the Karimabad mint at Murshidabad; see Om Prakash, “On coinage in Mughal India,” *IESHR* 25:4 (1988): 488–89; for credits to the European Companies by the Jagat Seths, see Chaudhury, *From prosperity to decline*, 68–71.

⁷⁴ Little, “The house of Jagatseth,” 121, 133; Ghulam Hussain Salim, *Riyazu-s-Salatin (a history of Bengal)*, trans. Abdul Salam (1903; repr. Delhi: Idarah-I Adabiyat-I Delli, 1975), 289.

⁷⁵ Philip B. Calkins, “The formation of a regionally oriented ruling group in Bengal, 1700–1740,” *Journal of Asian Studies* 29:4 (1970): 805.

⁷⁶ Sarkar, *History of Bengal*, 2:438–40; also see McLane, *Land and local kingship*, 42.

and protection of the Nawabi regime.⁷⁷ While political support was important for merchants like Wajed and the Jagat Seths, in itself it was not sufficient to ensure their success. To a certain extent political patronage helped them in gaining leverage in the collection of goods or securing monopolies on certain goods. However, to sell their merchandise, the local monopolists were more dependent on the European Companies and other overseas merchants. As the overland routes became relatively less secure and at times positively dangerous to negotiate in the eighteenth century, an increasing share of the overland trade may have moved to the sea-lanes.⁷⁸ Many Asian merchants began utilizing overseas routes for transporting the merchandise of Bihar and Bengal to destinations in southern and western India as well as to the Persian Gulf and Red Sea zones. Since the sea-lane was the sphere of European influence, increasingly so as the Mughals' bargaining powers diminished, neither local traders nor other Asian merchants in Bengal could afford to have an acrimonious relationship with those who ruled the waves.⁷⁹ Nonetheless, the Bengal Nawabs remained committed to a political economy based on the exploitative extraction of land resources. They failed to give a mercantilist orientation to their regime by synthesizing the interests of merchant groups of various ethnicities and nationalities. If the political elites backed some of the merchants it was more for immediate pecuniary gains, *peshkash or nazrana* (gift), or personal friendship, than as a matter of state policy. Asserting themselves in maritime trade was beyond the imagination of the Nawabs even though they commanded resources adequate for executing such a plan.⁸⁰ Therefore, for those merchants, bankers, and zamindars of Bengal benefitting from maritime trade, an alliance with the Europeans would have appeared an economically more reassuring and prudent decision. Eventually such interdependent relations and interests brought to power a regime that had an undoubted reputation for maritime power and its control of the sea-lanes for long-distance trade. As the commercial economy of the hinterlands of Bihar along the Ganga became integrated into the maritime trade during the seventeenth and eighteenth centuries, the river became a theatre of commercial activities.

⁷⁷ Chatterjee, *Merchants, politics and society*, chap. 3; Chaudhury, *From prosperity to decline*, 125–26.

⁷⁸ NA, VOC, Inv. Nr. 8762, From Hugli to Batavia 08.11.1729, Jacob Sadelijen etc. Hugli 8.11.1729, p. 41, for an instance of the insecurity of the road linking Hindustan and Bengal. “als tot Cassembazaer niets zonderl: meer te noteren als dat den dikgem: Nabab in de maand Maart een geld kas van 5000000 Ropijen na 't koninglijke hof gedepecheerd dog deselve om de onveijlheid der wegen in de bovenlanden tot Ragimahol opgehouden heeft.”

⁷⁹ After the blockade of “Moor” ships bound for Surat and Persia, the merchants of Bengal exerted pressure on the government, which lifted the ban on European Companies in the early 1700s. See Chaudhuri, *Trade and commercial organization in Bengal*, 41; for a slightly different version of the incident, see C. R. Wilson, *The early annals of the English in Bengal, being the Bengal public consultations for the first half of the eighteenth century*, 3 vols. (London, 1895), 1:161.

⁸⁰ The claim that Maratha incursions destabilized the economy and put a serious strain on the resources of the Nawab is hardly tenable in view of the withholding of the annual Mughal revenue in the province from 1740. The *chauth* and other exactions of the Marathas were a few lacs of rupees, which the Nawab often raised from coercing the merchants and zamindars. For a view that Maratha incursions did make inroads into the local economy, see Biplab Dasgupta, *European trade and colonial conquest* (London: Anthem, 2005), 225–27.

Section II: Circulation of Cash and the Credit Networks along the River

We already noted that the eastern Ganga plain emerged as a vibrant economic zone and that Mughal integration of the eastern and western deltas led to unprecedented economic growth from around the middle of the seventeenth century. As a result the political, economic, and environmental changes dating from this period, commercial transactions at the river port at Hugli far surpassed those of the *porto grande* (great port) of Chittagong. Hugli began to attract commodities not only from the eastern and western parts of the delta but also from the hinterland of Bihar. While the eastern Ganga plain exported a whole array of goods, the region did not import much and had a favourable trade balance. Thus merchants had to pay for goods exported from eastern India with bullion, and the bars of silver and gold that reached Bengal were minted into Mughal coins and put into circulation. A recent work has calculated the inflow of bullion to the tune of about ten million rupees per annum in Bengal during the pre-1757 years.⁸¹ The influx of precious metals fuelled agrarian expansion and craft production, eased the process of revenue collection, and by the mid-eighteenth century transformed the region's political economy.

Bullion flows into the Ganga plain

In the age of maritime commerce, overseas routes were relatively secure sources of money, which regularly reached the port cities of South Asia. As we have noted, starting in the 1630s the European Companies based in coastal Orissa turned their attention to the productive hinterland. The Ganga offered an easy avenue of communication between the coast and the hinterland. Hence, logistical considerations and the availability of competitively priced merchandise drew the Companies towards Patna. Following in the Dutch footsteps, the English started to participate in the Ganga economy from Hugli and Patna. Asian merchants were already active in the trade at Patna, and the addition of the European Companies simply expanded the demands for the commodities available there. As a result, more money was channelled into agricultural expansion and crafts production, which undoubtedly contributed to the growth of urban centres as the volume of transaction of goods increased into the eighteenth century. Thanks to the commercial traffic on the Ganga and the movement of money and credit along the river, the zone between Patna and the Ganga delta experienced unprecedented economic growth from the seventeenth century.

If early modern Western travellers and commentators believed India and China to be the sinks into which the specie from all over the world was poured, Bengal, including Bihar, may be regarded as one of the deepest sinks on the Indian subcontinent. Bengal received specie from Surat merchants who plied the coastal traffic as well as the European Companies, and money also flowed in through overland routes

⁸¹ Indrajit Ray, *Bengal industries and the British industrial revolution (1757–1857)* (London: Routledge, 2011), 16–24.

which Asian merchants used to transport commodities through the upper Ganga plain until the mid-eighteenth century. Every year, some of the surplus money—amounting to 9–to–10 million rupees (primarily in treasure but also in the bills of exchange)—was taken to Delhi or Agra by the Mughals till 1739.⁸² This clearly indicates the magnitude of money flows through the overland and overseas trade and the surplus-generating capacity of the regional economy. The annual addition 10 million rupees by means of export of commodities and the removal of roughly an equal amount to the Mughal court may appear as a zero sum game. By annual recycling of 10 million rupees and channelling the liquid cash in food and commodity production, the economy of eastern India was generating far more wealth that not only sustained its teeming population and labour force but also allowed surplus to be accumulated by the zamindars and Mughal officials.

VOC sources give some information about money flows in the eastern Ganga plain. In 1741, a letter in the *Generale Missiven* noted an urgent need for 5,995,000 rupees in order to contract business at the various Dutch Bengal factories for that year and the first half of the next as well as for the re-payment of about 1.1 million rupees in loans.⁸³ A later Dutch source of 1755 informs us that the Bengal factory provisionally demanded that the Batavia Council supply fifty chests of bar silver (*50 Thonnen schats aan bhaar silver*) along with commodities such as stave copper, tin, lead, and so on, in order to give them with sufficient purchasing power.⁸⁴

English trade in Bengal began to outpace that of the Dutch in the early 1700s, and the EIC presumably brought in correspondingly more specie. According to a Dutch source, in 1746 the English borrowed 3,000,000 rupees at a monthly interest rate of 0.75 percent, or 9 percent per annum.⁸⁵ In 1740, the VOC had borrowed from the house of Jagat Seth a sum of 909,090 guilders.⁸⁶ The French, Danes, and Portuguese

⁸² It seems that money was dispatched via the overland route twice a year, in March and October which were drier months. The treasure was heavily guarded by the Mughal army, at times 2,000 artillery and cavalry. In March 1729, the treasure consisted of 5,000,000 rupees; see NA, VOC, Inv. Nr. 8762, From Hugli to Batavia 08.11.1729, Jacob Sadelijen etc. Hugli 8.11.1729, p. 41. In October 1729, the Dutch river fleet's captain learnt about the Mughal army camping at Munger and was waiting to receive the Bengal to be escorted through overland route to Delhi, see NA, VOC, Inv. Nr. 8762, From Hugli to Batavia 25.01.1730, "Journaal in form van een dagregister gehouden door den Luitenant Commandant Jacob van der Helling," signed by J.V.D. Helling at Hugli on 10.12.1729, see the entry of 03.10.1729, pp. 50–51. In 1732, 6,900,000 rupees was sent to Delhi in October: "en het fourneren van een considerabel coninglijke cassa van 6900000 ropijen in contant buiten een wissel na Dhillij op weg geslagen is," see NA, VOC, Inv. Nr. 2288, From Hugli to Batavia 5.03.1733, "Brief van den directeur Rogier Beereanaert," p. 52.

⁸³ J. van Goor, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 10, 1737–1743 (Den Haag: Instituut voor Nederlandse Geschiedenis, 2004), 619, Valckenier XIII, 25.03.1741.

⁸⁴ NA, VOC, Inv. Nr. 2862, From Hugli to Batavia 15.12.1754, "Missive van de afgaande en aankomende directeurs," pp. 151, 200.

⁸⁵ Schooneveld-Oosterling, ed., *Generale Missiven*, 11:412, Van Imhoff XX, 31.12.1746.

⁸⁶ NA, VOC, Inv. Nr. 8788, From Hugli to Batavia 20.03.1740, "Staet reecq: der Bengaelse Directie getrocken uijt des ten hoofd Comptoir Houglij..." pp. 529–32, see esp. p. 529.

also participated in the Bengal trade with cash in hand.⁸⁷ There seems to be a regular inflow of specie from Surat to Hugli. Evidence from 1712 shows that in June and July four Surat ships owned by different Muslim merchants arrived at Hugli with about 950,000 rupees, hundreds of bales of cotton, and some other merchandise.⁸⁸ This was the year when emperor Shah Alam died and the ensuing war of succession rendered the overland routes unsafe. In the following decades more ships, silver, and cotton would come from Surat via the coastal routes.⁸⁹ I shall close this discussion after briefly noting the money-flows to Patna and how money impinged on the local economy of the eastern Ganga plain.

Patna Pit

If Bengal was the major bullion sink on the Indian subcontinent, Patna was the deepest part. In 1740 and 1741, for the purchase of opium, saltpeter, and textiles the Dutch Patna factory required a sum of 800,000 and 760,000 rupees respectively.⁹⁰ In the early 1740s, the VOC earned good profits by minting bar silver at Patna. According to a *Memorie van Overgave* (final report) of the outgoing Dutch director of the Hugli factory, Joan Albert Sichterman, the coins minted at Patna bore a premium and could fetch a profit of 18 percent.⁹¹ As money was not always available to the VOC officials at Patna, the Dutch frequently borrowed money at interest and also transacted the bills of exchange drawn at prominent merchants at Patna. The remittance charges, or deductions on the bills of exchange was normally 2 percent but occasionally it reached 3 percent. In the 1730s, the interest rate on loans seems to have fluctuated wildly and at Patna it ranged between 5 to 16 or even 18 percent per annum. In 1738 the interest rate was reported to be at 5 percent per annum at Patna and Kasimbazar. However, in another letter the Hugli factors wrote that the interest rate at Patna had been 1¼ to 1½ percent per month.⁹² Apart from borrowing regularly, the Dutch merchants also lent

⁸⁷ In December 1755 a Portuguese ship, the *Sant Josche[?] Rei de Portugaal*, arrived at Hugli with 72 chests of silver along with 41 “vaten” gunpowder, 200 *man* iron etc. From Hugli to Batavia 15.12.1754, “Missive van de afgaande en aankomende directeurs,” pp. 166, and NA, VOC, Inv. Nr. 2862, From Hugli to Batavia 15.02.1755, “Lijst van de aangekomen inlandse en andere vreemde schepen,” p. 836.

⁸⁸ NA, VOC, Inv. Nr. 1828, From Hugli to Batavia 31.10.1712, “Memorie der aangekomene schepen inde Revier de Ganges...,” pp. 218–20.

⁸⁹ For the shipping list and merchandise imported and exported by the Asian merchants, see NA, VOC, Inv. Nr. 2862, “Lijst van zodanige inlandsche en andere vreemde schepen,” Hougly in’t Fort Gustavus den 16.12.1754, pp. 836–837; and NA, VOC, Inv. Nr. 2862, “Lijst van zodaenige inlandse en andere vreemde schepen,” Hugli, 20.03.1755, pp. 1079–1081.

⁹⁰ Van Goor, ed., *Generale Missiven*, 10: 476, 619, Valckenier IX, 31.03.1740 and Valckenier XIII, 25.03.1741.

⁹¹ NA, VOC, Inv. Nr. 8795, From Hugli to Batavia 14.03.1744, “Memorie ... voor den Heer Jan Huijghens ...door den afgaande directeur der Bengaalse directie den Raad Extraordinair van India Joan Albert Sichterman,” pp. 941–1043, see esp. p. 985: “bij verkoop voor Sicca ropijen van den Pattenasen stempel een aanzienelijke winst van 18 pr cto behaald [werd].” According to the MvO of the outgoing direct Luis Tellefert, the VOC had received the minting rights through a farman from the king Jahandar Shah in February 1712, see NA, VOC, Inv. Nr. 2849, MvO Luis Tallefert to Adriaan Bisdom, 27.10.1755, fo. 177v.

⁹² Van Goor, ed., *Generale Missiven*, 10:144, Valckenier IV, 10.11.1738. The Dutch merchant at Patna wrote, “Wegens het gebrek aan contant geld dient men, net als te Kasimbazar, op krediet of tegen 5%

money at Patna. For example, in 1740 it was reported that a sum of 50,000 rupees was lent at the rate of 3 percent, 100,000 rupees at the rate of 2½ percent, and 130,000 rupees at the rate of 2¼ percent.⁹³ (It is not clear whether these interest rates are monthly or annual.) Since the Company needed money during the season of procurement and also for giving advances to the suppliers well before the procurement season began, normally it lent money on a short-term basis. The interest rate fluctuated depending upon the availability of cash in the market and the prevailing political situation. The higher interest rates charged at Patna compared with towns in the delta suggests the employability of cash for production processes in the expanding Bihar economy.

The large amount of money changing hands invites questions about the elasticity of the economy of eastern India. How were Bihar and Bengal able to meet the expanding demands of commodities purchased by European and Asian merchants? The fact that the economy absorbed such large amounts of money means that commodities worth the same amount or more were being produced. This also means that the agrarian and commercial economies continued to grow for many decades in the seventeenth and eighteenth centuries. This becomes clear when I will examine the matter of agricultural expansion in the eastern Ganga plain in Chapter 7. Here I shall note only that the expansion of trade and commerce engendered some fundamental structural changes in the regional economy over the course of two centuries. The logistical systems that sustained the economic structure would not collapse after the Plassey. So long as the demands for goods continued after 1757, the region continued to produce merchandise for trade.

In spite of the massive flow of money into the Ganga plain, the economy shows hardly any major inflationary trend in the seventeenth and the first half of the eighteenth centuries.⁹⁴ In a normal agricultural year, the prices of essential food grains seem to have remained stable for long periods. Two factors probably stemmed the inflationary trend in the economy. First was the major outflow of about 9 to 10 million rupees annually to the Mughal treasury up until 1739.⁹⁵ From the stray references in the eighteenth century, it appears that a large quantity of coins was taken to Delhi/Agra because the *hundi* (bill of exchange) network between Bengal and Agra no longer functioned efficiently. The imbalance in the distribution of money resulted from the

rente per jaar in te kopen.” However, from Hugli it was reported that “Het is onmogelijk geld á 5% per jaar te lenen; de rente bedraagt 1% per maand, en in Patna zelfs 1 ¼ á 1 ½ %” (p. 146).

⁹³ Van Goor, ed., *Generale Missiven*, 10:475, Valckenier IX, 31.03.1740.

⁹⁴ Prakash, *The Dutch East India Company*, 251–53. While Prakash gives data up to 1714, the price trend of essential comestibles does not show a drastic change even for the period 1730 and 1732, as can be gleaned from Hugli Dag Registers; see NA, VOC, Inv. Nr. 2195, From Hugli to Batavia 10.03.1731, entry of 01.11.1730, p.430 and for the entry of 01.12.1730 see, p. 462; NA, VOC, Inv. Nr. 2288, Houglij's dagregister van den jaare 1732, entry of 01.05. 1732, p. 886, and for the entry of 01.09.1732, see p. 986.

In these references of 1730 and 1732, the price of 68 pounds of *gesmolten boter* (clarified butter) is 10 rupees, 20 *seer* (1 *ceer* equals roughly 2 pond) fine rice cost 1 rupee; 30 *seer* wheat was 1 rupee.

⁹⁵ Ray, *Bengal industries*, 16–24.

fact that specie tended to percolate down river to the eastern Ganga plain because of the region's productive capacity and supply of merchandise. A second explanation, advanced by Richard Eaton, may be the utilization of surplus money for the expansion of agricultural and craft productions.⁹⁶ The availability of arable land and the growing population in the seventeenth and eighteenth centuries would have easily put the available liquid cash to productive use. However, inflation from around the mid-eighteenth century may have resulted from the cessation of tribute payments to the Mughal court after 1739. But this line of reasoning does not help explain the ongoing inflationary trend in the economy in the second half of the eighteenth century when fresh bullion in any appreciable quantities is believed to have ceased to reach the region. Probably the accumulated stock of silver since 1739, and the demands for commercial and agricultural goods pushed the prices up in the Bengal economy. After Plassey, more so since the 1760s, the British did not bring specie and financed their trade with the money from land revenues and to a lesser extent customs duties. The British also spent a large sum for paying to the military regiments, sepoys and on the wars of conquest. These spendings may also have caused inflation. In the following paragraphs, I will discuss the question of increased money use and the circulation of cash and credit to facilitate trade and production in the economy in eastern India.

Mints and Money Circulation along the Ganga

In the fifteenth century, the Lodi Sultans of Delhi had an acute shortage of silver while the flow of silver into Bengal was sufficient to maintain liquidity in the Bengali Sultanate's economy. As John Deyell has shown, between the thirteenth and sixteenth centuries Bengal received silver via overland routes from Burma and Yunnan.⁹⁷ This inflow would have been over and above the silver coming in through oceanic trade. In the present state of scholarship, it is impossible to ascertain the volume of silver reaching Bengal during the pre-Mughal period. Nor can a precise indication be given about the size of the economy in Bengal. What is increasingly obvious is that before the age of maritime commerce, Bengal became more closely linked to an economy centred on the Bay of Bengal but encompassing much of mainland Southeast Asia and Yunnan in south-western China.⁹⁸ In the early modern period, when American silver started reaching South Asia through the Levant and Cape of Good Hope routes as well as from Manila (all augmented by Japanese bullion), the eastern Ganga plain absorbed significant quantities of precious metals. Almost all bullion reaching the Mughal Empire was coined and immediately put into circulation.

⁹⁶ Eaton, *The rise of Islam and the Bengal frontier*, 205–7.

⁹⁷ John Deyell, "The China connection: Problems of silver supply in medieval Bengal," in *Money and the market in India 1100–1700*, ed. Sanjay Subrahmanyam (Delhi: Oxford University Press, 1994), 112–36.

⁹⁸ Bin Yang, "The Bengal connections in Yunnan," *China Report* 48:1–2 (2012): 125–45. In pre-Mughal Bengal silver coins and cowries both were used as money and perhaps they complemented each other; for cowries in wider Asian perspective, see Bin Yang, "The rise and fall of cowrie shells: The Asian story," *Journal of World History* 22:1 (2011): 1–25.

Building on the Sher Shah's lead on coinage, the Mughals had evolved a highly sophisticated monetary system with centrally organized and operated mints. Typically mints served two purposes for the Mughals. Issuing coins bearing the name and reigning year of the emperor buttressed his sovereign authority, while the coins facilitated the economic and commercial functions within the state by making the economy more liquid.

The Mughals had a tri-metallic currency system based on gold (*muhr*), silver (*rupia*) and copper (dam or *paisa*) coins. The muhr, also called *ashrafi*, was a 169-grain coin of almost pure gold and had limited circulation, largely confined to land revenue transfers and big commercial transactions. At times higher denomination money was also used for paying salaries, especially when the price of gold was cheap in comparison to silver. After the ban on the export of silver by the Tokugawa regime, the Dutch substituted the export of gold from Japan to Bengal in the late 1660s and 1670s. A Dutch source of around 1677 informs that the Nawab of Bengal had been paying his soldiers in gold muhrs for a few years and that each gold muhr sold at 15 silver *sicca* rupia.⁹⁹ Except for a few minor exceptions in the reign of Jahangir, the Mughal rupia normally weighed 178 or 180 grains troy and the alloy content was not allowed to exceed four percent. Furthermore, under the Mughal monetary scheme, the newly minted sicca rupee had a premium of a little over five percent on bullion and the coins issued earlier in the regime.¹⁰⁰ This difference in the value of earlier and newly minted coins brought considerable business to shroffs. In northern India for market transactions and commercial dealings generally silver rupia were used.¹⁰¹ In his study of coins and mints, Om Prakash has discussed the functioning of the Mughal mints, their coin output, problems associated with minting, collusion of the shroffs and darogha of the mint, the influence of big bankers such as Fateh Chand and so on.¹⁰² According to Prakash the progressively low seignorage charges at the government

⁹⁹ W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 4, 1675–1685 ('s-Gravenhage: Nijhoff, 1971), 163, Maetsuyker, Van Goens, enz. LXXXI, 13.02.1677: "doordien den nabab zijne zoldaten eenige jaren niet met silvere ropyen, maer met goude mooren, doende ijder 15 ropia heeft betaelt en soo lange dien vorst daarbij continueert, staat het gout vervolgens noch meer en meer te daalen." (For the past few years the Nawab has been making payments to his soldiers not in silver rupees but in gold muhr, which sell for 15 rupees, and as long as the regent continues with this practice, the price of gold is bound to decline even more and more); Prakash, *The Dutch East India Company*, 132. According to Prakash, after the 1670s European silver fed the burgeoning Bengal trade.

¹⁰⁰ Irfan Habib, "A system of trimetallism in the age of the 'price revolution': Effects of the silver influx on the Mughal monetary system," in *The imperial monetary system of Mughal India*, ed. J. F. Richards (Delhi: Oxford University Press, 1987), 139–40. Also see Irfan Habib, "The monetary system and prices," in *The Cambridge economic history of India*, vol. 1, c. 1200–c. 1750, ed. Tapan Raychaudhuri and Irfan Habib (Cambridge: Cambridge University Press, 1982), 360–81, esp. 360–61.

¹⁰¹ Om Prakash, "Foreign merchants and Indian mints in the seventeenth and the early eighteenth century," in *The imperial monetary system of Mughal India*, ed. J. F. Richards (Delhi: Oxford University Press, 1987), 182–88.

¹⁰² Prakash, "On coinage," 475–91; Prakash, "Foreign merchants and Indian mints," 171–92.

mints—from 5 percent in the late sixteenth century to 2½ percent by the eighteenth century—had a favourable effect on monetization and trade.¹⁰³

The copper dam underwent considerable experimentation before emperor Aurangzeb introduced a lighter dam from about 1663–64, probably in an effort to make peasants' land revenue payments easier and to facilitate petty market transactions in an era of growing monetization. Scholars debate the extent to which small denomination coins of copper supplemented the monetary system based on silver and gold coins.¹⁰⁴ Alongside metallic currencies, there were non-metallic monetary media such as cowries and bitter almonds. The vale of these humble monies were quoted in terms of silver rupees. Cowries and bitter almonds facilitated petty transactions in Bengal and Gujarat, respectively. On the eastern Ganga plain at places such as Kasimbazar, cowries were used for purchasing raw silk even though silver rupia dominated the market transactions.¹⁰⁵ Ryuto Shimada suggests that the predominance of cowrie shells as a lower denomination currency in Bengal hindered the prospects of the VOC's trade in Japanese copper for its use as a currency. In the eighteenth century, the price of copper in Bengal remained below that of copper sold on the Coromandel Coast.¹⁰⁶

In spite of the continued existence and circulation of non-metallic currencies, the Mughals always strove for a universal metallic currency regime within their empire.¹⁰⁷ The Mughal commitment to a uniform currency necessitated centrally regulated imperial mints for coining bar silver and recasting foreign coins before allowing them to circulate in the empire. It is not our intention here to enter into the vexed problems of the Mughal monetary history, the “price revolution,” and the level of monetization in South Asia.¹⁰⁸ Focus of my study remains on the eastern Ganga plain and I shall underline the regional economic dynamics by looking at the location of certain principal mints and the circulation of money and credit.

¹⁰³ Prakash, “On coinage,” 481.

¹⁰⁴ Frank Perlin, “Money-use in late pre-colonial India and the international trade in currency media,” in *The imperial monetary system of Mughal India*, ed. J. F. Richards (Delhi: Oxford University Press, 1987), 232–73, esp. 237.

¹⁰⁵ W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 6, 1698–1713 ('s-Gravenhage: Nijhoff, 1976), 79, Van Outhoorn, Van Hoorn, enz. XXIII, 23.11.1699: “Het is niet zeker, of de zijdesoort, ‘mogta’ in Kasimbazar kan worden ingekocht, daar die met de ontbrekende cauris moet worden ingekocht” (It is not certain if the *mogta* variety of silk can be purchased at Kasimbazar, where it should be bought against the cowrie shells that are in shortage. On cowries see also James Heimann, “Small change and ballast: Cowry trade and usage as an example of Indian Ocean economic history,” *South Asia* (N.S.) 3:1 (1980): 49–69.

¹⁰⁶ Ryuto Shimada, *The intra-Asian trade in Japanese copper by the Dutch East India Company during the eighteenth century* (Leiden: Brill, 2006), 122–24.

¹⁰⁷ Sanjay Subrahmanyam, “Introduction,” in *Money and the market in India 1100–1700* (Delhi: Oxford University Press, 1994), 20. In this respect Gujarat remained an exception; well into the seventeenth century, many tributary chiefs continued to mint *mahmudis*, used in the local transactions, while rupia were used primarily for long-distance transactions and revenue remittances.

¹⁰⁸ For a brief survey of this historiographical problem, see Subrahmanyam, “Introduction,” 1–56, esp. pp. 43–54.

The Mughal conquest of the eastern Ganga plain and the region's economic integration into the empire necessitated an efficient system for extracting surplus revenue. This required an expansion of the institutional infrastructure including the establishment of mints. As the administration became more rooted in the region and the economy expanded in the seventeenth century, the state opened new mints and increased the capacity of the existing ones. In the seventeenth century the principal mint was located at Rajmahal, although Patna and Dhaka also appear to have been significant if the types of coins issued there are a reliable guide.

Mints	Akbar, r. 1556–1605	Jahangir, r. 1605–28	Shah Jahan, r. 1628–58	Aurangzeb, r. 1658–1707
Patna	G S C	G S	G S C	G S
Rohtas	—	S	—	—
Hajipur	G	—	—	—
Rajmahal	G S C	S	G S	G S C
Karimabad	—	—	—	S
Murshidabad	—	—	—	G S
Tanda	S C	—	—	—
Dhaka	—	G S	G S	G S
Chittagong	—	—	—	G S

Table 6.1. Coins issued by select Mughal mints, 1556–1707.¹⁰⁹ Note: G = gold, S = silver, C = copper.

That the principal mints such as Patna and Rajmahal were in an area where economic and agricultural expansion was in full swing during the early decades of the Mughal rule is suggestive. Gold and silver coins from the mints of Dhaka from the reign of Jahangir would have been used to pay the Mughal army during the wars with Arakan to the east. As we noted in Chapter 5, during the first half of the seventeenth century it was the western delta and the hinterland of Bihar that emerged as the hubs of trading and commercial activities and attracted the European Companies. The location of the Rajmahal mint at the centre of this economic zone would have met the need for liquidity.¹¹⁰ In the 1690s the Rajmahal mint temporarily shifted to Hugli. According to

¹⁰⁹ M. P. Singh, *Town, market, mint and port in the Mughal empire 1556–1707* (New Delhi: Adam Publishers, 1985), based on appendix A, pp. 239–252.

¹¹⁰ Najaf Haider, “The quantity theory and Mughal monetary history,” *MHJ* 2:2 (1999): 336. On the basis of museum catalogues and treasure hoard specimens it has been suggested that the Rajmahal mint's output showed an unusual spurt in the period 1630–35. According to Haider, this was intended to supply money for the Mughal war effort against the Portuguese (numbering about five or six thousand souls in total) who were driven away from Hugli in 1632 and whose captured wealth was put into the mint for coinage. This line of reasoning may be plausible, although one needs to wonder about the scale of military mobilization against a mere five or six thousand unorganized Portuguese traders, the money dispatched from the Mughal court, and the actual amount of treasure seized from the Portuguese. Perhaps more important for the increase activity at the Rajmahal mint was the commercial expansion already underway in a region that began attracting the European Companies from the 1630s. For the problems associated with the museum and hoard specimen and the currency output, see Subrahmanyam, “Introduction,” 51–3; see also John S. Deyell, “Numismatic methodology in the estimation of Mughal

Om Prakash, this was done in insecure political circumstances following the rebellion of the zamindar Sobha Singh and possibly also because of the Afghan uprising.¹¹¹ When the eastern delta was politically and economically integrated in the Mughal Empire, the principal imperial mint followed. The Karimabad mint at Murshidabad took over Rajmahal's role as the chief imperial mint in the first decade of the eighteenth century.

In terms of the circulation of money and credit and the effects of increased liquidity on the economy one may ask whether river transportation on the Ganga facilitated the circulation of cash and credit in the expanding economy. A discussion about the circulatory networks along the river will throw some light on this question.

Once bullion, foreign coins, and Japanese gold *koban* were imported to Hugli, the European Companies needed to convert it into Mughal coins taking their silver directly to the government mints or to shroffs, who served as intermediaries. As cash was needed to purchase goods and to clear debts, the Companies often had to borrow money from the markets to settle their accounts. Obviously, the Ganga was the most common route through which the money moved from the delta to the hinterland.

In 1652, the VOC purchased goods worth f. 80,000 at Patna, but the record do not mention whether cash or bills of exchange were used for this purchase.¹¹² Evidence from 1667 shows that out of sixty-two *kassjens* (cases) of silver, the Dutch took forty-two to the Rajmahal mint and the rest to Patna to give minting a trial there (*tot een preuve naer Pattena opgesonden*).¹¹³ In 1699 the difficulties in transacting business, high interest rates, and an appreciation in the price of silver at Kasimbazar were attributed to the diversion of more silver to Patna.¹¹⁴ Although throughout the seventeenth century the VOC and other Europeans continued to mint the bulk of their bullion at Rajmahal, significant quantities of silver did reach the Patna mint.¹¹⁵ Following the death of Shah Alam in 1712, the VOC's *vakeel* at Rajmahal, Nanderaam Raaij, cautioned the Dutch officials at Hugli against taking silver to Patna.¹¹⁶ The

currency output," *IESHR* 13:3 (1976): 393–401. For the number of Portuguese at Hugli, see Coolhaas, ed., *Generale Missiven*, 1:293, Specx, Vlack, enz. II, 07.03.1631.

¹¹¹ Prakash, "On coinage," 480; Prakash, "Foreign merchants and Indian mints," 175; for the Afghan rebellion in 1696–97 under the leadership of Rahim Khan, see Wilson, *The early annals of the English in Bengal*, 1:148–49.

¹¹² Coolhaas, ed., *Generale Missiven*, 2:622, Reniers, Maetsuyker, enz. VII, 24.12.1652.

¹¹³ W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 3, 1655–1674 ('s-Gravenhage: Nijhoff, 1968), 548, Maetsuyker, Hartsinck, enz. XXXVI, 25.01.1667.

¹¹⁴ Coolhaas, ed., *Generale Missiven*, vol. 6: 79, Van Outhoorn, Van Hoorn, Pijl, De Haas, Van Riebeeck, enz. XXIII, 23.11.1699: "zilveren munten brachten er meer op dan bij vermutting te Rajmahal, spruytende de hoge prijs van 't silver uyt de behendige, dog periculeuse vervoeringe van 'tselve na Pattena om 't extraordinair hoge opgeld op de wissel te profijten."

¹¹⁵ In 1704 a consignment of silver was being sent to Patna when the authorities at Rajmahal forced the Dutch to use the Rajmahal mint, see Coolhaas, ed., *Generale Missiven*, 6:271, Van Outhoorn, Van Hoorn, enz. XLI, 01.02.1704; see also NA, Hoge Regering Batavia, Inv. Nr. 163, 22.05.1711, pp. 917–25.

¹¹⁶ NA, VOC, Inv. Nr. 8743, From Hugli to Batavia 25.03.1712, "Translaat missive in 't Persiaans aan den E: E: heer Anthonij Huijsman... den 20 Maart 1712 en ontfangen den 24 daar aan," pp. 362–63, and

unsettled political situation along the Ganga continued for some years, and in 1716 it was reported that at Hugli the VOC had 119,688 ducats which should be minted at Kasimbazar because sending this to Patna would be too risky.¹¹⁷ In 1743, the Hugli council sent 268,188 rupees worth of bar silver to Patna to settle accounts there.¹¹⁸ A final report of 1755 mentions Patna among the other mints of Bengal where the Dutch sent gold, silver, and copper for minting.¹¹⁹

Taking bullion to the Patna mint was one of many ways by which the Dutch increased the liquidity of the purchasing market. As we noted above, they frequently resorted to borrowing money, and they also remitted money to be encashed at Patna by means of bills of exchange (*wissel* in Dutch, or *hundi* in Hindi). Patna received money not only from Hugli but also from Agra. In 1677, the Dutch remitted two bills of exchange worth 24,000 rupees from Agra to Patna at an exchange rate of about 3.19 percent. During the same year the VOC factory at Surat ordered their Agra counterpart to use similar methods to remit amounts up to 100,000 rupees to Patna at slightly higher exchange rates.¹²⁰

The bills of exchange for remitting money between Patna and Hugli functioned at much lower rates of between 0.25 percent and 3 percent.¹²¹ In 1731 the Dutch merchants raised 395,000 rupees at Patna from the bills of exchange,¹²² although the rate is not specified. More than a decade later, the Dutch took money at Patna and drew a bill on the chief factory at Hugli at 3 percent. The higher exchange rate in this instance was probably the result of insecurity arising from the Maratha incursions.¹²³

NA, VOC, Inv. Nr. 8743, From Hugli to Batavia 25.03.1712, "Aen de E: Ewout van Dishoek, oppercoopman, secunde der Bengaalse directie," signed by Anthonij Huijsman at Hugli on 23.03.1712, pp. 365–67, see esp. p. 366.

¹¹⁷ W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 7, 1713–1725 ('s-Gravenhage: M. Nijhoff, 1979), 222, Van Swoll, Castelijns, enz. X, 19.02.1716.

¹¹⁸ Schooneveld-Oosterling, ed., *Generale Missiven*, 11:64, Van Imhoff V, 31.12.1743.

¹¹⁹ NA, VOC, Inv. Nr. 2849, MvO Louis Tailleffert to Adriaan Bisdorff, 27.10.1755, fo. 178r.

¹²⁰ Coolhaas, ed., *Generale Missiven*, 4:175, Maetsuyker, Van Goens, enz. LXXXII, 05.07.1677: "Op welke wijze van remitteren, al was 't ook met wat meer verlies, was uyt Zuratta naar Agra ordre gegeven vooreerst met cleene partijtjes tot 100000 ropia toe na voorz. Patna over te mogen maken." Another source of the 1680s mentions the rate of exchange for remitting money from Agra to Patna as 1.275 percent. The exchange rate on transfer from Agra to Surat is quoted at 8 percent; see Khachikian, "The ledger of the merchant Hovhannes Joughayetsi," 174.

¹²¹ In the late seventeenth century the exchange rate at Patna was a quarter of percent, see Coolhaas, ed., *Generale Missiven*, 5:329, Camphuys, Van Outhoorn, enz. XX, 30.12.1689: "Het gerede capitael was in Pattana ook ten eynde geweest en sulx door die residenten een wissel van 25500 ropia met ¼ en ½ per cento verlies na Ougly getrocken." For another reference to half percent exchange rate, see NA, VOC, Inv. Nr. 2153, Houglijns dagregister, entry of 3.03.1730, fo. 8702r; see also Jurrien van Goor, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 9, 1729–1737 ('s-Gravenhage: M. Nijhoff, 1988), 38, Diderik Durven V, 30.11.1729: "Onderwijlen schijnt het trecken van vier wissels tot een montant van 161.000 ropias door die van Pattana tegens een verlies van 1, 1¼ en 2 ten hondert om het gebrek aan penningen tot voortsetting van den zalpeter en lijwaatprocure."

¹²² Van Goor, *Generale Missiven*, 9:380, Dirk van Cloon II, 08.12.1732: "Om in Patna geen tekort aan contanten te krijgen, moet men blijven vasthouden aan betaling met wissels. In 1731 is daar voor 395.000 ropia op wissels gestort."

¹²³ Schooneveld-Oosterling, ed., *Generale Missiven*, 11:64–65, Van Imhoff V, 31.12.1743.

Except for the years around 1760, when the political situation at Patna was very uncertain, during the second half of the eighteenth century exchange rates for remitting money either to Hugli or Patna remained around 2.5 percent.¹²⁴ In general, the sources give an impression that credit and bills of exchange circulated along the Ganga between Hugli and Patna with relative ease.

The volume and velocity of money in the Ganga plain raises some questions. Why was money from different parts of the Indian subcontinent pouring into the eastern Ganga plain? The answer probably has to do with the fact that with its navigable rivers, fertile lands, and growing population, when demand in the international market peaked and money flowed in, the eastern Ganga plain was capable of absorbing large amounts of specie and sustaining a robust economy. Sources furnish information on a voluminous trade not only in established commercial goods but also in rice and sugar.¹²⁵

Conclusion

As the Ganga was a fluvial highroad, not only merchandise but also information related to market and political intelligence moved quickly following its water course. Indigenous and European merchants utilized the logistical facilities and institutions available for intelligence gathering and transmission of news. Evidence from the European Companies' documents shows that *harkaras* (messengers) and *qaseeds* (couriers) were essential parts of their factory establishments.¹²⁶ These informants and couriers gathered and transmitted all sorts of political news and market-related information to their employers. Indeed, these institutions were not a European

¹²⁴ For the weakening of the *hundi* or bills of exchange network from Patna around the early 1760s, see NA, VOC, Inv. Nr. 3075, MvO Taillefert to Vernet, Hugli, 17.11.1763, "De koophandel in 't algemeen," paragraph 19, fo. 1341v, and for the suggestion that instead of taking silver to Patna one should take bills of exchange at the rate of 2.5 to 3 percent, see fo. 1345v; NA, VOC, Inv. Nr. 3284, From Hugli to Batavia 01.03.1770, "In de Residentie Kariemabaadh, ulto Juli Ao: 1769," fos. 344v–353r, see esp. fos. 349v–350r: "op die verklaring of met de vermerking van het zilver, weder een begin hadden laten maaken, terwijl de in voorraad geweest zijnde 50,000 ropijen na de oude wijze gemunt zonder eenige verder hesitatie maar geaccepteerd door de wisselaars meermelt, die den bedienden, hiervoor op hunne factoors in Pattana hadden verleent een wissel tegen [die] de agio van 2¼ per cento." See also, NA, VOC, Inv. Nr. 3473, Memorie van Overgave from the Directeur Johannes Bacheracht to Johannes Mattheus Ross, July 1776, fos. 638v–639r: "Volgens overeenkomst met de Engelschen in het voorleeden jaar als bij resolutie van 26 October 1775 zal het salpeter voortaan op wissels die 's Comp:s bediendens in Patna na den ontfangst voor dies bedraagen op ons verleen en zullen, waardoor veel zorg voor remises derwaarts, veel moeilijkheeden over de specien, en ten minsten 2½ per cento wissel agio uijtgewonnen word."

¹²⁵ For the second half of the seventeenth century, the *Generale Missiven* contain a number of references to the rice and sugar trade from Bengal. Both rice and sugar remained significant trade items into the eighteenth century. For the mid-eighteenth century evidence, see NA, VOC, Inv. Nr. 2862, "Lijst van zodanige inlandsche en andere vreemde schepen," Hougly in't Fort Gustavus den 16.12.1754, pp. 836–837; and NA, VOC, Inv. Nr. 2862, "Lijst van zodaenige inlandse en andere vreemde schepen," Hugli, 20.03.1755, pp. 1079–1081.

¹²⁶ NA, VOC, Inv. Nr. 8776, "Journaal oft dagregister gehouden bij den Luijtenand Jan Geldzak," see the entries of 21, 22, 24, 26, 28.12.1733, pp. 830–31, for instances of sending and receiving letters on daily basis.

innovation and presumably the political elites and local merchants had already been utilizing their services.¹²⁷ Thus, information on the prices of commodities at Agra, Allahabad, Banaras, Patna, Kasimbazar, Hugli and Dhaka—a network of more than 1500 kilometres—circulated among the merchants and such information was always quickly available to those who employed the services of harkaras and qaseeds. Also the chief of the market at Patna and other big merchants had firsthand information on prevailing prices.¹²⁸ In this respect, Niels Steengaard's assumption that Asian merchants operated without any clue about markets and prevailing prices at different towns stands in need of revision.¹²⁹

In the present chapter I argued that merchants, bankers, and zamindars shared a common trade and economic interest with the Europeans Companies, and that this interest stemmed from the commercial impulses coming from the maritime zone. The merchants and bankers became increasingly dependant on the cash-nexus and the regular infusion of liquidity. Indian merchant magnates could hardly do without the European merchants who were among their biggest clients. Neither ship-owning merchants such as Khwaja Wajed nor local merchants sending cargoes overseas could afford an adversarial relationship with the European Companies. The Chand brothers and opium traders such as Meer Afzal needed the Companies as large-scale buyers of goods. It was this convergence of interests of the local merchants and the overseas economy that oriented the eastern Ganga plain towards the sea, away from the classical Mughal political economy based on coercive exploitation of agrarian surpluses.

In 1979, Karen Leonard proposed the influential “great firm” theory of the decline of the Mughal Empire, which suggests that the great bankers redirected their financial services away from the Mughal Empire and toward the regional polities, including the East India Company.¹³⁰ Leonard offers only a partial explanation for why they did so. She probably attaches too much importance to the role of the banking firms in the decline of the Mughal Empire and she glosses over the political-economic processes that engendered such a reorientation in the banking firms' support for the regional polities. Apart from the bankers, and as I hope to have demonstrated the merchants and brokers, of varying standings and scales, Mughal rank-holders and zamindars with an interest in trade (as I discuss in Chapter 7) actively participated in the political economic processes. In the eastern Ganga plain these participants shared a

¹²⁷ For the Julfan commercial network and the sharing of market information through correspondence from the towns and cities in Southeast Asia, Bengal, Gujarat, Persia, West Asia, and the Mediterranean, see Aslanian, *From the Indian Ocean to the Mediterranean*, 118–19.

¹²⁸ NA, VOC, Inv. Nr. 1422, “Instructie voor den Coopman Adriaen van Omme ende den ondercoopman Matheus van Heck gaende gecommiteert om onsent wegen te visiteeren de Comptoiren tot Patna en Sjopra...,” 28.12.1686, fo. 1273v: “aengaende de prijzen konnen uL: onder veel luijden, die daar van kennisse hebben, veel ligt krijgen bij eenen Monnira Cassera zijnde het hoofd van de basaer op Patna, soo mede bij de zalpeter coopluijden Sijaadoesa, Porsottumdas, Deuken Nennen en andere.”

¹²⁹ Niels Steengaard, *Carracks, caravans and companies: The structural crisis in the European-Asian trade in the early 17th century* (Lund: Studentlitteratur, 1973), 30, 58–9 (The same book was issued with the title *The Asian trade revolution of the seventeenth century: The East India companies and the decline of the caravan trade* (Chicago: University of Chicago Press, 1974), 30, 58–9.)

¹³⁰ Leonard, “The ‘great firm’ theory,” 152–55, 159.

common interest in maritime trade and wanted to efficiently exploit the region's infrastructure for trade and profit. Seen from this perspective, the influential groups in eastern India wanted to have a polity that encouraged the voluntary exchange of goods as well as greater transparency in business and market transactions. Thus, the decline of the Mughal or Nawabi dispensation and the rise of the merchant empire of the English East India Company may be better understood in terms of the changes in polity and economy brought about by different forces along the eastern tracks of the Ganga.¹³¹

The Ganga formed in effect the backbone of the Mughal Empire. It was this highway of trade and traffic and the agricultural production and market exchange along its banks that provided the Mughals with the wherewithal in terms of the land revenue to keep their empire running. To lose control over the river was to lose the empire itself. The next chapter examines how and why the Mughal leadership lost control over the river, which now became the bailiwick of the local zamindars decades before another zamindar of a different kind (the British) conquered the eastern Ganga plain.

¹³¹ The term merchant empire is borrowed from James D. Tracy, ed., *The rise of merchant empires: Long distance trade in early modern world, 1300–1750* (Cambridge: Cambridge University Press, 1993).

Chapter 7

Ganga-polity: Mughal Decline, the Zamindars and the Diwani Raj

[T]wo opposites reconciled successfully in Mughal polity, namely the absolute despotic power of the emperor, bolstered by immense centralization and a theory of semi-divine sovereignty; and a structure heavily systematized with such conventions governing the relations between the king and his nobles [emphasis added].¹

Introduction

As we have already seen, the Ganga was a fluvial high road of the Mughal Empire which connected the fertile plains of Hindustan with the maritime zone of the Bay of Bengal. The Mughals' political and economic expansion to the east along the Ganga coincided with the maritime economic boom. The trade of European and Asian merchants brought larger quantities of bullion into the Ganga plain. While the expanding economy benefitted the Mughal state, in the long run it also armed the dissident forces, from mobile warlords to zamindars along the Ganga.² Thus, the river's role in influencing economic and political trajectories is undeniable. During the rise of the Mughal Empire in the sixteenth and seventeenth centuries, the river channelled Mughal control over the zamindars who dominated the fertile agricultural tracts of the plain.³ In the heyday of the empire during the first half of the eighteenth century, the zamindars turned the political tide and began to exact "customs duty" from river traffic, formed their own armed flotillas, and raised militias to challenge Mughal authority. Why did this happen in the eighteenth century?

In the age of maritime commerce the growth of trade meant more income and political power for the state and zamindars alike. So long as the Mughals were able to alienate resources from the zamindars, the imperial system functioned well, but when the state failed to extract surplus resources from the zamindars, the latter grew in power. Trade primed the pump of politics. In particular, the dependence on maritime trade for the fiscal economy was felt acutely by the provincial rulers of Bengal. For example, in 1706 the Bengal governor Murshid Quli Khan requested that imperial

¹ Athar Ali, "Towards a new interpretation of the Mughal empire," in *Mughal India: Studies in polity, ideas, society, and culture*, ed. Irfan Habib (New Delhi: Oxford University Press, 2006), 67.

² Zamindar could mean anyone who collected land revenue for the government from a local official to an autonomous chieftain. On zamindars in Mughal India see S. Nurul Hasan, "The position of the Zamindars in the Mughal empire," *IESHR* 1:4 (1964): 107–19.

³ J. J. L. Gommans, *Mughal warfare: Indian frontiers and high roads to empire, 1500–1700* (London: Routledge, 2002), 27, 103, 164–65.

authorities restore peace with the VOC, which had closed its factories at Kasimbazar and elsewhere two years before. The reason was that his revenues had fallen as the peasants stopped growing cash crops in favor of paddy and pulses.⁴ Like Murshid Quli Khan, the zamindars were no less aware of the income from trade in cash crops within and between their respective zamindaris. VOC officials and zamindars of Bihar signed a number of contracts for the purchase of merchandise and its transportation via river and overland routes controlled by the zamindars, a clear indication that the balance of political power was shifting away from the Mughal state to the zamindar-dominated political economy of the Ganga. It also underscores the fact that zamindars were amassing economic and political powers in smaller polities in a process that has been described as “regional centralization.”⁵ Zamindars formed yet another interest group alongside local traders and Indian merchants whose economic well-being increasingly depended on long-distance maritime trade. Sharing a common interest in overseas trade, in the eighteenth century these groups gradually loosened the Mughals’ grip on the political economy in the eastern tracks of the Ganga.

In the last decades of the twentieth century, historians of South Asia debated the causes of the Mughal decline. Though the debate yielded some very interesting insights and succeeded in veering away from the Mughal-centric, personality-oriented or institution-focused interpretations, yet the causes for the decline of Mughal Empire remained contested. In 1992 Sanjay Subrahmanyam suggested a new approach by looking at the Mughal state as a process, rather than a given structure frozen in time.⁶ If we accept that the formation of the empire was a process, then it follows that its decline was, too. The decline of the Mughal Empire is commonly said to have set in after the death of Aurangzeb in 1707, although cracks in the foundation had appeared long before that. Although the territory of the empire began to shrink in the early eighteenth century, the institutional legacies remained potent and warring groups and regional polities continued to view the Mughals as the paramount power and bestower of legitimacy until the last of the Mughals was forced into exile in 1858 following the Great Rebellion.

⁴ Om Prakash, *The Dutch East India Company and the economy of Bengal, 1630–1720* (Princeton: Princeton University Press, 1985), 25. Prakash has cited Enclosure to H. B. 9.10.1706, K. A. 1622, fos. 63–68. There was a dispute over patrolling the Muslims merchant fleet in western Indian Ocean for which the VOC had signed a *muchalka* (surety). Despite these escorts, the ship of Abdul Ghafur, a leading Muslim merchant of Surat, was hijacked. The Mughals retaliated by putting charges on the VOC and by confiscating its merchandise at Surat. In retaliation, the Company blockaded the Mughal harbor between 1704 and 1706. See G. D. Winus and M. P. M. Vink, *The merchant-warrior pacified: The VOC (the Dutch East India Company) and its changing political economy in India* (Delhi: Oxford University Press, 1991), 92; on the Dutch convoy system, see Ashin Das Gupta, “Gujarati merchants and the Red Sea trade, 1700–1725,” in *The age of partnership: Europeans in Asia before domination*, ed. Blair B. Kling and M. N. Pearson (Honolulu: University of Hawaii Press, 1979), 123–58.

⁵ The term has been borrowed from Catherine B. Asher and Cynthia Talbot, *India before Europe* (New York: Cambridge University Press, 2006), 249.

⁶ Sanjay Subrahmanyam, “The Mughal state—structure or process? Reflections on recent western historiography,” in *IESHR* 29:3 (1992): 291–321; Muzaffar Alam and Sanjay Subrahmanyam, eds., *The Mughal state 1526–1750* (New Delhi: Oxford University Press, 1998), see introduction.

In order to understand the processes leading to the dissolution of the Mughal Empire and transition of the EIC rule from, in essence, trader turned landlord or zamindar, to the dominant power in South Asia, we need a more nuanced appreciation of the transformation of the political economy along the Ganga. There were a number of constitutive props which benefitted by holding the Mughal imperial edifice together, not only the Mughal administrators and officials, but also zamindars, portfolio capitalists, merchants, and financiers who came from a number of ethnic and religious groups. Many of these competing groups were busy nursing their own economic and political ambitions, but they were as dependent upon the empire as the empire was on them.⁷

The Mughals were the chief arbitrators of differences arising amongst the ethnic and religious groups of zamindars and jagirdars.⁸ In the sixteenth and seventeenth centuries, the arbitration and resolution of disputes among these constituencies was one of the empire's essential functions, but in the eighteenth century the so-called successor states to the Mughal Empire appropriated some of these functions for themselves. This was thanks in large part to the greater opportunities to accumulate resources and raise large militias that resulted from regional centralization, a process that reached its acme when the East India Company secured the *diwani* (Mughal taxation rights) and consolidated its authority over the river trade emanating from Calcutta. Thus, following the lead of the Mughal successor states and big zamindars, by the second half of the eighteenth century the EIC emerged as a new diwan and came to be the region's supreme arbitrator, although it still acknowledged Mughal suzerainty. By the early nineteenth century, the Company gradually wrested or won over other regional states and emerged as a paramount power in South Asia.

Why did a European Company succeed in dispossessing regional powers and forming an Indian empire? Rather than repeating arguments put forward by the imperial and nationalist historians, I would suggest that most of the merchant groups in early modern Bengal were foreigners to the land: Armenians, Khattris, Marwaris, Jains, and Gujaratis, no less than the Dutch and English, were in Bihar and Bengal to make money. As we have seen, many of these merchants collaborated with each other. The power relations and emphasis on racial difference that came to colour the Raj in the nineteenth century and later were largely absent from the earlier market relations based on the exchange of goods and specie. Thus, the roots of the EIC's political success can be sought in the accommodations and dependant relationships that the market fostered

⁷ For the dual role of zamindars and jagirdars in stability and unsettling the Mughal Empire in different circumstances, see Satish Chandra, *Parties and politics at the Mughal court 1707–1740* (1959; repr. New Delhi: Oxford University Press, 2003), 3–11. For the mansabdars drawn from various ethnic and racial stocks, factionalism among them and the Mughal emperors' balancing act, see Athar Ali, *The Mughal nobility under Aurangzeb* (London: Asia Publishing House, 1996), 7–37, see esp. pp. 16, 18–19. See also Muzaffar Alam, *The crisis of empire in Mughal north India: Awadh and the Punjab, 1707–48* (Delhi: Oxford University Press, 1986), 10–16.

⁸ J. C. Heesterman, *The inner conflict of tradition: Essays in Indian ritual, kinship and society* (Chicago: University of Chicago Press, 1985), 166–67; see also J. C. Heesterman, "India and the inner conflict of tradition," *Daedalus* 102:1 (1973): 97–113, esp. 103–4. Chandra, *Parties and politics*, 13–14.

in the Age of Commerce. In such a relationship, Indian and foreign merchants and zamindars often shared a common interest deriving from the long-distance oceanic trade, as I hope to demonstrate in this chapter. And the Ganga formed the link not only between the maritime and hinterland zones, but also between the forces that dominated these two spheres.

With the assumption of political power in Bengal the EIC instituted and regularized the laws regarding customs duty, enforcement of contracts for transactions and exchange in the market especially in cities like Calcutta. In theory these regulations were uniformly binding on Asians and Europeans and therefore they brought greater transparency in trade and commercial dealings at the market. The change of regime also brought about some readjustments such as the elimination of the big bankers, merchant magnates and some Mughal rank holders and the proliferation of smaller merchants. The latter group was numerically far more significant and it came to assume new responsibilities, participated in trade, collaborated with the new regime and survived in the changed political circumstances.

Our understanding of the economy of eastern India is broad based and more balanced because we consider agriculture, land reclamation, the crafts and productive activities, demography and labour, and the problems of environment. Keeping these factors in mind one may ask: whether and how did the political transformation affect the economic trajectory of the eastern Ganga plain in the eighteenth century? I shall approach this question by examining the role of zamindars in agricultural expansion and their participation in the money economy. By focusing on zamindars' intensive land management and their assertion against the Mughal rule, I will argue that it was the control over the Ganga, the imperial highway of trade and traffic, by the zamindars located along the river banks that led to the final liquidation of Mughal authority. The control over the Ganga by the British was like using the old foundation stones of the Mughal Empire for rebuilding an improvised imperial edifice.

So far historians have ignored the Ganga and the political economy that the river sustained. This ignorance may partly be explained by the regional approaches that allude only briefly to the maritime economy. Similarly, although maritime historians acknowledge the importance of productive hinterlands to overseas trade, they all but ignore the river that made the region fertile, facilitated the transport of resources from the hinterlands to the sea, and brought back specie and some merchandise. Focussing on the Ganga not only draws our attention to a long-neglected aspect of South Asian historiography, it also rescues us from confusion about eighteenth-century political and economic questions.

The chapter is organized into three sections. The first discusses the formal political landscape of the Mughal Empire, shows the administrative and military arrangements that held the empire together, and sketches the informal political landscape dominated by the local zamindars. Section two discusses the zamindars' growing interest in agricultural expansion and in promoting trade and a money economy in Bihar. It further shows the zamindars' growing control over the Ganga and

overland routes and their defiance of Mughal authority. Section three discusses the political and economic changes in the second half of the eighteenth century, and in particular the EIC's push for agricultural expansion, cash-crop production, and promotion of regional trade even as it sought to dominate the maritime commerce of the region. All these developments unfolded along the banks of the Ganga, which remains to be our focal point.

Section I: The Mughal Empire and the Political Landscape of the Eastern Ganga Plain

Mughal state institutions drew upon the principles of governance from a wide geographical zone encompassing South, West and Central Asia and as a result was characterized by a complex mix of traits found in a variety of centralized, segmentary, and patrimonial-bureaucratic states that depend primarily on land revenue resources.⁹ The administrative features of a range of pre-existing polities were appropriated and improvised upon to create institutions for governing the empire. Abul Fazl, the ideologue of the Akbar's empire, devised plans aimed at providing legitimacy to the Mughal dynasty. He resorted to myths and fables into which he wove strands from works on Mughal dynastic history which he employed to free Mughal imperial institutions from the vestiges of Turko-Mongol tribal kingship and governance.¹⁰ These measures reinforced the loyalty to the Mughal emperor and, in return, the imperial patronage to the ruling elites facilitated the extraction of agrarian resources.

In spite of being a largely agrarian empire, the Mughals took an active interest in the promotion of trade and commerce, in maintaining a complex tri-metallic currency regime, and encouraging financial institutions based on *shroffs* and *hundis* (bills of exchange). It was not a mercantilist state along the lines of those found in western Europe, and it differed from the model afforded by late imperial China, which supported a market economy in an agrarian society but harbored reservations about commercial capitalism, the major exception being its support of monopolies on salt and foreign trade.¹¹

The nature of the Mughal state has excited curiosity ever since François Bernier attempted to describe it in the seventeenth century. That it fits no one paradigm becomes apparent when historians depict the Mughal Empire as an extractive Leviathan

⁹ Muzaffar Alam, "Akhlaq norms and Mughal governance," in *The making of Indo-Persian culture: Indian and French studies*, ed. Muzaffar Alam, Françoise 'Nalini' Delvoye and Marc Gaborieau (New Delhi: Manohar: Centre de Sciences Humaines, 2000), 67–95; Muzaffar Alam, *The languages of political Islam: India 1200-1800* (London: Hurst, 2004), 43–80; see also Raziuddin Aquil, "Salvaging a fractured past: Reflections on norms of governance and Afghan-Rajput relations in North India in the late fifteenth and early sixteenth centuries," *Studies in History* 20:1 (2004): 1–29, see especially pp. 10, 13; Douglas E. Streusand, *The formation of the Mughal Empire* (Delhi: Oxford University Press, 1989), 2–20; Stephen P. Blake, "The patrimonial-bureaucratic empire of the Mughals," *Journal of Asian Studies* 39:1 (1979): 77–94; Subrahmanyam, "The Mughal state—structure or process?," 296–303.

¹⁰ Harbans Mukhia, *The Mughals of India* (Malden: Blackwell, 2004), 45–51.

¹¹ R. Bin Wong, *China transformed: Historical change and the limits of European experience* (Ithaca: Cornell University Press, 2000), 147.

working like a giant pump to suck up all the available agrarian surpluses from the peasantry.¹² First of all, it is unlikely that the Mughals could have taken everything beyond what the peasantry needed to subsist, which would have left nothing for local market transactions.¹³ Second, the administrative mechanisms designed to extract surpluses from the peasantry did not function effectively or uniformly across the empire. While the imperial heartland was probably well-administered for the collection of land revenue, the same cannot be said of the outlying areas of the empire, many pockets of which were controlled by autonomous chieftains.¹⁴ Third, the urban centres and townships could hardly be maintained by serving only the needs of elites and their conspicuous consumption. According to an estimate fifteen percent of the people living in the Mughal Empire lived in towns or semi-urban areas, and this urban population consisted of not only the ruling elites, but also peasant migrant labourers, small traders and shopkeepers, craftsmen and artisans, and mercenaries, all of whom depended on local market transactions for food and other necessities.¹⁵ Apart from the urban consumption, the proliferation of *haats* (weekly fairs), in rural areas allowed the peasants to spend on commodities from the earnings they retained after paying their share of revenue to the state.¹⁶

To properly situate the political transformation in the eighteenth century, the following paragraphs will sketch both the formal political structure of the Mughal

¹² For the claim that about half of the total agricultural produce was taken as the land revenue by the Mughals, see Shireen Moosvi, *The economy of the Mughal empire, c. 1595: A statistical study* (Delhi: Oxford University Press, 1987), 106–18; see also Irfan Habib, “Potentialities of capitalistic development in the economy of Mughal India,” *Journal of Economic History* 29:1 (1969): 32–78, esp. p. 51; Tapan Raychaudhuri, “The state and the economy,” *The Cambridge economic history of India, c. 1250-c. 1750*, ed. Tapan Raychaudhuri and Irfan Habib, vol. 1 (Cambridge: Cambridge University Press, 1982), 172–213, see esp. p. 173.

¹³ On the local markets and exchange networks, see B. R. Grover, “An integrated pattern of commercial life in the rural society of North India during the seventeenth and eighteenth centuries,” in *Money and the market in India 1100–1700*, ed. Sanjay Subrahmanyam (Delhi: Oxford University press, 1994), 219–55.

¹⁴ Ratnalekha Ray, “The Bengal zamindars: Local magnates and the state before the permanent settlement,” *IESHR* 12:3 (1975): 263–92; for northwestern India, see also Chetan Singh, *Region and empire: Punjab in the seventeenth century* (Delhi: Oxford University Press, 1991), 136–53.

¹⁵ Irfan Habib, “Population,” in *The Cambridge economic history of India, c. 1250-c. 1750*, ed. Tapan Raychaudhuri and Irfan Habib, vol. 1 (Cambridge: Cambridge University Press, 1982), see for fifteen percent of urban population in Mughal India pp. 163–171; see also Satish Chandra, *Medieval India: From Sultanat to the Mughals—Mughal Empire (1526–1748)*, pt. 2 (New Delhi: Har-Anand, 2006), 364–65.

¹⁶ An interesting study on the proliferation of rural markets in northern India, see Hiromu Nagashima, “Development of periodic markets in the central part of northern India—especially during the Mughal period—,” in *Markets and marketing in north India*, ed. Hiroshi Ishihara (Nagoya/Japan: Nagoya University, 1991), 135–52; for northern Bihar and its rural trade in the fourteenth and fifteenth centuries, see I. Jha, “Chaudahwin-pandrahwin shatabdi mein Mithila ka vyapar,” *Journal of Bihar the Research Society (JBRS)* 54:1–4 (1968): 382–88 (in Hindi.); Radhakrishna Chaudhary, *Mithilā in the age of Vidyāpati* (Varanasi: Chaukhambha Orientalia, 1976), 196; in general, for the markets in Jaunpur and other parts of northern India in the late sixteenth and early seventeenth centuries, see also Banarasidas, *The Ardhakathanaka: Half a tale; A study in the interrelationship between autobiography and history*, ed. and trans. Mukund Latha (Jaipur: Rajasthan Prakrit Bharati Sansthan, 1981); Banarasidas, *Ardhakathanak: A half story*, tr. From the Braj Bhasha by Rohini Chowdhury, prefaced by Rupert Snell (New Delhi: Penguin Books, 2009).

Empire, which was designed for territorial control and the collection of agricultural surpluses, and the composition of the ruling elites what we might call the informal political structure found in Bihar. In the eighteenth century, the state's capacity to alienate resources from zamindars through a combination of diplomatic maneuvering and periodic demonstrations of force eroded considerably. Even though the zamindars accepted imperial suzerainty in theory, they held the upper hand because their control over production centres and transportation on the Ganga enabled them to amass ever greater resources as we shall see in section two below. In the second half of the century, the EIC became in effect a rival zamindar (with the diwani rights), albeit one with the far more sophisticated bureaucratic skills of a long-distance trading company.

Formal Political Landscape

We have only sketchy information on how Bihar was administratively organized during the reign of Sher Shah and earlier when it formed an appendage to, variously, Bengal, Jaunpur, or Delhi.¹⁷ From Abul Fazl's work we know that towards the end of the sixteenth century Bihar suba was divided into seven sarkars or districts.¹⁸ Owing in part to the existence of the free-minded Ujjainiya Rajputs in the troublesome geographical zone comprising the hills, jungle and rivulets, and partly for the purpose of administrative flexibility, Shah Jahan (1628–58) carved out the sarkar of Bhojpur-Shahabad from Rohtas. As a result Bihar now consisted of eight sarkars, Saran, Champaran, Tirhut, and Hajipur north of the Ganga, Shahabad-Bhojpur, Rohtas, Bihar (also spelled as Behar), and Munger to the south between the river and the northern fringes of the Chotanagpur Plateau. Each of the eight sarkars of the suba of Bihar had imperial officials such as faujdar and amil. The duality of the administrative structure at the provincial level was mirrored at the sarkar level, where the military power of the faujdar was balanced with the fiscal authority of an amil.

Except Tirhut, Champaran and Rohtas, the Ganga formed the boundaries for all other five sarkars.¹⁹ The accessibility to these sarkars through the Ganga facilitated Mughal administrative control in the sixteenth and seventeenth centuries, but in the eighteenth century the zamindars laid claim over the river. Apart from the accessibility

¹⁷ The integration of rural areas of Bihar perhaps remained slow and protracted and these were not much affected by the changes brought about by the Muslim conquests, dynastic upheavals and political crises during the first half of the second millennium AD, see R. R. Diwakar, ed., *Bihar through ages* (Patna: Government of the State of Bihar, 2001), 399–408. For a brief reflection on Sher Shah's administration, see Parmatma Saran, *The provincial government of the Mughals, 1526–1658* (London: Asia Publishing House, 1973), 55–57; see also Aquil, "Salvaging a fractured past," 15, for the lack of sufficient material in the sources that could allow us to believe a sophisticated administrative structure under Sher Shah.

¹⁸ Abu'l-Fazl Allami, *The Ain-i-Akbari*, trans. H. S. Jarrett, second edn. Sir Jadunath Sarkar, vol. 2: *A gazetteer and administrative manual of Akbar's empire and past history of India* (New Delhi: Oriental Books Reprint, 1978), 165–68. The districts were Bihar, Munger, Champaran, Hajipur, Saran, Tirhut, and Rohtas.

¹⁹ Irfan Habib, *An atlas of the Mughal Empire: Political and economic maps with detailed notes, bibliography and index* (Delhi, Oxford University Press, 1982), map 10 B. See also Kumkum Chatterjee, *Merchants, politics and society in early modern India, Bihar: 1733–1820* (Leiden: Brill, 1996), see map on p. 16.



Map 3. The political and economic geography of Bihar in the early modern period. Adapted from Habib's *An atlas of the Mughal empire*.

through the rivers, in the drier parts, to the south of the Ganga, the overland Ganga Route (or the Mughal Trunk Route) gave access to Rohtas, Bhojpur-Shahabad, Bihar and Munger sarkars. While the headquarters of Mughal administrative units were at locations accessible by river or overland routes, the entire territory of a sarkar was by no means within easy reach of the Mughal cavalry. As a result, some remote areas, especially the hills and jungles to the south and the swamps and Terai areas far north of the Ganga, were only loosely integrated into the Mughal administrative framework. We will see this in more detail while discussing the informal political landscape. In the following paragraphs I shall first describe the formal political landscape.

There were a number of administrative functionaries at the sarkar and pargana levels. The officials such as amil or *amalguzar* (collector of the land revenue) were

responsible for the extension of cultivation, measurement and assessment of the cropped farm. Another official known as karori collected the land revenue, maintained records and sent the collected sum to the state treasury. The faujdars, posted at the sarkar level administration were military officers and imperial agents directly appointed by the Mughal emperor.²⁰ A faujdar commanded a cavalry force and was entrusted with overseeing the revenue-paying areas held by the zamindars. He also ensured that zamindars did not augment their power centres or annex the khalisa or lands belonging to other grantees such as *aimadars*.²¹ However, as imperial control diminished in the eighteenth century, provincial governors began to appoint their own trusted men as faujdars.²² As long as the imperial system was enforced with money, logistics, and supplies, the faujdars were able to keep the zamindars in check, but as the system weakened in the early eighteenth century, the faujdars started developing their own fiefdoms by dismissing or co-opting the office of the amils. At the same time, other imperial officials and beneficiaries such as *qazis*, *madad-i-ma'ash* (charitable grant of land) holders and descendants of powerful Mughal rank holders became increasingly rooted in the soil.²³ For all practical purposes they became zamindars and profited from agriculture, cash-crops, crafts, and mineral productions from the land they controlled. If the local level formal political arrangement exhibited fluid situation in the eighteenth century, by and large it was a reflection of what was going on at the provincial level administration.

Provincial administration received particular attention of the Mughals, as the fertile areas of the provinces, such as Bihar and Bengal, formed the resource base of the empire. The placement of the high ranking and powerful imperial officials was aimed at securing the resources of the province for the empire. While the central Mughal administration at the imperial court revolved around the emperor and his select group of faithful high rank holders, the organization of the provincial administration was more elaborate. In the Mughal provincial administrative arrangement, the highest authorities in the suba were the subadar or provincial governor and the diwan, who was

²⁰ Abu'l-Fazl Allami, *The Ain-i Akbari*, vol. 2, 41–42. For the amil as collector of land revenue in the thirteenth century, see Diwakar, ed., *Bihar through ages*, 404. For the karori experiment of Akbar, see Saran, *The provincial government*, 275–77.

²¹ On *aimadars*, see *Return to an order . . . copy of the dispatch from the Governor-General of India in council to the court of directors of the East India Company* (London: House of Commons, 1841), 278. *Aimadars* were granted tracts for land reclamation. For examples from Midnapur in Bengal, see Gouripada Chatterjee, *History of Bagree-Rajya (Garhbeta): With special reference to its anti-British role, from late 18th century till the present times* (Delhi: Mittal, 1987), 158–59.

²² For the favours given to his family members and relatives by the Nawab Aliwardi Khan, see Ġulām Husain Khān Tabātabā'ī, *A translation of the Seir Mutaqherin; or View of modern times*, in 4 vols. (Lahore: Sheikh Mubarak Ali, 1975), 1:280–81, 344–46; 3:180; see also Chatterjee, *Merchants, politics and society*, 34.

²³ For example, towards the end of Jahangir's reign the governor of Bihar, Mirza Rustam Safri, was pensioned off for being old and received an annual sum of 1,20,000 rupees. The eldest son of Safri, Mirza Murad too received an annual pension of 40,000 rupees from Shah Jahan and settled in Patna. These pensioners certainly developed local roots along with those who received land grants. Jahangir and Shah Jahan lavished land grants as *madad-i-ma'ash* and presumably also under other titles such as *inam*, *aima* etc. to many notables and grantees, see Diwakar, ed., *Bihar through ages*, 491–94.

delegated with control of fiscal matters. Dual control was based on the classical Mughal administrative principle of checks and balances of the assigned authority between the two more or less equally powerful officials appointed at the provincial capital. Checks were also exercised by frequent transfers of the officials posted in different parts of the empire. However, at times this imperial rule was leniently applied in the case of some high ranking Mughal officials. In outlying areas imperial officials could remain in their posts for many years and between 1583 and 1599 Sayeed Khan Chagta was allowed to serve alternately as the governor of Bihar and Bengal.²⁴ Over time, imperial officials were allowed to stay longer in their posts and by the early decades of the eighteenth century powerful officials often ignored imperial regulations against this practice.

As imperial rule lost its focus, the Mughal officials also grabbed more power for themselves by securing appointments to two or more offices simultaneously. In particular, governors of Bihar tried to serve as both subadar and diwan. The first governor to make such a bid was Sarbuland Khan (1716–18), but it was Fakhr-ud-Daulah (1728–33) who effectively combined the two offices and began to take decisions without always seeking the sanctions of the Mughal court. This consolidation of power and authority enabled him to deal with rebel zamindars and negotiate new arrangements with them for the payment of land revenue. Fakhr-ud-Daula also attempted to reorganize the jagir administration.²⁵

In the Mughal administrative framework a jagir was an area assigned to an official against his pay and calculated according to his rank, or *mansab*. The responsibility for collecting land revenue from the jagir area was the responsibility of agents of the jagirdar such as amils and gomashtas. In principle, jagirdars were not supposed to come from the area where they held a jagir, on the principle that outsiders would have more difficulty to developing permanent links to the locality where they served. In an exception to the established Mughal norm, many local chiefs and zamindars held jagirs within their zamindari areas. Also many jagir lands were awarded permanently to retired or disabled military commanders or their descendants. In the eighteenth century, the jagirdars needed to forge strong ties with the local community because they could expect little assistance from the weakening imperial centre against

²⁴ For Sayeed Khan, see Diwakar, ed., *Bihar through ages*, 490–91; in other parts of the empire also the officials kept on rotating in a particular zone. It has been suggested that the familiarity and experiences of having served that particular area was a consideration behind their re-appointments, see Singh, *Region and empire*, 33–35; for outlying parts of the empire Richards give example of Mirza Nathan's prolonged service at the eastern frontier of Bengal during the reign of Jahangir, see J. F. Richards, "The Formulation of Imperial Authority under Akbar and Jahangir," in *Power, administration and finance in Mughal India*, in Variorum (Aldershot: Ashgate, 1993), 273; the Nawab of the frontier sarkar Purnia was held for twelve years by Afsandiyar Khan from 1680, see L. S. S. O'Malley, *Bengal district gazetteer: Purnea* (Calcutta: Bengal Secretariat Book Depot, 1911), 35; for the hereditary claim and division of jagir at Shahabad and contiguous areas among the sons of the deceased Nawab Diler Khan Daudzai in 1683 in Hardoi district of Uttar Pradesh, see Muzaffar Husain Khan, *Nāma-i Muzaffarī* (in Urdu), 2 vols. (Lucknow: Maktaba-I Mujaibai, 1917), 1:278, cited by see Hiromu Nagashima, "Development of periodic markets," 143.

²⁵ Qeyamuddin Ahmad, "Bihar in transition," in *Comprehensive history of Bihar*, ed. Syed Hasan Askari and Qeyamuddin Ahmad, vol.2, pt. 2 (Patna: K. P. Jayaswal Research Institute, 1987), 203–7.

zamindars seeking to encroach on their lands. Such new arrangements for the jagirdars was in effect a sort of “scaling down” of imperial power or the central authority.²⁶ Thus, the jagirdars were able to convert the imperial jagir lands into *watan jagirs* (fiefdoms), accumulate resources, and form militias to secure their possession and to further expand them. The subadar of Bihar Fakhr-ud-Daula (r. 1727–33) tried to effect changes in the jagir administration and acquired the entire province on *ijara* (revenue farming) promising to send a stipulated amount to the Mughal court. But this move eventually put him in conflict with former Mughal tax-farmers, jagir-holding officials, and intermediaries, and before any reforms in the jagir-administration could be effected, he was recalled to Delhi. After the reign of Fakhr-ud-Daula in 1733, the suba of Bihar was merged with Bengal and Patna became the headquarters of Bihar government but subject to the Murshidabad darbar.

The Mughals had formerly been well aware of the potential danger of such a merging of two of the eastern Ganga plain’s richest states, and in the seventeenth century they had established the powerful sarkar of Purnia between the subas of Bihar and Bengal. Purnia was located to the north of the Ganga and although it was formally a part of the Bengal suba, it had an independent jurisdiction and was ruled by a faujdar. Usually a faujdar functioned under provincial government, but the Purnia *faujdari* (an areas administered by a faujdar) resembled a sort of small governorship with considerable autonomy.²⁷ Maintaining this wedge kept the resources of two extremely rich provinces from coming under one provincial government and destabilizing the imperial equilibrium. By ignoring the strategic value of an autonomous Purnia, the imperial authorities allowed for the merger of Bihar and Bengal and in effect made the Bengal government the manager of immense resources with the potential to threaten the integrity of the Mughal Empire.

Seen from the perspective of the warrior-entrepreneurs, the political opportunities of the early eighteenth century would not have seemed qualitatively different from the fluid political situation of the first half of the sixteenth century. Unlike in the earlier era though, the subcontinent was much more tightly bound to the maritime economy and the constant infusion of specie further complicated state control and strengthened the informal constituents of the tottering imperial edifice. Hence I examine the cash-nexus and particular interest taken by the zamindars in promoting trade and commerce in section two of the present chapter. In order to give a proper context for such developments, below I shall first discuss the informal political landscape in Bihar which was controlled by zamindars.

²⁶ Muzaffar Alam, “Eastern India in the early eighteenth century ‘crisis’: Some evidence from Bihar,” *IESHR* 28:1 (1991): 50–51.

²⁷ Salim Allah (Munsi), *A narrative of transactions in Bengal: During the soobahdaries of Azeem Us Shan*, trans. F. Gladwin (Calcutta: Stuart and Cooper, 1788), 67–73; Chatterjee, *Merchants, politics and society*, 14. On separate governorship (afzonderlijke landvoogdij) of Purnia, see also NA, VOC, Inv. Nr. 3075, MvO Tallefert to Vernet, Hugli, 17.11.1763, fo. 1389r.

Informal Political Landscape

The imperial administration and appointed officials may have ruled the formal political landscape, but there was also an informal political structure controlled by people attached to the Mughal administration by payments of tribute and vassalage. The most important of these were big zamindars who accepted Mughal suzerainty and paid tribute but who effectively administered their domains without interference from Agra or Delhi. There were many chieftains in Bihar who submitted to the Mughals after Akbar conquered the region. As long as the Mughal state remained powerful and supported imperial officers such as faujdars stationed in different sarkars of the province, the zamindars paid their due. But when the empire's resources began to dry up they increasingly flaunted their independence from the faujdars. In a dynamic that informs much of the first half of the eighteenth century, their enlarged military strength enabled them to ignore and frequently defy Mughal authority and to encroach upon the khalisa lands. An historical-geographic approach to the study of this phenomenon yields further insights into the processes by which the zamindars came to defy the Mughals. Therefore, it is necessary to briefly sketch the locations and geographical specificities of the big zamindaris found to the south and north of the Ganga.

The rugged terrain far south of the Ganga plain was a strategically important zone for state formation during the early modern period. Intersected with jungle and hills, the northern fringes of the Chhota Nagpur Plateau offered safe haven for rebellious chieftains. As we saw in Chapter 2, the hills and jungles of southern Shahabad enabled the Rajputs to use their hardened militia of cavalry and guerilla fighters to frustrate Mughal efforts to subjugate them. As the Mughals consolidated their empire and maintained strong garrison towns along the Ganga, the southern plain of the Ganga remained pacified. In the eighteenth century, the chieftains began to defy Mughal control by securing agricultural resources and claiming "customs duty" on overland and riverine traffic.

In the dry zone south of the Ganga, many chieftains had maintained strongholds in places such as Shahabad-Bhojpur, Gidhaur and Kharagpur in Munger for centuries. At the time Akbar's conquest of Bihar, the Ujjainiya raja controlled Hajipur, but in 1568–69 he was won over by the Mughal governor of Jaunpur.²⁸ The Ujjainiya Rajputs retained their territory and accepted Mughal suzerainty and paid a lump sum as tribute. Yet, they not infrequently rebelled and the Mughals had to enforce their authority by a combination of force and diplomacy, including a matrimonial alliance.²⁹ In general, the

²⁸ L. S. S. O'Malley, *Bihar and Orissa district gazetteers: Monghyr* (Patna: Superintendent, Government Printing, 1926), 36; Kolff has shown that in course of the Mughal campaigns in Bengal when Munim Khan died, his supporter Gajapati "took a sort of leave and went off to his own country." He turned a rebel, and the Ujjainiyas began plundering the towns, disrupted the supplies and imprisoned imperial officials who traveled by boat between Bengal and Hindustan. As the Mughals sought to punish him, remained fugitive in the hills and jungle of southern Bihar and died in 1577. See D. H. A. Kolff, *Naukar, Rajput and sepoy: The ethnohistory of the military labour market in Hindustan, 1450- 1850* (Cambridge: Cambridge University Press, 1990), 165.

²⁹ Kolff, *Naukar, Rajput and sepoy*, 159–69, for the history of the Ujjainiya Rajputs in Bhojpur area and their volatile relations with the Mughals.

Ujjainiyas maintained informal ties to the empire and retained their chieftaincy without much interference from the Mughals. This was the sort of relationship that earlier empire builders such as Sher Shah had maintained with them in order to tap the military labour market in the area. Punctuated with occasional defiance and open rebellions, a tactical alliance existed between the Ujjainiyas and the Mughals during the sixteenth and seventeenth centuries. In the eighteenth century, however, the free-spirited Rajputs asserted their independence more vigorously and fought several battles with the provincial Mughal authorities.

While the Ujjainiyas alternately rebelled and allied with the Mughals, Raja Puran Mal of Gidhaur and Raja Sangram of Kharagpur had accepted Akbar's vassalage.³⁰ Just like Shahabad-Bhojpur, the landscape of Gidhaur and Kharagpur in Munger district consisted of hills, jungles, and fertile valleys to the south of the Ganga. Proximity to the Ganga meant that the region's products could easily reach markets, and the zamindars and warlords could demand protection money on river traffic, while in the event of Mughal attack they could easily withdraw in the hills and jungle. In the eighteenth century, the rajas of these areas rebelled against the provincial Mughal authorities, appropriated agricultural resources and asserted their control over the river traffic on the Ganga.

Important zamindaris such as Tekari and Mayi emerged in the district of Gaya around 1700. Although they originated as humble revenue farmers, through intensive management of land revenue these upstart zamindaris became fairly prominent in the eighteenth century in a dynamic that reflects the changing political economy of the late-seventeenth and eighteenth centuries. These zamindars expanded their land holdings and revenue resources, and were recognized by the Mughal authorities in exchange for which they presumably made themselves vassals of the Mughals. But this was hardly a simple vassal-overlord relationship.³¹

The political dynamic in southern Bihar was not very different from what was happening in other parts of the empire such as Awadh, where zamindars sought legitimacy and recognition from the Mughals even as they increased their resource base by encroaching upon other zamindaris, fortified their bases, and at times rebelled

³⁰ P. W. Murphy, *Final report on the survey and settlement operations in the district of Monghyr (south)* (Ranchi: Bihar and Orissa Secretariat Printing Office, 1914), 9–13, according to this source the descendant of Gidhaur claimed the ancestry of the family going back to the Sultanate period when Vikram Singh had accompanied the Ghurids in their Bengal campaign and had settled in Gidhaur; for a more detailed account of the family and ancestry see O'Malley, *Bihar and Orissa district gazetteers: Monghyr*, 209–10. On Kharagpur raja see Manoshi Mitra, *Agrarian social structure: Continuity and change in Bihar* (New Delhi: Manohar, 1985), 42–45.

³¹ Gyan Prakash, *Bonded histories: Genealogies of labor servitude in colonial India* (Cambridge: Cambridge University Press, 1990), 88–89; the formation of large zamindaris through the recourse to warfare, seizure and patronage by the provincial Mughal government also replicated in Bengal and occurred during the late-seventeenth and mid-eighteenth centuries. It is interesting to note that the Rajput and Pathan zamindaris were always found in the hills and jungle zone, and probably had an access to the military labour market of dry zone. For locations of these zamindaris, see Ray, "The Bengal Zamindars," 273–6; see also John R. McLane, *Land and local kingship in eighteenth-century Bengal* (Cambridge: Cambridge University Press, 1993), 148–9.

against the Mughals. In southern Bihar the zamindaris of Terkari and Mayi followed similar tactics from the early decades of the eighteenth century. They intensified resource mobilization, displaced intermediaries, increased their military strength, conquered adjoining lands, fortified their bases, and sought recognition from the provincial Mughal authorities.³²

While the southern marchlands were hotbeds of rebellion, in the humid zone north of the Ganga, during the formative years of the empire the Mughals succeeded in subduing and forging alliances with several rajas whose families had held their chieftaincies for centuries. After the disintegration of the Oiniwar dynasty of Mithila in northern Bihar during the fourteenth century, several small feudatories had emerged. We know little about these feudatories' relations with the Delhi or Bengal Sultanates before the reign of Akbar. What we know is that in the first half of the sixteenth century Hajipur commanded a fort on the northern bank of the Ganga opposite Patna. Strategically located at the southern tip of the fertile agricultural tract in the humid zone, the Hajipur fort enabled the Turko-Afghan rulers to project their military strength onto the chieftains and myriad landholders of northern Bihar. While the Turkish cavalry would have been successful in subduing the dry and elevated areas along the Bur Gandak, the innumerable rivers, lowlands, swamps, and jungles that formed the *mawās* to the north, east and northeast of Hajipur hindered imperial penetration.³³ The emergence of larger zamindari of Darbhanga during the reign of Akbar and the incorporation of Hathwa and Bettia zamindaris in the Mughal Empire during the seventeenth century may be understood in terms of the constraints posed by this landscape on the Mughal imperial arrangement.³⁴ Leaving northern Bihar to trustworthy and loyal zamindars would have freed the imperial authorities to focus on the more troublesome elements in south Bihar and Bengal, as is obvious from the Mughals' decision to abandon the fort at Hajipur in favor of one south of the Ganga.

The establishment of the Darbhanga and several other zamindaris loyal to the Mughals was one of the notable achievements of Akbar's administrators active in the east. Several traditions relate the foundation of Darbhanga raj by Mahesh Thakur. The family pledged allegiance to the Mughals, managed the zamindari, paid tribute in a lump sum and occasionally rendered military service to help pacify the surrounding region.³⁵ The rulers of the zamindari of Bettia claimed descent from Gangeshwar Deo,

³² For southern Bihar, see Prakash, *Bonded histories*, 87–90; for examples from Awadh, see Alam, *Crisis of empire*, 92–110.

³³ On *mawās* see Heesterman, *The inner conflict of tradition*, 170–73.

³⁴ On Hathwa raj, see Girindra Nath Dutt, "History of the Hutwa Raj," *Journal of the Asiatic Society of Bengal* 73:2 (1904): 178–226; see also G. N. Dutt, *A brief history of Hutwa Raj, with a genealogical table of the Hutwa family* (Calcutta: K. P. Mookerjee, 1909); Chatterjee, *Merchants, politics and society*, 36.

³⁵ For description of the traditions regarding the foundation of the Darbhanga raj, see Jata Shankar Jha, "History of Darbhanga Raj," *JBRS* 48:1 (1962): 14–18; for a close scrutiny of the *farmans* issued to the descendants of Mahesh Thakur and also for the gradual evolution of the Darbhanga estate into a large scale chieftaincy by Aurangzeb's time, see Qeyamuddin Ahmad, "Origin and growth of the Darbhanga Raj (1574–1666), based on some contemporary and unpublished documents," *Indian Historical Records*

who had settled in Saran in 1244 AD. In the seventeenth century, Agar Sen, one of the descendants of Gangeshwar Deo, conquered a large territory in the sarkar of Champaran, styled himself raja, and eventually obtained confirmation of the title from Shah Jahan. In 1659, he was succeeded by raja Guj Singh who built a palace at Bettia. Raja Guj too annexed more territory, but after fighting imperial troops was captured and taken to Delhi. Eventually released and restored to his former position, he committed “to send an annual offering of jungle and other produce”—probably elephants—to Delhi.³⁶ In the eighteenth century his three sons held the zamindari of Bettia, Seohar and Madhubani. As these examples of resistance and accommodation show, rajas and big zamindars dominated the informal political landscape on both sides of the Ganga. Yet, the zamindars to the north were more easily controlled than those to the south, the marchlands, scrub jungle and hills of which gave the chiefs there a pronounced geo-political advantage when it came to bargaining with the Mughals.

In the above paragraphs I discussed the formal and informal political landscapes controlled by the Mughals officials and the zamindars. During the seventeenth century, most of the chieftains had submitted to the Mughals, paid tribute, and rendered services with their militia. In return they enjoyed relative autonomy to govern their realms. This arrangement worked well for most of the seventeenth century, and as beneficiaries of the system, the zamindars helped buttress imperial authority at the local level. This situation changes in the eighteenth century when the zamindars took advantage of the weakening Mughal Empire, began appropriating resources resulting from agriculture and trade and increasingly undermined the formal Mughal political structure. Why they were and how they were able to do this is the subject of the following section, which also throws significant light on the reasons of Mughal decline.

Section II: Cash-nexus, Agricultural Expansion, and the Decline of Mughal Authority

Although still pledging allegiance to the Mughals, in the eighteenth century the zamindars tried to manage their agricultural resources more intensively, encourage trade, and control the river and overland routes. Easy access to maritime trade via the

Commission Proceedings 36:2 (1961): 89–98. for the loyalty of the Darbhanga rajas in the seventeenth century and the expedition of Alivardi Khan in 1733 to recover the revenue, see S. V. Sohoni, “Notes on the revenue history of Darbhanga Raj,” *JBRS* 48:1 (1962): 110–11; for a lump sum tribute of rupees 100,000 in the 1730s and a fresh revision of the total assessed revenue to the tune of 7,69,000 by Nawab Alivardi Khan, see Hetukar Jha, ed., *Mithila in the nineteenth century: Aina-i-Tirhut of Bihari Lal ‘Fitrat’* (Darbhanga: M. K. S. K. Foundation, 2001), 34–5; on rebellion of the zamindars of northern Bihar in the first half of the eighteenth century, see Diwakar, ed., *Bihar through ages*, 502–3; see also Sir Roper Lethbridge, *The golden book of India: A genealogical and biographical dictionary of the ruling princes, chiefs, nobles, and other personages, titled or decorated of the Indian empire* (London: MacMillan, 1893), 107–9.

³⁶ Lethbridge, *The golden book of India*, 67. Although Lethbridge does not specify the jungle produce but judging from the example of contiguous Tauter parganas of “Maccawanny country,” the Goorkally rajas of the area had traditionally paid tribute to the Mughals in elephants, see BL, APAC, IOR, G/28/2A, Patna Factory Records (PFR), 1771, p. 379.

Ganga prompted many zamindars to forge closer links with the merchants who transformed their cash crops and craft-goods into liquid money. Therefore there was an increased emphasis on intensive land management, farming out productive tracts, and squeezing the intermediaries such as *maliks* or village-level tax collectors. As agriculture and trade brought more wealth, the zamindars formed larger militias and employed their newfound power not only for further resource mobilization but also to challenge provincial Mughal authority. This pattern of regional centralization in zamindari areas clearly underlines the waning Mughal power. Moving beyond the cause-and-effect explanations of Mughal decline, I will show how and where in the eastern Ganga plain the Mughal Empire was failing. In view of the political and economic processes, I shall argue that the decline of Mughal authority was brought about by the convergence of interests of the zamindars with those of local and overseas merchants who oriented the economy of Bihar towards the maritime zone.

Land Reclamation and Agricultural Expansion

As we noted in Chapter 2, the Turko-Afghan conquests engendered a new cycle of state formation and a fresh wave of immigration onto the Ganga plain, especially southern Bihar, which received a fairly continuous streams of migrants, settlers, and colonizers. The process was less pronounced north of the Ganga. The drier upland along the banks of the Bur Gandak had been settled by agriculturalists since the age of the Buddha, yet there was scope for agricultural expansion and land reclamation. By means of *pulbandi* (management of the pools) and embankments the lower areas to the east of the Gandak were made fit for agriculture and settlement. In areas closer to the Himalayan Terai, where higher rainfall supported dense tropical rainforest, land reclamation for agriculture required clearing of the forest.

The colonization by new immigrants—at times encouraged by the state—played a role in agricultural expansion. The Mughals generally encouraged the settlement of Afghans in the areas dominated by refractory Rajput or Hindu zamindars.³⁷ The Afghan settlements certainly diluted the zamindars' power, although in the course of time they established their own zamindaris by extending agriculture and attracting trade. As long as the Mughals were powerful the Afghans willingly rendered essential services to the empire. However, as soon as the Mughal authority showed signs of weakness since the end of the seventeenth century, they defied the imperial authority and often colluded with one or the other zamindars.³⁸ The importance of the Muslim settlement in

³⁷ For example see how the Afghans were settled by the Mughals during the reign of Shah Jahan to keep a check on Kateheriya Rajputs in sarkars of Badaun and Sambal in the suba of Delhi, see Iqbal Husain, "Pattern of Afghan Settlements in India in the 17th Century," *Indian History Congress, Proceedings of the Thirty-Ninth Session, 1978* (Aligarh, 1979): 327–36. Husain also mentions the pre-Mughal settlements of Afghans in Jaunpur, Bhojpur and Bihar, see p.334.

³⁸ Aniruddha Ray, "Revolt of Sobha Singh: A case study," *BPP* 88 (1969): 210–21 and "Revolt of Sobha Singh: A case study," *BPP* 89 (1970): 58–73, see esp. pp. 63 - 66 for Afghan Rahim Khan's joining of the rebellion against the Mughals in Bengal. The Afghans of Darbhanga dared to capture Patna in 1748 after the provincial Mughal government disbanded their military corps, see Kalikinkar Datta, *Alivardi and his times* (Calcutta: The World Press, 1963), 103–7. For the tremors caused by the Afghans in

Darbhangā can be deduced from the fact that during the second half of the eighteenth century out of twenty-eight jagirdars and *altamghadars* (holders of revenue-free lands) in the Darbhanga raj twenty-five of them were Muslims, and the majority of them probably Afghans.³⁹ Traditionally the assignment of *altamgha* and jagir required the assignee to expand the cultivated area by bringing wasteland under the plough. This was generally done in one of two ways, *bankatai* (literally, felling of the jungle) and *pulbandi*.⁴⁰ Irfan Habib's atlas shows considerable jungle cover around Bodh Gaya and further south at the end of the sixteenth century. In northern Bihar, along the Terai area jungle cover was substantial during the sixteenth century.⁴¹ The cumulative effects of population growth, need for more food and export commodities and revenue demands by the state pushed the frontiers of agriculture, and it was in the far north and far south of Bihar that enterprising zamindars brought land under the plough, often with some state support. According to an eighteenth century document the *Historical Discourse on the Origins of Zamindari and account of Sarkar Bhojpur*, during the reign of Shah Jahan most of the zamindari originated in bankatai or settling areas after clearing forests. "Those who did so [clear forests] became zamindars and obtained *nankars* [the right to manage] for their lifetime. After the death of such zamindars, their sons obtained *sanads* [charters] for the rights held by them on condition of continued service." Another document, *Haqiqat-i-Suba Bihar*, informs us "From the time of Shah Jahan, it was customary that wood-cutters and plough-men used to accompany his troops, so that forests may be cleared and land cultivated. Plough used to be donated by the government. Short-term *pattas* [documents stating revenue demands] were given, [stating] fixed government [revenue] demand at the rate of 1 *anna* per *bigha* during the first year." The document further notes the official instruction

that after allowing one plough per 20 bighas of well-cultivated land, the other ploughs should be allotted to virgin land or that which had lain fallow for a long time.... Each *hal mir* [i.e. one who has four or five ploughs] should be found out and given a *dastar* [turban, as a mark of state favour and incorporation into the imperial fold] so that he may clear the forests and bring land into cultivation. In this manner, the people and the *ri'aya* [subject] would be attracted by good treatment to come from others regions and *subahs* to bring under cultivation wasteland and land under forests.⁴²

destabilizing the Mughal imperial cohesion since the late seventeenth century, see also, Ali, *The Mughal nobility*, 21.

³⁹ For the jagirdars and altamghadars in the Darbhanga raj, see Sohoni, "Notes on the revenue history," 121–24.

⁴⁰ In the early eighteenth century, the faujdar of Purnia Saif Khan established friendly relations with the zamindar of Morang, got the jungle cleared cultivation extended halfway up to the hilly border of Morang. As a result the revenue increased to eighteenth lakh rupees, see Ahmad, "Bihar in transition," 194.

⁴¹ Habib, *An atlas of the Mughal Empire*, sheet 10B.

⁴² Quotes are from S. Nurul Hasan, "Three studies on Zamindari system," *Medieval India: A miscellany / center for advance study, Department of history, Aligarh Muslim University*, vol. 1 (London: Asia Publishing House, 1969), 233–39; see also Alam, "Eastern India," 65–66. On *nankar* see, *Observations*

The second method of extending cultivated areas—and forming new zamindaris—was through the reclamation of lowlands and marshes. A British report of 1787 discusses how peasants improved dikes, dams, and raised causeways—pulbandi—in Bengal to prevent “either a too copious, or too indiscriminate an inundation.” By controlling floods, peasants could reap the beneficial effect of inundation from the Ganga and other rivers.⁴³ Although the British report sought an efficient management of the embankments by the large contractors functioning under government control, it is obvious that even before the proposed interventions there was a practice of land reclamation in marshy and other low-lying areas. While this report specifically discusses Bengal, such pulbandi were used by peasants in northeastern Bihar as well.

In the absence of historical works sketching migration to and settlement in northern Bihar in the pre-modern period, we know little about how new villages were founded, who initiated and led efforts at jungle clearance or embankment erection, or how cultivation was extended. In the almost famine-free zone of northern Bihar such as Darbhanga, continued population growth must have led to the foundation of new villages and cultivation of converted wastelands.⁴⁴ The pattern of settlement in these low-lying lands was likely the result of population pressure in upland cultivable areas. In 1783 and 1790 the collectors of Tirhut devised plans to attract more cultivators from the neighbouring dominions of the Vazir of Awadh, and by the mid-nineteenth century there was little room for further extension of cultivation.⁴⁵

Apart from migration, colonization, and land reclamation for agricultural expansion, the growth of the land revenue assessment from the sixteenth to the eighteenth centuries also indicates increased agricultural production. Recent research has shown that most parts of Bihar underwent sustained agricultural expansion from the late sixteenth century, and *jama* (assessed land revenue) and *hasil* (the collected land revenue) figures maintained a secular upward trend during the seventeenth and eighteenth centuries. Although it used to be argued that increased jama figures simply

on the law and constitution of India, on the nature of landed tenures, and on the system of revenue and finance, as established by the Moohummudum law and Moghul government; with an inquiry into the revenue and judicial administration, and regulations of police at present existing in Bengal (London, 1825), 55.

⁴³ BL, APAC, IOR, Home Miscellaneous (HM), H/47, “Poolbundy—description of it; by a private hand,” 28th June 1787, pp. 25–35. Inundation was considered as the riches manure in Shahabad in Bihar, see BL, APAC, IOR, Mss. Eur. D 89, Buchanan Hamilton, “An account of the district of Shahabad,” p. 59.

⁴⁴ J. H. Kerr, “Selected para[graphs] concerning survey and settlement operations in Darbhanga district (1896–1903),” in *JBRS* 48:1 (1962): 169, “As a matter of fact, the cultivators of Darbhanga can and do weather more than one season of crop failure. . . . It is common proverb that it takes three bad years to make a famine.” Similarly, in south eastern parts of Muzaffarpur numerous Tal or lakes provided security from famine to the inhabitants of villages around them, see Stevenson-Moore, *Final report on the survey and settlement*, 10.

⁴⁵ Stevenson-Moore, *Final report on the survey and settlement*, 15. Also the genealogical records where the “moola,” or the village from where recent migration took place, normally indicates the movement of Brahman families from north-western parts of Tirhut to south-eastern parts, the later areas have a lower slope towards the northern banks of the Ganga. On “moola” see Ugra Nath Jha, *The genealogies and genealogists of Mithila: A study of the Panji and Panjikars* (Varanasi: Kishor Vidya Niketan, 1980), 65.

reflected inflationary trends in the economy, it is more likely that the rise in jama was the result of expanding agriculture, population, and production.⁴⁶

Between the late sixteenth and around mid-eighteenth century, there was a roughly threefold increase in jama for Bihar. The first such assessment of land revenue—221,919,404 *dams* (copper money, the fortieth part of a rupee)—given by Abul Fazl in his *Ain-i-Akbari* of 1595. By the time Akbar died a decade later, the jama rose to 262,774,167 *dams*, an increase of more than 18 per cent. In 1627, towards the end of Jahangir's reign, the figure stood at 316,033,672, another 20 percent gain. During the reigns of Shah Jahan and Aurangzeb there were further increases and in 1707 the total jama was 407,181,000 *dams*, a net increase of 87 per cent since Jahangir's reign. During the governorship of Alivardi Khan in the mid-eighteenth century, the jama figure reached 545,300,035 *dams*⁴⁷

Sarkar	Number of parganas		Jama in <i>dams</i> ⁴⁸	
	<i>Ain</i> (circa 1595)	18 th century	<i>Ain</i> (circa 1595)	18 th century
Bihar	46	63 (incl. 2 mints)	84,465,490	227,745,905
Munger	31	40	29,622,181	62,374,807
Champaran	3	3	5,513,420	11,375,920
Hajipur	11	11	273,635	51,244,470
Saran	17	18	16,172,304	42,955,045
Tirhut	74	102	1,922,082	44,397,542
Rohtas	18	7	40,879,201	36,044,103
Shahabad ⁴⁹	—	12	—	49,927,091

Table 7.1: Growth in the jama figure of land revenue in Bihar.⁵⁰

⁴⁶ For the jama figure reflecting inflationary trend, see Irfan Habib, "Monetary system and prices," in *The Cambridge economic history of India*, ed. Tapan Raychaudhuri and Irfan Habib, vol. 1 (Cambridge: Cambridge University Press, 1982), 361–81; Aziza Hasan, "The silver currency output of the Mughal empire and prices in India in the 16th and 17th centuries," *IESHR* 6:1 (1969): 85–116; for a criticism of the price rise thesis, see Om Prakash and J. Krishnamurty, "Mughal silver currency: A critique," *IESHR* 7:1 (1970): 139–50; for a lack of any trend reflecting price rise in Bengal, see Prakash, *The Dutch East India Company*, 252–53; the Dutch Hugli diary (*Dag-register*) of the 1730s contains monthly rates of essential consumables such as ghee (clarified butter), mustard oil, rice, pulses, wheat and there seems to be hardly any upward trend, for 1730 see NA, VOC, Inv. Nr. 2195, From Hugli to Batavia 10.03.1731, entry of 01.11.1730, p. 430; see also NA, VOC, Inv. Nr. 2288, "Houglij's dagregister van den jaare 1732," see for entries of the year 1732, pp. 703, 749, 785–87, 793–94, 823, 846, 870–71, 986, 1068. However, the prices appreciated since around the 1740s and continued in the second half of the eighteenth century. Even if we accept that the official jama figure of 1750 may have reflected the inflationary trend, but this again got counter-balanced with the agrarian expansion occurring in the many zamindari areas the revenue figures of which remained outside the state purview. On the last one point for some examples from Bengal, see Ray, "The Bengal Zamindars," 279–82.

⁴⁷ Ahmad Reza Khan, "Revenue statistics of Bihar (1526–1707)," in *Comprehensive history of Bihar*, vol. 2, pt. 2 (Patna: K. P. Jayaswal Research Institute, 1987), 528; Alam, "Eastern India," 61. Irfan Habib, *The agrarian system of Mughal India 1556 – 1707* (New Delhi: Oxford University Press, 2000), 456–457.

⁴⁸ During the reign of Akbar forty *dams* was equivalent to 1 rupee.

⁴⁹ New *sarkar* carved out from Rohtas in the seventeenth century.

⁵⁰ Alam, "Eastern India," 67.

The economic growth of different parganas of Bihar can be appreciated by looking at the change in the jama figures between the end of sixteenth and eighteenth centuries.

The growth in the jama figures of Bihar province reflects the cumulative economic performance of its various sarkars; but not all sarkars performed equally. Muzaffar Alam has analyzed the jama figures for parganas in Bihar sarkar and found that those located near irrigable or navigable channels performed exceedingly well, while access to *mandis* (local markets) gave further incentives to the peasants and zamindars to grow more cash crops.⁵¹ Given the innumerable rivers of northern Bihar, Alam's findings would probably hold good for other sarkars with fertile land and access to the markets. The economic growth and emergence of the urban centres in northern Bihar owed very much to their access to the market.⁵²

According to Ahmad Reza Khan, the factors that led to the rise in revenue assessments and collections included increasing state control over the productive sarkars, growing state demand for land revenue through *ijaradari* (farming out the land revenue), the overall growth of the area under cultivation, changes in cropping patterns, and "a sharp price rise." Muzaffar Alam agrees that imperial penetration and control over southern parts Bihar during the seventeenth century brought more stability to the fertile and rich revenue-bearing tracts along the banks of the Ganga and northern Bihar. Apart from food grain, the cultivation of cash crops such as opium, sugar, and cotton would have accounted for the state's growing demand for revenue.⁵³ In stressing inflationary pressure as being the source for the high revenue figures of the eighteenth century, Reza Khan overlooks other perhaps more important factors such as population growth, internal consumption, and the expansion of long-distance overseas trade, which also contributed to the expansion of Bihar's economy and higher revenue yields.

Although the jama figures are important for reconstructing the growth in the state's revenue demands, we should bear in mind that the jama figures did not include non-assessed villages. For example, during the reign of Aurangzeb, out of a total of 55,376 villages in Bihar, 24,036 were left unmeasured, and the central government had no first hand report on the incomes from these villages. It is also worth noting that except for Bengal; Bihar had the highest percentage of unmeasured villages compared to any province in Hindustan, including Delhi, Agra, Awadh and Allahabad.⁵⁴ That so

⁵¹ Alam, "Eastern India," 67.

⁵² For example the towns which grew in the nineteenth century such as Muzaffarpur, Darbhanga, Khagaria, Rusera, Samastipur, Hajipur, Revelganj, Govindganj, Lalganj and so on, owed to their location on one or the other rivers, as well as their connectivity with the Ganga, see Anand A. Yang, *Bazaar India: Markets, society, and the colonial state in Gangetic Bihar* (1998; repr. New Delhi: Munshiram Manoharlal, 2000), 28.

⁵³ Khan, "Revenue statistics of Bihar," 520–21; Alam, "Eastern India," 65, 67; Prakash, *Bonded histories*, 66–71.

⁵⁴ Habib, *The agrarian system*, 4–5. Out of the total number of villages of Delhi (45,088), Agra (30,180), Awadh (52,691), and Allahabad (47,607) the numbers of unmeasured villages were for 1,576, 2,877, 18,849, and 2,262 respectively for these provinces. Even in the late seventeenth century, Bengal was one

many villages went un-assessed by Mughal officials was a result of concessions made to the zamindars, who settled for payment of a lump sum as annual tribute while enjoying control over the resources of almost half of the Bihar villages. Such informal arrangements contained the seeds of fragmentation that André Wink explained through the concept of *fitna* and argued that such obstreperous tendencies were part of the early modern state-formation process.⁵⁵ Indeed it was the co-sharing of the resources between the Mughals and the subservient ruling class that sustained the imperial edifice. Once this delicate balance shifted in favour of the latter, as it did when the zamindars intensified agricultural expansion, resource mobilization, and appropriation of resources, it became impossible to hold the empire together. As I shall discuss below, when the demands for the commodities of Bihar peaked in the eighteenth century, the zamindars facilitated trade of the European Companies and signed numerous contracts and accumulated resources at the expense of the Mughal Empire.

The Zamindars, the Money Economy, and the Treaties with the VOC

Although evidence of the zamindars' participation in trade is relatively scarce, the sources do throw some light on their interest in promoting trade in their territory. Commerce stirred the local economy by encouraging production of commercial goods, and zamindars could also collect money from craftsmen and traders in the form of taxes and duties. As the eastern Ganga plain got more closely integrated with the maritime economy in the eighteenth century, the demands for agricultural cash crops and minerals expanded on an unprecedented scale, and with it the zamindars' interest in promoting trade. It is in this context that I shall examine their interactions with the European Companies.

VOC officials maintained friendly contacts with the zamindars along the Ganga to ensure security for the goods and men of the Patna fleet. As important was the need to secure contracts to trade in and transport commodities through the zamindars' fiefdoms, for which the Dutch officials signed contracts and paid an annual sum of few hundred rupees along with some presents in kind. The Dutch also kept local Mughal officials and customs officials in good humour and exchanged gifts with them. Such presents were necessary because the imperial farman prohibiting *rahdari* (road taxes) carried little force with local officials and zamindars. By means of gifts the Dutch cultivated a close relationship with the zamindars and encountered relatively few hindrances in conduct of trade.

While the exchange of gifts facilitated business, in the fluid political scenario of the eighteenth century, gifts alone could not guarantee security, and the VOC began to

of the least measured provinces of the empire and only 1.5 percent of the total 112,788 villages were measured, see Ray, "The Bengal Zamindars," 267.

⁵⁵ André Wink, *Land and sovereignty in India: Agrarian society and politics and the eighteenth-century Maratha Svarajya* (Cambridge: Cambridge University Press, 1986), 21-34, where he uses the concept *fitna* used in the sense of sedition.

employ militia on the vessels of the Patna fleet in the early eighteenth century.⁵⁶ Armed guards could thwart an attack, but procuring commodities still required a zamindar's goodwill. One risk was that a zamindar would play rival Europeans off one another to increase the competition, and thus the price received, for his goods. Therefore, friendships and diplomatic alliances were carefully cultivated.

Several zamindars and local Mughal officials welcomed the Dutch Patna fleet with chickens, victuals, and refreshments and drinks, and the Dutch reciprocated by sending spices, looking glasses, red velvet sheets, Japanese *nesjes doosjes* (nests of small boxes) and so on. The Dutch source mentions a zamindar called Raja Makam Singh at Gangaprasaad, close to Bhagalpur, who sent some chickens and refreshments to Jan Geldzak, the captain of the Dutch Patna fleet in 1733, and reminded him of the previous year's promised gifts. The captain immediately sent five pounds of cloves, five pounds of nutmeg, four pounds of cinnamon, twenty-four pounds of pepper, ten ells of red velvet, and seventeen ells of red *laken* (woollen cloth), one Japanese *schrijflaadje* (small writing box) and one looking glass.⁵⁷ The size of a gift often reflected the power and hierarchy in which a zamindar or an official was placed. When the fleet reached Bhagalpur, the *naib* (deputy), Makand Rai, greeted the captain with chickens and refreshments, and Geldzak promptly sent him goods and spices like those he had given Raja Makam Singh, though in lesser quantities. Another Mughal official at Bhagalpur, Sawadalichan [Saiyid Ali Khan?] sent the usual gifts of chickens and refreshments to Geldzak, and the captain thanked him with 6 pounds of cloves, 6 pounds of nutmeg, 4 ½ pounds of cinnamon, and 36 pounds of pepper along with 21 ells of red velvet, 17 ells of red *laken*, a small mirror and a Japanese betel box.⁵⁸ Saiyid Ali Khan seems to have been the highest-ranking of the three people Geldzak encountered in and around Bhagalpur on this trip.

When the fleet reached Munger, the captain was received by the servants of Ragia Mahmeth Artsier (or Raja Muhammad Arjast of Kharagpur), who sent victuals and refreshments. Geldzak tipped the raja's servants ten rupees and asked them to convey his thanks and inform the raja that "the Honourable Company had decided to enter again into the earlier friendship and the chief of Patna will inform him of the

⁵⁶ Numerous chieftains began collecting tolls on the boats passing through the Ganga since the first decade of the eighteenth century, see NA, VOC, Inv. Nr. 8739, From Hugli to Batavia 09.04.1709, "Reekeningh van alle sodanige penningen als door den derroga Ramsjent ten overstaan van den ondercoopman Willem Selkaart zijn uijtgeschooten soo tot largatie van s E: Comp:s goederen gelaaden in 22: Pattellaes van derriapoer [Dariyapur] tot Amchandeha als 't geene door den Roofgierigen Ragia Tabertsingh en andere met geweld van de selve is genomen," pp. 278–81; the Patna fleet of the Dutch carried several hundred militia as escort since 1713 onwards, see NA, VOC, Inv. Nr. 8744, "Ruijge staat reek: der Bengaalse directie, getrocken uijt de negotie boeken gehouden ten hooft Comptoire Houglij onder dato ulto: Januarij 1713," pp. 367–384 see esp. p. 375.

⁵⁷ NA, VOC, Inv. Nr. 8776, "Journaal oft dagregister gehouden bij den Luitenant Jan Geldzak," entry of 10.10.1733, p. 810.

⁵⁸ NA, VOC, Inv. Nr. 8776, "Journaal oft dagregister gehouden bij den Luitenant Jan Geldzak," for the entry on 15.10.1733, see p. 812.

agreed contract.”⁵⁹ We do not know the specifics of the VOC’s earlier arrangement with the raja of Kharagpur. A reference of 1728 informs that the Kharagpur raja provided a lodge or warehouse to facilitate the VOC’s opium trade,⁶⁰ although at the present we do not have a copy of a contract between the Kharagpur raja and the VOC. We do have a copy of the treaty signed in the year 1734 between the Hieracha Sjekwaer [Heera Shah Chakwar?] and the head of at the VOC’s Patna factory, Nicolaes de Munt. Heera Shah was the raja of Milki pargana in Hajipur sarkar.⁶¹ The raja issued a contract for the free trade and safe passage of Company boats, with or without militia, through his lands in exchange for an annual payment of four hundred rupees. Apart from this paltry sum, the Dutch were obliged to send some of the same gifts that the raja’s forefathers had received. The contract also specified that the Dutch gomashas could operate freely in the raja’s territory. As the letter reads “let all help and facilities to be provided to their [Dutch] gomashas who are already trading in my area and also to those who will come to trade, to collect goods and afterwards to carry those goods out of my region.”⁶² The raja appears to have been an important conduit of the cash-nexus that characterized the economy of Bihar and of the eastern Ganga plain.

Curiously, the contract includes no mention of Mughal provincial or central authority, which suggests that the raja operated entirely on his own in signing contract with foreign entities like the VOC. (It is also difficult to know whether the zamindar considered the VOC a “foreign” body or just another one of the merchant groups trading in Bihar commodities.) Clearly, like other zamindars this raja was drifting out of the orbit of the Mughal political economy, and foreign trade was an increasingly important mainstay of the economy in Bihar. It is apparent from the contract letters that the VOC’s friendship with zamindars had a strong material basis, aimed primarily at facilitating the Company’s trade. As the Milki raja’s forefathers are mentioned in the letter of contract, we may infer that such trade contracts had some precedent going back

⁵⁹ NA, VOC, Inv. Nr. 8776, “Journaal oft dagregister gehouden bij den Luijtenand Jan Geldzak,” entry of 19.10.1733, p. 813: “de wijle d’ E Comp:s weederom met hem in vorige vrundschap was getreden het Pattenaes opperhoofd hem ontwijffelbaar van het geslotene contract soude laeten goudeeren.” More than two decades later, in 1758, the raja of Kharagpur was still receiving the annual protection money on saltpeter boats passing on the Ganga. The Dutch had decided to stop such payment to the chiefs and regents because the acquisition of monopoly on saltpeter by the English adversely affected the VOC trade, see NA, VOC, Inv. Nr. 2920, Letter from Patna, signed on 17.03.1758 and received at Hugli 29.03.1758, fos. 1214v–1215r.

⁶⁰ W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-Generaal in Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 8 (’s-Gravenhage: Martinus Nijhoff, 1985), 163, De Haan, Huysman enz., 31.01.1728.

⁶¹ Reza Khan identifies pargana Maki (with a question mark), which might well have been the Milki of the Dutch sources. Although the jama figure of this pargana is not given in *Ain-i-Akbari* (from which we may infer it to be under control of some autonomous raja) but in the eighteenth century the figure stood at 4,123,768 dam. Similarly, for Kharagpur also the jama figure is missing in the *Ain-i-Akbari* while in the eighteenth century it was 4,400,000 dam. See Khan, “Revenue statistics of Bihar,” 537, 540.

⁶² NA, VOC, Inv. Nr. 8776, From Hugli to Bavatia 25.03.1734, “Translaat Persiaans concept verland [verband?] schrift aan te gaan met het tegenwoordige hoofd der Sjekwaards Ragia hieracha [Heera Shah] tot een vrijen handel in, en een secure passagie voorbij zijne landen van ’s Comp: op en afgaande vaartuijgen,” pp. 844–45.

probably to the late seventeenth century. The rajas needed to encourage trade in their territory in order to export the commodities produced in their domains, and the raja- and zamindar-controlled economy became more oriented towards maritime trade.⁶³ As more goods moved down the Ganga and bullion flowed upstream to the territories of zamindars, a new political configuration was unfolding on the Ganga plain.

Waning Mughal Control over the Ganga

The assertion of the zamindars of Bihar against the provincial Mughal authorities has been discussed in the standard literature, and we are familiar with the basic *modus operandi* of rebellions in which the zamindars sought to enlarge their domains and resource base even as they legitimized their gains by acknowledging Mughal suzerainty.⁶⁴ Rather than repeating the story of land aggrandizement by zamindars and their resource generation by an intensive land management through revenue farming, the present section focuses on their control over the main artery of the Mughal Empire: the Ganga.

The decline of Mughal imperial control from the early eighteenth century was more pronounced along the fluvial highroad of the Ganga than in the Mughal heartland of Hindustan. As we noted above, this was because the region was only loosely integrated into the formal Mughal imperial structure and the zamindars retained a high degree of autonomy even after they formally submitted to the Mughals. With the relaxing of Mughal control, a host of zamindars along the river began demanding protection money from merchants. In Munger, one “Baboe Sjettersaal” (Babu Chatrasal), who commanded about four thousand cavalry and four thousand artillery (*heeft hij vier duijsent soo ruijters als roerschutters*), extorted 250 rupees from each of 22 boats carrying VOC merchandise to Hugli—a total of 5,500 rupees.⁶⁵ The ability to appropriate such sums from boats on the Ganga enabled the zamindars to raise sizeable military forces. Because the provincial authorities were unable to enforce the law along the Ganga, merchants were left to fend for themselves. Although Mughal officials occasionally chastised some of the zamindars, their power was never crushed and they were soon back in the business of collecting protection money. Moreover, even if a Mughal faujdar succeeded in removing a zamindar from a customs post, the faujdar as

⁶³ There is an evidence of a similar trade contract between the zamindar of Bettia and the VOC in 1713, and possibly earlier. The Dutch merchants at Patna factory were instructed by the Hugli Council to pay 524 rupees as presents to the zamindar of Bettia, see NA, VOC, Inv. Nr. 8744, From Hugli to Batavia 6.03.1713, “Instructie of memorie na de welke ’s geligeerd Pattenase opperhoofd den onderkoopman Jacob Dijkhov,” p. 342. Again in 1758, the Dutch mentions their contract with the Bettia’s raja for the procurement of saltpeter of his territory, and complains about the naib subadar Ramnarain’s intervention for procuring entire produce for the English, see NA, VOC, Inv. Nr. 2920, “Aan den Edele Achtbare Heere Adriaan Bisdom Directeur en oppergebieder,” Letter from Patna signed on 15.06.1758 and received at Hugli on 26.06.1758, fos. 1223v–1224r and for another letter from Patna signed on 28.09.1758 and received at Hugli on 11.10.1758, fos. 1244v–1245r.

⁶⁴ Prakash, *Bonded histories*, 82–98; Alam, “Eastern India,” 43–71. For a similar process in Bengal see Ray, “The Bengal zamindars,” 271–82; see also McLane, *Land and local kingship*, 161–70.

⁶⁵ NA, VOC, Inv. Nr. 8739, From Hugli to Batavia 09.04.1709, “Rekeningh van alle sodanige penningen als door den derroga Ramsjent,” pp. 278–81.

likely as not would begin extorting tolls from the merchants for himself.⁶⁶ In the eighteenth century, the Mughals were preoccupied with containing the big zamindars such as Ujjainiya, Tekari, Mayi, Bettia and Tirhut.⁶⁷ However, except for the raja of Kharagpur, most of the chiefs and zamindars asserting themselves on the Ganga appear to be relatively small and upcoming zamindars, and they were widely dispersed through Munger, Bhagalpur, Purnia and Rajmahal.

Cracks in the imperial façade were visible as early as the rebellion of the Bengal zamindar Sobha Singh in 1695–97. When his forces seized the fort at Hugli, the subadar Ibrahim Khan asked the Europeans to arrange for their own protection. This gave the English an opportunity to expedite the fortification of their settlement at Calcutta. The Dutch were somewhat indecisive about having a strong fortified enclave there and it was not until the threat of Maratha incursions in the 1730s loomed large that they decided to construct Fort Gustavus.⁶⁸

Although the European enclaves in Calcutta were protected by fortifications and heavy guns, assuring the safety of their Patna fleets proved more of a problem. Mughal authorities could provide little relief from the growing number of zamindars demanding tolls and protection money. In the wake of a host of zamindars claiming tolls and protection money, and the provincial Mughal authority providing little relief against them, the VOC depended on diplomacy and gift exchange, entering into treaties with them, and, as we have seen, restored to manning their boats with several hundred militia, as did the English.⁶⁹ The eighteenth-century practice of carrying well-armed militia (the overwhelming majority of them Europeans) almost as far as Patna contrasts sharply with the situation in the seventeenth century, when the state appears to have ensured security on the route and there was no need for private militia. Furthermore, in a strong, centralized empire, private diplomatic and trade alliances between zamindars and the foreign trading company would have posed an intolerable threat to Mughal authority. Seen from this perspective, the Mughal Empire of the late-seventeenth and eighteenth century can hardly be characterized as a centralized polity, at least in so far as the empire in Bihar and Bengal is concerned.

The Mughals' administrative ineffectiveness hardly improved in the decades of the early eighteenth century and the situation along the banks of the Ganga became

⁶⁶ W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 7 ('s-Gravenhage: Martinus Nijhoff, 1979), 646, Zwaardcroon, De Hann enz., 19.01.1723. It has been reported that after driving away the raja of Chanda, the faujdar of Bhagalpur insisted that the VOC had to pay protection money. The Dutch ruefully noted that the English protected their fleet by employing militia, and the faujdar hardly dared to claim any money from them.

⁶⁷ Alam, "Eastern India," 55–60; Prakash, *Bonded histories*, 82–98.

⁶⁸ Om Prakash, "The Sobha Singh revolt: Dutch policy and response," *BPP* 94:1 (1975): 32–4.

⁶⁹ Coolhaas, ed., *Generale Missiven*, vol. 7:72, Van Swoll, Douglas enz. III, 26.02.1714: "De Engelse laten in dese directie hunne vaartuygen en daeronder ook eenige van andere handelaers nogal met Europeesche militairen na Pattena en weder terug convoyeren," (Trans: In this region the English make use of European soldiers for the escort of their boats, some of which belong to other [indigenous] merchants, to Patna and back to Hugli.)

even more troublesome. It was this fluid political situation that forced the Europeans to fend for the security of their merchandise boats on the Ganga.

The practice of sending military escorts with the Dutch fleet appears to have become fairly regular since the late 1720s. All the European Companies hesitated taking the armed guards all the way to Patna for fear of displeasing Mughal officials there, and the private soldiers were normally lodged at Fatuha, a few miles below Patna, or in some instances at Singia or Nawada. In 1730, the letter of instruction issued to the Dutch captain ordered him to leave the military at the Company's lodges at Chhapra, Singia, Fatuha or Nawada. Further, the instructions pointed that taking military to the city of Patna had to be avoided because it would not only raise evil pretensions (*quaad nadenken in de regenten verwerken*) among the authorities there, but also that the soldiers might have quarrels with the city's cavalry-men as well as other wanton hooligans (*baldadig gespuis*).⁷⁰

The *instructie* for the Patna fleet captain in 1730 refers to zamindars as thieves and robbers (*dieve- en roverijen*) who controlled the customs posts and collected protection money. One such robber zamindar was Bier Sawh (the Dutch spelt Biersja) of Teyndpour, between Bhagalpur and Chanda. According to our source, on account of the activities of Biersja and his adherents, this place had become a robber's nest (*roofnest*) and was a great hurdle for company boats proceeding either to or from Patna. Following the death of Biersja and the ouster of his son Doekhernzig (Dukh Haran Singh?) some years ago, the emperor gave this place to a Mughal rank-holder as a jagir. Even so, the Company had no peace because in 1724, Seijtchan (Seif Khan), the powerful faujdar of Purnia, demanded 1,664 rupees for the free passage of boats.⁷¹ Clearly, there was by this time little difference between robbers and Mughal officials when it came to making money from merchants on the Ganga.

Another chieftain whose men extorted protection money from merchants and controlled the passage up the Ganga was Bagtoussersing at Pepria, west of Surajgarha and Samboa. He was said to have a force of 2,000 horsemen and 2,500 artillery and they controlled the area up to Samboa. Around 1710 the chief merchant at Patna, Jacob van Hoorn, had entered into a contract with the raja or his predecessor for the free passage of the Dutch fleet in exchange for an annual payment of 850 rupees and other gifts. Nonetheless, a few years later, the overseer of the Dutch fleet was extorted and mistreated, although he fared better than many indigenous merchants. In order to chastise him, the provincial government at Patna and the English Company sent troops

⁷⁰ NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, "Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen," p. 1074; see also Coolhaas, ed., *Generale Missiven*, vol. 7:667, Zwaardecroon, De Haan enz., 03.12.1723: "het zenden van militairen tot het afhalen der vaartuigen uit Patna veroorzaakte geen moeilijkheden, maar mag niet herhaald worden." Also, there is mention of payments of protection money made to the head of Chakwars and Ragia Roosafschoen of Kharagpur.

⁷¹ NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, "Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen," pp. 1060–61. On Seif Khan and his chastisement of the son of Birnagar zamindar Bier Sawh, see Salim Allah (Munsi), *A narrative of transactions in Bengal*, 68.

who drove him into the mountains, where he became embroiled in internecine alliances and feuds with other local zamindars. The Dutch were unclear about the actual jurisdictions of these feuding zamindars and the *instructie* asked the fleet captain to get additional information on the state of affairs in the district.⁷²

The detailed accounts of such hide-and-seek games between Mughal provincial authorities and zamindars found in Dutch sources can run to several pages and reveal patterns in the way zamindars operated. Zamindars living near where the river, mountains, and jungle were in close proximity were most likely to assert themselves against river traders, withhold revenue from the state, raise militias, and fight other zamindars and the Mughal state. The river brought them riches while the mountains and jungle provided them with safe havens against their enemies. Although the zamindars took protection money or “customs duties” from the merchants, they never entirely disrupted or prohibited trade, which was an important source of income. The examples of Dutch contracts with the Bettia zamindar for saltpeter procurement or with the Hajipur zamindar for general trade clearly demonstrate how entrenched in the local economy the cash-nexus was.

As we noted above, compared with the English efforts to fortify Calcutta the Dutch were relatively lethargic about constructing Fort Gustavus. As a trading entity in Bengal, the VOC benefited from the relatively strong Mughal state in the seventeenth century. The emergence of the zamindars, and their control over river traffic hurt the Dutch in more or less the same way as it did to other merchants. But far from harbouring any colonial ambitions to form an empire in eastern India, the VOC remained faithful to the existing Mughal political system for the conduct of trade. In a way it became as much a victim of the destabilizing effects of obstreperous zamindars’ political assertion and the Maratha raids as the Mughals. The private trade of the Dutch merchants hardly favoured the VOC’s commercial and diplomatic interests in the way that British private traders benefited the EIC. Dutch private merchants forged closer contacts and even partnerships with the English and other Europeans who undercut the VOC’s profits in Bengal. The desperate and rather haphazardly organized challenge to unseat the EIC from a politically commanding position in the battle of Bedara in 1759 hardly helped the VOC cause in Bengal.⁷³ In the second half of the eighteenth century, the VOC depended on the EIC’s favour and the English put a cap on the goods such as saltpeter and opium and gradually tightened its noose around the VOC’s commerce.⁷⁴

⁷² NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, “Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen,” p. 1072–73.

⁷³ Winus and Vink, *The merchant-warrior pacified*, 124–133

⁷⁴ NA, Nederlandse Bezitting in Voor-Indie, 1.04.19, Inv. Nr. 29, document no.16, year 1778, n.f. The Dutch wrote a letter to Governor-General Warren Hastings complaining about the *peshcus* or present taken by the EIC on the Dutch commerce at Patna. Considering the VOC were now allowed to purchase only 23,000 *man* of saltpeter, 700 *kist* of opium, and 6,000 or 7,000 pieces of textiles at Patna—considerably less than what they had previously acquired—an appeal was made to do away with the *peshcus* claimed by the EIC. For various letters seeking to increase the quantity of opium purchase as well as complaints about the detention of Dutch boats and other vexations in conduct of trade, see NA, Nederlandse Bezitting in Voor-Indie, 1.04.19, Inv. Nr. 30, and Inv. Nr. 31, pertaining to the 1780s, n.f.

Once the Dutch and other European rivals became subordinate to the EIC's political power in Bengal, the commercial economy continued to operate in a pattern more or less similar to the first half of the eighteenth century. The British now undertook efforts to reorganize agricultural and craft production and trade. While agriculture attracted serious attention of the new English zamindar, the EIC focused far more intently on dominating the region's maritime trade while for the most part leaving internal production and trade in the hands of local zamindars and merchants.

Section III: The Diwani Raj: Transition to Company Rule

In the above section one, I have discussed the centrifugal tendencies among the zamindars along the eastern tracks of the Ganga which led to the decline of the Mughal Empire. The zamindars' appropriation of resources and control over of traffic on the Ganga checked the flow of wealth to Mughal coffers. The trade contracts and mutual dependence of the zamindars and the European Companies further alienated an important local interest group from the Mughal-dominated political economy. As I have demonstrated in this and the previous chapter, the zamindars and local merchants became far more dependent on maritime trade for the regular supplies of liquid money. It would appear as though the gravitational pull of the maritime economy was drawing the resource-rich eastern Ganga plain towards the coast. The EIC's assumption of political power in Bengal was made possible not only by military intervention and better financial and institutional organization, but by the political-economic environment that allowed for a close working relationship between the EIC on one hand and the zamindars and merchants on the other. The latter groups had developed a significant economic interest in maritime trade beginning in the early eighteenth century.⁷⁵ After the EIC assumed political power, it quickly moved up the Ganga to exploit the region's productive economy in tandem with merchants and financiers who also reaped the benefits of the Company's economic and political expansion. Below I will describe the EIC's land management and agricultural exploitation before moving on to discuss its dealings with merchant groups in the second half of the eighteenth century.

The Company Diwan and an Intensive Management of the Land Revenue

The battles between 1757 and 1764 consolidated the EIC's hold over the eastern Ganga plain and eliminated other European rivals. Following the battle of Plassey, EIC officials took a more aggressive interest in the political and commercial situation in Bengal. With Mughal authority on the verge of collapse, private British merchants colluded with other merchants and zamindars, flaunted the laws, and plundered

⁷⁵ Between the English and the Mughal officials Farhat Hasan suggests "an alliance, however vague and undefined," see his "Indigenous cooperation and the birth of a colonial city: Calcutta, c. 1698–1750," *MAS* 26:1 (1992): 70; see also Farhat Hasan, "Conflict and cooperation in Anglo-Mughal trade relations during the reign of Aurangzeb," *JESHO* 34:4 (1991): 351–60, esp. 56.

unhindered through the 1760s.⁷⁶ Meanwhile, in 1764 the British defeated the combined forces of Nawab of Bengal Mir Kasim, Nawab of Awadh Shuja-ud-Daula, and Mughal emperor Shah Alam II at the British at Buxar. The victory resulted in the treaty of Allahabad in 1765, which granted the EIC the diwani right over Bengal, Bihar, and Orissa. The Company assumed direct authority over the Twenty Four Parganas, Burdwan, Midnapur, and Chittagong districts through its covenanted servants, leaving other areas in the care of the Nawab's administration.

Given the burgeoning costs of military conquests and the parliamentary and legal uproar and moral dilemmas that the events in Bengal created at home, it appears that the military feats of the Company's unruly servants and private British merchants caught the Court of Directors in London unawares.⁷⁷ Suddenly drawn into Indian territorial politics, in order to sustain its imperial ventures the Company recklessly managed the land revenue and finances of Bengal up to 1772. In the messy years of the 1760s, the high-handedness of the private British traders and revenue farmers complicated the Company's problems with revenue and finance. The charges of exploitation and misrule during the period of dual governance (when the Nawabs were hand-picked by the Company) are legitimate. However, this period also provided new opportunities for the Company to gain expertise and knowledge about the workings of the agrarian regime in eastern India. In 1772, the Company's Committee of Circuit declared, "[r]evenue is beyond all question the first objective of Government, that on which all the rest depends, and to which everything should be made subsidiary."⁷⁸ But this urgent demand for agricultural wealth also necessitated a deeper engagement with land-revenue management, and it would be wrong to form an opinion about the economic trajectory of eastern India in the second half of the eighteenth century on the basis of the Company's experiences in the years immediately after Buxar. In the following paragraphs I will discuss the agricultural economy during the transition phase between 1757 and 1772 before turning to the subsequent reforms and efforts aimed at agricultural expansion and resource generation, so vital for the survival of the nascent British Empire.

In military terms the battle of Plassey was a relatively small skirmish, the long-term repercussions of which could not have been anticipated by the parties involved. After Plassey, the EIC secured the zamindari rights over the Twenty Four Parganas from the Nawab of Bengal and Robert Clive became its jagirdar. For the *raiyyats* (tenant-farmers) and majority of Bengal zamindars, Plassey symbolized nothing except

⁷⁶ Narendra K. Sinha, *The economic history of Bengal: From Plassey to the Permanent Settlement*, in 3 vols. (Calcutta: The author, 1956), 1:65–71; Søren Mentz, *The English gentleman merchant at work: Madras and the city of London 1660–1740* (Copenhagen: Museum Tusculanum Press, 2005), 22.

⁷⁷ P. J. Marshall, "British expansion in India in the eighteenth century: A historical revision," in *Trade and conquest: Studies in the rise of British dominance in India*, by P. J. Marshall, Variorum series (Aldershot: Ashgate, 1993), 30–31; P. J. Marshall, *Bengal: The British Bridgehead: Eastern India 1740–1828*, *The new Cambridge history of India*, vol. 2 (Cambridge: Cambridge University Press, 1987), 79.

⁷⁸ Radha Kumud Mookerji, *Indian land-system: Ancient, medieval, and modern (with special reference to Bengal)* (Alipore: West Bengal Government Press, 1958), 59, quoted by Mookerji.

a changing of the guard from Siraj-ud-Daula to Mir Jafar, who ruled with the backing of the EIC. As we saw above, several Bihar zamindars had signed trade contracts with the VOC, and it is likely that they hoped to gain additional commercial opportunities from the political interventions of a trade oriented maritime power. This probably explains why many zamindars actively supported the EIC and why a good many of them remained indifferent to the political change.⁷⁹ During Plassey some merchants, Mughal rank holders, and zamindars played much the same role as kingmaker that they had following Alivardi Khan's *coup d'état* in Bengal two decades before.⁸⁰

The return of Clive as governor and commander-in-chief of Bengal saw some disciplining of the private British merchants and the EIC's co-option of the Nawab's administration in what came to be known as the dual system. Under this system, about four hundred Europeans governed the Company's interest while the actual work of revenue collection, law and order, and mundane administrative matters were left into the hands of the zamindars and other local officials. In sum, the Company had power without responsibility while the provincial administration had responsibility without power. In return for the grant of the diwani rights, Clive was obliged to pay less than two hundred thousand pounds to the Mughal emperor, against which he promised the EIC's court of directors a return of two to four million pound.⁸¹ In order to meet its military and administrative costs in Bengal, the EIC tried its best to put pressure on the *naib-subadars* (deputy governors) in Bengal and Bihar to squeeze as much land revenue as possible from the *raiyyats*.⁸² Matters were further complicated by the Company's failure to get any first-hand information about the total revenue-paying potential of the territory under its diwani. Such information was closely guarded by the specialized rural administrators known as *quanungos*, *patwaris*, *chaudhuris*, and so on. These bureaucratic obstacles were made worse by natural calamities such as flooding and crop failures, and the famine of 1770 led to the loss of more than three million people. From the 1770s, the Company authorities debated whether to grant zamindars permanent title

⁷⁹ For example, the maharaja of Nadia extended active support to the Company to attack Siraj-ud-Daula, while Clive exchanged letters with the zamindars of Birbhum, Burdwan, Dinajpur, and Nadia. While a majority of the zamindars were Hindus, the zamindar of Rajshahi was a Pathan who sought the overthrow of Siraj-ud-Daula. See K. M. Karim, "Social structure under the Nawabs," in *History of Bangladesh: A study of government under the Mughal imperial system*, vol. III (Dhaka: Asiatic Society of Bangladesh, 1997), 51–55, cited by Biplab Dasgupta, *European trade and colonial conquest*, vol. 1 (London: Anthem, 2005), 325, n.8 at p. 365.

⁸⁰ Timothy H. Parsons, *The rule of empires: Those who built them, those who endured them, and why they always fall* (New York: Oxford University Press, 2010); this paragraph draws from pp. 169–91. On Clive's jagir and his Mughal mansabdari rank of 5,000 horse and 6,000 foot, see also Bruce Lenman and Philip Lawson, "Robert Clive, the 'black jagir,' and British politics," *Historical Journal* 26:4 (1983): 812.

⁸¹ Parsons, *The rule of empires*, 194; Clive's estimate was not far off the mark what the VOC knew about the annual revenue of Siraj-ud-Daula in 1755. According the Dutch officials at Hugli, the annual revenue of Bengal and Bihar stood at "drie karoer en agt en twintig Lak Ropijen," or 32.8 million rupees (about 3.28 million pounds), see NA, VOC, Inv. Nr. 3075, MvO Taillefert to Vernet, Hugli, 17.11.1763, fo. 1438r.

⁸² Romesh C. Dutt, *The economic history of India under early British rule* (1950; repr. London: Routledge, 2000), 54–57.

to their land, those in favour arguing that this would lead to land improvement and encourage agricultural production and thereby increase the Company's revenues. During the tenures of Governor-Generals Warren Hastings (1773–85) and Lord Cornwallis (1786–93), the Company came to realize that the exploitation of raiyyats and the refusal to consider long-term improvements to agricultural tracts by *ijaradars* (revenue farmers), who had a short-term interest in squeezing the peasantry proved counter-productive and self-defeating. Thus, the peasantry had to be saved and agriculture needed to be supported in order to meet the revenue claims of the government.

The nationalist historiography rightly emphasizes the exploitation of the raiyyats and zamindars by the Company, yet it conveniently skips similar antecedents from earlier periods.⁸³ The territories held by the zamindars and Mughal “successor” states in the eighteenth century had intensified peasants’ exploitation by resorting to *ijaradari*.⁸⁴ Furthermore, while the exploitation of *ijaradars* under the British is undeniable, nationalist scholars hardly discuss the effects of demographic trends, land reclamation, agricultural expansion, and the shift to lucrative cash crops that resulted in regular incomes in the eighteenth century. As we noted above, land reclamation, extension of agriculture and the growth of productive capacity of the rural economy were evident in the seventeenth and first half of the eighteenth centuries, and these processes did not come to an abrupt end after the British came to power at mid-century. It is very likely that in the decades after Plassey some areas directly managed and supervised by the EIC with the Indian agents in Bengal bore the full brunt of colonial exploitation; yet in the long-run it was impossible to remain blind to the adverse effect of these policies on the rural economy, agricultural productivity, and ultimately the survival of the Company itself.

⁸³ For the late seventeenth and early eighteenth century, the *nazims* (governors) of Bengal such as Shaista Khan (1664–78 and 1679–88) appropriated Rs. 90 million, Khan Jahan Bahadur Khan (1688–89) took Rs. 20 million, and Prince Azim-ud-din (1697–1712) by 1706 collected Rs. 80 million. Cumulatively they accumulated 190 million rupees in their rule of twenty-eight years. This sum was half of revenue demanded from Bengal by the Mughals in those years. It is likely that the sum appropriated by these governors was exaggerated, yet there existed scope for personal accumulation of the large sums. This clearly shows how little able the Mughals authorities were to form a clear idea of the total revenue capacity of the province. See McLane, *Land and local kingship*, 31–32. Compare the above instances of appropriation with Haji Ahmad’s accumulated wealth, which at his death in 1748 the Dutch officials at Patna estimated around 300 million rupees (an exaggerated figure, no doubt but the scale of exaggeration markedly differs from that of the seventeenth century exaggerated-figures which were comparatively modest). For Haji Ahmad see, see J. E. Schooneveld-Oosterling, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 11, 1743–1750 (Den Haag: Instituut voor Nederlandse Geschiedenis, 1997), 673, Van Imhoff XXXI, 31.12.1748; another source informs that the Afghans got 7 million rupees, and a large quantity of jewels and bullion as treasure hoarded by Haji Ahamad, see Datta, *Alivardi and his times*, 107. For the increasing revenue demands from the zamindars by the EIC, see Sushil Chaudhury, *From prosperity to decline: Eighteenth century Bengal* (New Delhi: Manohar, 1995), 17.

⁸⁴ For the practice of *ijaradari* in the pre-colonial period, Habib, *The agrarian system*, 274–76; Alam, *The crisis of empire* 39–42; J. J. L. Gommans, *The rise of the Indo-Afghan empire, c. 1710–1780* (Leiden: Brill, 1995), 118–19; Prakash, *Bonded histories*, 121–22.

The EIC was not oblivious to the fact that agriculture could yield positive results only if the raiyyats would get support during times of natural calamities. For example, in 1771 superintendent of Saran sarkar, Edward Golding reported to the “Comptrolling Council of Revenue” at Patna praising the efforts of the zamindars in Saran who extended relief to the raiyyats and gave “Support for their immediate Existence” and in some measures the “materials for future Cultivation.” Golding praised the “Ability and Attention” of zamindars to protect raiyyats that enabled the timely collection of revenue “after so fatal a [famine] one as the last.”⁸⁵

That same year, H. Palmer the superintendent of Rohtas sarkar reported to “Chief etc. of the Council of Revenue” of his mild treatment of and loans (*tacavi*) given for cultivation from the revenue farmer Reza Quli Khan to the raiyyats of Sasaram, which induced them to return to their farms and commence cultivation.⁸⁶ The Council of Revenue dispatched a letter to Colonel Alexander Champion urging him to be considerate of the complaints of renters in the area between Patna and Munger and to heed their apprehensions that bullocks, horses, and coolies in Champion’s army might harm the standing crops along the Ganga.⁸⁷ Another letter specifies the terms of the contract with the raiyyats.⁸⁸ In 1772, J. J. Keighly reported from Darbhanga of his just treatment of the cultivators and as a result of the agricultural improvements he succeeded to a large extent in realizing the settled revenue for the year 1771.⁸⁹

The new leads and experiences in land-revenue administration informed the policies of Warren Hastings and later Cornwallis in the second half of the eighteenth century. Furthermore, Bihar being a frontier province and considering its strategic importance, the control exercised by the revenue administration and the degree of peasant exploitation differed from that of Bengal, where the peasants were subject to the full force of the EIC’s military-fiscal state. Nevertheless, the regime change in the second half of the eighteenth century tied the economy of Bihar even more closely to oceanic trade and in general continued to encouraged agriculture and the production of cash crops.

The EIC and the Local Merchant and the Question of Transparency at the Market Places

As happened in the case of land revenue administration, commerce underwent significant reorganization under the Company’s regime. The famed operations of the Jagat Seths, the Chand brothers, and Khwaja Wajed were liquidated and the merchant magnates were replaced by a number of upstart merchants who began operating within a colonial framework in which the English Company held the upper hand. The EIC wanted to isolate the mega firms of the pre-colonial period, which had been notorious

⁸⁵ BL, APAC, IOR, G/28/2A, PFR, pp. 222–23.

⁸⁶ BL, APAC, IOR, G/28/2C, PFR, pp. 45–47.

⁸⁷ BL, APAC, IOR, G/28/2B, PFR, p. 75.

⁸⁸ BL, APAC, IOR, G/28/2B, PFR, 101–102.

⁸⁹ BL, APAC, IOR/P/2/3, Bengal Public Consultations, p.41.

for political interference. As we shall see, the EIC exerted control over the maritime trade in the goods produced in the region, leaving scope for local merchants to play a role in the regional commercial economy. Another important change that occurred after the political transition related to increased transparency in matters of trade at British-controlled cities such as Calcutta. While such measures eased business dealings, it also contrasted with the pre-colonial methods under which contractors, weavers, and opium growers enjoyed some latitude in terms of selling their final products to those who offered better price, even if they owed advance money and signed a contract with a merchant.⁹⁰ Under the new system, the producers lost their freedom but secured a guaranteed purchase at a regular basis and also some insurance against the risk associated with price fluctuations in the market.⁹¹

The European traders were no innocent lot, and they tried their best to evade customs duty or misuse the *dastak* (a pass granting duty-free trade rights to the EIC in accordance to the royal charter) issued by the provincial Mughal authorities. Controversy around the interpretation of Aurangzeb's farman to the English for "duty free" trade in Bengal is well covered in the literature.⁹² In the first half of the eighteenth century, the English Company misused their prerogative for duty-free inland trade by extending such rights to private British merchants and also to Indian merchants.⁹³ There are several instances of friction at the customs houses along the Ganga, when Dutch or English boats were asked to pay taxes. At times threats of violence or actual violent confrontations in the river complicated the matter.⁹⁴ What appears striking is the fact that in the absence of a uniform law for governing local trade there was differential treatment meted out to the Europeans, other non-Muslim and Muslim merchants under the Mughal regime. Such treatment did not win a constituency of all merchants that could unequivocally support the regime. This explains why a sizeable section of the local merchants remained indifferent to the change of regime in 1757, as they probably anticipated a government controlled by the EIC would create better environment for their enterprise.

The period after the battle of Plassey indeed saw the emergence of petty merchants who operated locally and played a subservient yet complimentary role for

⁹⁰ Prakash, *The Dutch East India Company*, 102–12.

⁹¹ For example opium prices crashed in 1756–57 leading to severe losses to the merchants and agents. See Suprakash Sanyal, "Ramchand Pandit's report on opium cultivation in 18th century Bihar," *BPP* 87:2 (1968): 183–84.

⁹² Susil Chaudhuri, *Trade and commercial organization in Bengal, 1650–1720: With special reference to the English East India Company* (Calcutta: Firma K. L. Mukhopadhyay, 1975), 33–35; Hasan, "Conflict and cooperation in Anglo-Mughal trade relations," 352–56; Dasgupta, *European trade and colonial conquest*, 1:286–87.

⁹³ Brijen K. Gupta, *Sirajuddaullah and the East India Company, 1756 – 1757: Background to the foundation of British power in India* (Leiden: Brill, 1966), 13–14; Kumkum Chatterjee, *Merchants, politics and society in early modern India: Bihar, 1733–1820* (Leiden: Brill, 1996), 129.

⁹⁴ NA, VOC, Inv. Nr. 8760, "Dagregister gehouden door den Capitain Samuel Martinus Hogerwerf, gedurende den optogt naar Pattena in het Jaer 1728," entry of 21.11.1728, pp. 64–5 (the page no. should be 74–5 but the scribe made a mistake); NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, "Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen," pp. 1061–63.

the EIC's external trade. The percentage of customs duty charged from the local merchants now uniformly applied, without any preferential treatment meted out to any particular group of traders. Encouragement of internal trade was in the interest of the EIC, which sought to collect customs duty. Along with endeavouring to expand internal trade, the Company even solicited to the Nawab for the establishment of the Danish factory at Patna.⁹⁵ By allowing the Danish and Dutch merchants to operate the EIC sought to augment more customs revenue. By the early nineteenth century, the customs in Patna showed impressive returns.⁹⁶ Probably this indicates that trade and production continued to expand which augmented larger customs duty into the coffers of the EIC.

In the Dutch and English Companies' documents one can easily find scores of indigenous merchants who supplied local products such as saltpeter, opium and textiles to the European traders and also redistributed essential commodities such as salt.⁹⁷ Thus the demise of large business houses, which had dominated the commercial space in the first half of the eighteenth century, gave way to a large number of smaller merchants to operate in the markets. In the years preceding Plassey, while smaller merchants would have found it difficult to operate without some backing from the large merchants who protected them against political elites and undue exactions, but after 1757 there was a level-playing field for all enterprising merchants.⁹⁸ This brings us to the question of transparency in market transactions and the enforcement of contracts.

In the sixteenth and seventeenth centuries, the Mughal towns had offered relative security to the merchants and their capital. However periodic bouts of insecurity in the eighteenth century had a disruptive effect on trade and commerce. Yet the flourishing port city of Calcutta, founded in the 1690s, offered considerable security to merchant capital. Since commerce dominated the life of the city and the finance of the city depended on trade, its laws were framed to serve the interests of merchants guaranteeing their private property. Any breach of contract was considered a serious offence. In contrast, the Islamic jurisprudence that governed the market rules of the Mughal Empire condemned breaches of contract but never considered it a punishable

⁹⁵ BL, APAC, IOR, H/117, HM, p. 22; see also WBSA, Proceedings of the Provincial Council of Revenue at Patna, vol. 2, 1774, p.163 (Patna the 11th July 1774).

⁹⁶ In 1814–15, the total revenue collection at the Government Customs House at Patna was 387,000 rupees; the following year the figure stood at 460,000 rupees. As the duty charged on goods was five percent, the total transaction probably stood at more than nine million rupees; see BL, APAC, IOR, P/111/68, BBRP (Customs), "Camp Culwar Zillah Shahabad 9 the August 1816," n.f.

⁹⁷ NA, VOC, Inv. Nr. 3831, Bengalen 6, 01.08.1788, "Memorie van betaalde intresten in het boekjaar 1787/88 te Patna," see pp. 1–49 for "memories" or reports that note dozens of local merchants who lent money, usually at 9 percent per annum to the VOC. See also, NA, VOC, Inv. Nr. 3920, Bengalen 4, 01.08.1790, "Memorie van sodaanige Capitaalen a deposito, als ten lasten van d' E: Compagnie tegens de Rente van 9 per cento 's Jaars genegotierd," pp. 72–80; for the year 1790–91, NA, VOC, Inv. Nr. 3954, Bengalen 8, comptoir Patna, 01.08.1791, "Memorie van sodaanige Intrest Penningen, als er geduurende dit Boekjaar 1790/91, so wel hier als te Houglij op de onderstaande obligatie betaald zijn," p. 19. For several dozen of local petty merchants who traded in salt, betel nut, lead and tin in the 1760s, see BL, IOPP, Mss. Eur. F 331/29, Vansittart Collection, pp. 76–79.

⁹⁸ For the need of some sort of protective cover by the smaller merchants, see Dasgupta, *European trade and colonial conquest*, 1:278; see also C. A. Bayly, *Indian society and the making of the British empire*, *The new Cambridge history of India*, vol. 2.1 (Cambridge: Cambridge University Press, 1988), 53–5.

offence. Therefore, it was not mere coincidence that merchant capital flowed in into Calcutta in the first half of the eighteenth century.⁹⁹

Dominance of the coast changed the rules of the game in favour of the EIC. After the provincial capital of Bengal shifted from Murshidabad to Calcutta in 1772, this new powerhouse on the coast increasingly exerted control over trade and commerce as well as on productive hinterlands. This was in clear contrast to the situation under the Mughals, when the hinterland-based polities exercised their control over lucrative coastal urban centres. The Ganga was central to the geographical shift in the location of the region's centre of power. The commodities of the hinterland continued to flow downstream, but political power now projected upstream onto the Ganga plain.

The move of the capital to Calcutta also signalled a decisive break from the old Mughal pattern of controlling ports from the interior. From Calcutta now the coast projected the political authority onto the hinterland through the Ganga, and the maritime economic sphere was able to penetrate the productive hinterlands of Bihar more closely. As we have seen, this was already the case when the zamindars of Bihar signed contracts with the European Companies. After its assumption of political power, the EIC and private British merchants became entrenched in the hinterlands of the Ganga plain, liberated commercial traffic from undue exactions by zamindars, and ensured the flow of merchandise.¹⁰⁰ As British power and influence moved up the Ganga, the institutional and juridical norms of Calcutta followed, and Indian merchants and small entrepreneurs collaborated closely with the new ways of conducting trade. So in Patna we find the families of the former Mughal rank-holders and elites petitioning His Britannic Majesty against the English Court of Judicature, which had become a source of indignation for them as the "low, mean, contemptible persons" from local society began to draw them into the courtrooms.¹⁰¹ At least some of these "contemptible persons" may well have been the newly emerging traders who could now drag some of the erstwhile Mughal aristocratic families into court to settle debts and other transactions. Tirthankar Roy suggests that while the Company received weak and

⁹⁹ Tirthankar Roy, *India in the world economy: From antiquity to the present* (Cambridge: Cambridge University Press, 2012), 106–7. See also Hasan, "Indigenous cooperation and the birth of a colonial city," 70–74. In the 1750s, one Krishnadas, son of a big zamindar of Bengal, Raj Ballav, fled to Calcutta with 53 lakhs rupees. We do not know how such a large sum was taken to Calcutta, whether in specie (which would have been pretty difficult) or whether the zamindar sold goods to the Europeans for some years and received credit from them to be paid in Calcutta. See Dasgupta, *European trade and colonial conquest*, 1:321.

¹⁰⁰ In response to the Dutch complaints about greater freedom of trade, the Company replied in 1785, "The Facilities for your Commerce are now greater than they were by the Removal of various Interruptions and Exactions which formerly impeded it ~ a Revenue of about 9 Lacks of Rupees is remitted to the Zemindars who used to exact a Duty at their Chokies upon all the Trade that passed by them." See NA, Hoge Regering van Batavia (HRB), Inv. Nr. 211, doc. nr. 40, n.f.

¹⁰¹ BL, IOPP, Mss. Eur. F 218/30, "Translation of a Persian Petition from the Native Inhabitants of the subah Azeemabad to the King," fos. 13–16, the quote is from fo.14, (the document is undated but probably written around 1780); see also *Encyclopaedia Britannica; or, a dictionary of arts, sciences, and miscellaneous literature*, vol. 6 (Edinburgh, 1823), 344.

opportunistic support from the landed elites and warlords, those merchants and bankers who collaborated with the new regime gave legitimacy to the empire. This became clear in the rebellion of 1857 when the former fought the regime while the latter defended it.¹⁰²

Conclusion

In the sixteenth and seventeenth centuries, the Ganga was the most important artery of the Mughal Empire, through which the material lifeblood of eastern India was pumped into the rest of the empire. Imperial forces at the strategic towns of Patna, Munger, Bhagalpur, and Rajmahal not only guarded the river but also kept a check on the fissiparous zamindars along the riverbanks. In the early decades of the eighteenth century this scenario changed as newly empowered zamindars began appropriating resources of their zamindari areas and exacted “customs duties” from the boats passing through the river.

The conventional explanation is that the Mughal Empire began to decline after the death of Aurangzeb in 1707, when everything began falling into disarray, and the imperial system foundered. But this picture of dramatic decline resulting from the death of an emperor ignores important structural changes in the political economy and the processes that linked important local groups with the cash-nexus of the region. Trade contracts between the zamindars and the European Companies can be understood in the context of the expanding money economy. I have argued that the local economy oriented more towards maritime trade in the late seventeenth and eighteenth centuries. Overseas demand for local commodities further accelerated in the eighteenth century, and proportionately more money flowed into the region. Increased prosperity empowered the zamindars to subvert Mughal provincial authority. They defied the Mughals, withheld land revenues, and generated additional revenue by extorting protection money from merchant boats on the Ganga in the course of the first half of the eighteenth century.

The traditional historiography of Mughal India tends to generalize about Mughal decline and scholars of Mughal history hardly acknowledge the constraints that geography posed. A case in point has to do with the diverse strategies that imperial officials and generals devised to deal with the inhabitants of lands characterized by complex environments and terrain. As we noted above, the Mughals were content to have nominal submission of the zamindars, and tribute collection from them was only occasionally enforced. The Mughal imperial structure was based on constant negotiations with the chieftains that controlled informal political landscape. While officials in the garrison towns along the Ganga were able to ensure that landed magnates parted with their resources, negotiation was preferred to the use of outright force. In spite of the diplomatic negotiations, the zamindars on the fringes of the empire always maintained a tenuous relationship with the Mughals. In the eighteenth century,

¹⁰² Roy, *India in the world economy*, 122.

zamindars who ruled the strategic areas, particularly at places where the river and the hills came closer, they began to openly defy the Mughals and appropriate resources for themselves. We saw a number of such zamindars along the Ganga who now began to assert on the river and choked the flow of resources to the Mughal coffers.

The rise of the EIC to political dominance in Bengal appears to have begun in parallel with the emergence of powerful native zamindars in Bihar and Bengal in the first half of the eighteenth century. English and Indians alike profited from the expanding maritime global economy. While zamindars became interested in promoting trade to increase their income and bullion supply, the European Companies needed commercial agricultural and craft goods for long-distance overseas markets. Economically speaking, they complemented each other. In the second half of the eighteenth century, however, the EIC as a new zamindar focussed more on cash crops production and land revenue administration.

In the scheme of economic and political change in the second half of the eighteenth century, the Ganga remained a focal point. After all, the lucrative tea trade from China depended in a large measure on the opium produced in the farms of Bihar and Banaras. In 1772 the Company monopolized opium production and turned it into a profitable venture. Similarly, the EIC acquired monopoly control over saltpeter soon after Plassey and it controlled its sale to the other Europeans. Indigo also became a profitable commodity and many European indigo planters ventured in its production and trade. Textiles production in Bengal continued to depend on raw cotton supplied through internal trade networks. The Ganga remained a highway of trade and traffic and all of the above-mentioned commodities moved on it until the coming of the railway in the mid-nineteenth century.

Summary and Conclusion

*I hope your realm has reservoirs that are large and full of water, located in different parts of the land, so that the agriculture does not depend on the caprice of the Rain God.*¹

Of Water, Wealth and the Ganga

With its life-giving and regenerative capacity, water has been at the core of all civilizations that have emerged and endured in the world. Water is an even more precious resource when it is in arid zones. The impressive ancient Egyptian and Harappan civilizations emerged in well-watered but otherwise arid zones. At the interface of dry and semi-arid areas in Southwest Asia, in the river valleys of the Nile, Tigris, and Euphrates, scholars believe that the Fertile Crescent was the region where farmers first started food production and domesticated many useful mammals starting around 8500 BC.² Archeologists generally agree that a few hundred miles to the east, at the crossroads of Central and South Asia, the dry zone region of Mehrgarh (in Balochistan, Pakistan) was the first site in South Asia where people began experiments with food production, around the seventh millennium BC. In the fourth to second millennium BC, the region witnessed the growing complexities in society and economy with the growth and decline of first urban civilization of Harappa, which was watered by the Indus River.

The dynamic of a powerful river in an arid zone similarly informs the present work on the Ganga and its plain. Apart from being a source of perennial flow of water, the river also connects ecologically distinct zones over its 2,500 kilometre-length. The water from the rain and river sustained agriculture and food production in the humid zone, while drier marchland facilitated movement and transportation, cattle breeding, and limited agriculture. Economic and urban growth and state formation invariably gravitated to the strategic areas where the resources of these two ecological zones could be conveniently exploited. Thus, from the first millennium BC, the mahajanapadas emerged in areas where the arid and humid environment met and people could harness the resources of both zones. The most successful of these early mahajanapadas was Magadha, and it was in the same geographical area that the Mauryas succeeded in

¹ Thus said the sage Narada while greeting Yudhisthira, the Indian king of Kurukshetra and Indraprastha of the *Mahabharata*. Quoted in A. K. Biswas and Tsuyoshi Hashimoto, ed., *Asian international waters: From Ganges–Brahmaputra to Mekong* (Bombay: Oxford University Press, 1996), 5.

² Jared Diamond, *Guns, germs, and steel: The fates of human societies* (New York: W. W. Norton, 1999), 97–103.

establishing the first South Asia-wide empire, with their capital at Pataliputra, in the late fourth century BC.

The economic and political processes leading to the emergence of large empires in the Ganga plain began with the migration and settlement of Indo-Aryan speakers. Before moving south and eastwards, they were primarily pastoralists though also familiar with barley and wheat cultivation; these two occupations defined their mixed economy in the drier parts of the Indo-Gangetic plains. From around 1000 BC, probably pushed by a drier climatic regime and diminishing rainfall, population pressure, and the need for more land for their cattle, the Indo-Aryan speakers gradually moved to the Ganga plain following the banks of the Yamuna and Ganga. As we demonstrated in Chapter 2, with their sizeable cattle wealth and traction power, these migrants transformed the economy of the eastern Ganga plain, which abounded with cultivable land and was perennially watered by the rain- and snow-fed rivers. The new migrants' knowledge of agriculture benefited from their interactions with the previously settled population who practiced agriculture at a subsistence level and indulged in fishing and foraging. As a result of the interactions of people, skills, and resources, the people of the eastern Ganga plain developed an economy based primarily on wet rice cultivation and surplus food production. The changes in the economy help explain the urbanization and state formation in the Ganga plain of the first millennium BC. From the geographical location of Pataliputra, the empires of the Mauryas and Gupta exploited the agricultural resources of the humid Ganga plain and strategic resources such as elephants, iron, and wood from the relatively drier and well-drained southern Chhota Nagpur Plateau.

The drier marches in the western parts of the Ganga plain emerged as the centre of political gravity in around the late first millennium AD. The imperial capitals of Delhi and Agra were located in the arid zone, and were able to project their political power down the Ganga and onto its humid fertile plain. This logistical arrangement worked fine for the Delhi Sultanate and the Mughals. During the Mughal Empire, the political and agricultural frontiers moved eastwards and the Ganga delta was integrated into the Mughal political economy. During the sixteenth and seventeenth centuries, the Ganga played a pivotal role in ensuring Mughal control over the fertile tracts, and a string of garrison towns along the river such as Patna, Munger, Bhagalpur, Rajmahal, and Dhaka functioned as centres of imperial power.

The political and economic integration of the Ganga plain into the Mughal Empire had favourable effects on commercial expansion. Indian merchant groups such as the Marwaris/Jains and Khatri from western and northwestern India, respectively, accompanied Mughal armies to the eastern plain. They actively participated in the growing economy by extending credit to the peasants, converting agricultural surplus into cash, and facilitating land revenue collection of the state. Overall, they fostered the market economy of eastern India and maintained subcontinent-wide networks of bills of exchange, or hundi, and commodity exchange. Along with Indian merchants, the Armenians, too, joined in by the seventeenth century, participated in trade via riverine

and overland routes linking Bengal and Bihar with Gujarat, Agra, Delhi, Lahore, and Central Asia. The political integration and wider commercial networks had positive effects on the commodity-export-driven commercial economy in the geographical area between Patna and Hugli. As the market infrastructure and commodity production peaked in the seventeenth century, the European Companies could hardly ignore the opportunity to participate in the lucrative trade along the Ganga. Local merchants and producers in the fertile tracts of Bihar were successful in meeting the growing demand for saltpeter, opium, textiles, and other commodities in the seventeenth and eighteenth centuries, as we have shown in Chapters 4 and 5. Without water from the river and rains the productivity of the region would have been unthinkable.

The participation of the European Companies in the economy of the Ganga came only after they had established themselves in Gujarat and on the Coromandel Coast. It was only around the mid-seventeenth century that the eastern and western deltas of the Ganga were brought within the frame of the Mughal Empire. With this political integration, the agricultural frontier moved further east from Dhaka while the commercial centre of gravity came to be firmly located in the western delta, on the Hugli branch of the Ganga where the English, Dutch, French, and Danes all opened their factories since around the middle of the seventeenth century. Soon thereafter the Companies penetrated into the heart of production centres of the plain up to Patna via the Ganga. Keeping pace with global demand, the export of commercial goods expanded in the late seventeenth and eighteenth centuries and the region absorbed increasingly large amounts of specie. The Mughal state became the obvious beneficiary of this commercial expansion, as large revenues flowed into the state coffers, but the growing maritime trade gradually pulled the eastern Ganga plain out of the Mughals' orbit and incorporated the region with the global economy. As the maritime route became the most dependable and regular source of bullion stream in the region, the agrarian polities found it impossible to ignore this lucrative source of liquid money. In spite of the growing assertiveness of the Companies at the turn of the seventeenth century in Bengal, the Mughals simply gave in and allowed them to trade.³

By the early eighteenth century, the Mughal Empire's apparatus for governance and control were showing signs of weakness. In the long run, the growing prosperity of the eastern Ganga plain had a politically disruptive effect, paving the way for its economic and political alienation from the Mughal Empire. Benefitting from the trade boom in the age of commerce, the zamindars along the Ganga confidently appropriated local resources and in other ways asserted themselves against imperial authorities. The dry marches along the southern banks of the Ganga once again became a simmering zone of political transition, what André Wink calls *fitna*, or sedition. The warlords, the

³ On the VOC's blockade of the Mughal ports from 1704 to 1706, see G. D. Winus and M. P. M. Vink, *The merchant-warrior pacified: The VOC (the Dutch East India Company) and its changing political economy in India* (Delhi: Oxford University Press, 1991), 92. For growing English assertion, see C. R. Wilson, ed., *Early annals of the English in Bengal: Being the Bengal public consultations for the first half of the 18th century*, in 3 vols. (London: W. Thacker, 1895–1919), 1:297, 2:xlvi.

Afghans, and zamindars of various hues led the process of regional centralization and resource generation. Agricultural expansion and intensive resource mobilization through *ijaradari* brought even more money into the coffers of zamindars, who could now maintain large militias of their own. The growing demand for commodities brought more money, which in turn gave more power to the zamindars. With resources and militia power they further expanded their domain. As opportunities to trade in commodities were at the doorstep, they became important conduits of the cash-nexus. Unlike their immediate predecessors, eighteenth-century zamindars effectively controlled the trade routes and levied “customs-duty” on merchant boats that passed through the Ganga. The weakening imperial control over the river, and the leakages of resource into the hands of local warlords and zamindars not only checked the flow of money to the Mughal centre, the imperial forces also faced more serious resistance from the increasingly powerful chieftains.

Why did the zamindars of eastern India broke away from the Mughal controlled political economy in the eighteenth century? The explanation can be found in the seaward orientation of the regional economy of Bihar and Bengal. As we noted in Chapter 7, the zamindars entered into trade contracts with the European Companies and facilitated trade and transportation of merchandise produced in their zamindaris. For the zamindars, maritime trade became a more dependable source of income.

Similarly, the merchants in Bihar and Bengal also developed a strong interest in the oceanic trade, either by participating directly in overseas ventures or by supplying merchandise to maritime merchants. In the first half of the eighteenth century, the unsettled political conditions in northern India, external invasions, and Maratha raids frequently disrupted the overland route to northern and northwestern India. Although the overland route remained functional, the maritime outlet became relatively more secure for the export of merchandise and the continuation of trade in eastern India.

As the economic interests of the zamindars and merchants got intertwined with maritime trade, the political transition from the Mughals to the EIC became relatively smooth. The alliance of many big merchants and bankers, zamindars, and Mughal officials with the EIC in the battle of Plassey can be explained more easily only if we keep in view the dynamics of the political economy of the time. This is not to suggest that the domination of the EIC met no resistance, but the ultimate failure of the opposition forces and the Company’s triumph depended on much more than a militarily determined political outcome.⁴ In fact it was the common economic interest of the local

⁴ BL, IOPP, Mss. Eur. F218/3, n.f. In 1763 when Mir Kasim was at Munger and preparing to challenge the EIC, a vakeel belonging to Mr. Amyatt called Cussaul Chund (Kushal Chand) reported, “several principal Jemutdars [Jamindars?] sent word to Mr. Amyatt, soon after his arrival at Monghyr, that they wou’d readily join the English in case of a rupture; but they know not how to trust us on account of our having given up Ram Narrain in the manner we did.” Furthermore, Mir Kasim himself hardly had major problems with the English who he wanted to “stay in the country as meer [sic] traders, and give up the new fort they have made to him,—or else destroy it; then he will permit them to remain.” The vakeel also related that “Mirza Sally, and several other considerable persons are wellwishers of the English.” According to the gazetteer compiler of Bhagalpur district, the zamindar of Sonbursa, “Raja Fateh Singh,

elites and the English Company that sustained the latter's rule, though the peasants, weavers, and labourers came to bear the burden of the new military fiscal state. In spite of the intensified exploitation, the economic and political trend was a familiar one. Inheriting the pattern of regional centralization set into motion by the zamindars from the early eighteenth century, the EIC was able to successfully transform itself from a trading entity to the largest new zamindar, and having done so it carried forward the process of resource generation, agricultural expansion, and exploitation of resources. It was the wealth of the fertile and well-watered Ganga plain that sustained the so-called investment for the export of the EIC, and also paid for the sepoys that conquered the subcontinent in the early nineteenth century.

The Ganga remained central to commercial and political control in the later half of the eighteenth century. While commodities of the Ganga plain continued to be transported downstream to the coast, Calcutta began to project the political power upriver onto the Ganga plain. The "rise of the coast" to political and economic dominance was unprecedented, as the earlier arid-zone-based regimes had always controlled the coast from the interior. This logistical shift from the interior to the coast underlines the changes in the global economy based on long distance maritime trade. The rise of the coast was a global phenomenon during the early modern period and the rivers lent special logistical support in controlling the interior. As Anand Yang has shown us the Ganga remained central to the political economy until the middle of the nineteenth century when the railways displaced it as a primary artery of trade and transportation.

Critics may argue that if the Mughal integration of the eastern Ganga plain had a favorable effect on the regional economy in the late sixteenth and seventeenth centuries, then by the same logic it follows that the weakening of the empire in the eighteenth century would lead to economic decline. Although apparently making sense, such reasoning ignores the larger economic contexts of these two processes of integration and disintegration separated by a span of at least a century. In the aftermath of the political and economic integration under the Mughals, the economic infrastructure and market institutions developed strong roots and consolidated a number of wide-ranging trading and financial networks. The additional demands for commodities generated by European maritime merchants further solidified the South Asian market and financial institutions. Thus, when the Mughal Empire was in decline these institutions were strong enough to be able to withstand the empire's disintegration process and managed to continue their business. The regional power centres that came up in the wake of regional centralization, and the successor states to the Mughal Empire facilitated the inter-region trade and the functioning of financial networks as they did during the Mughal Empire. The integration of the regional commercial economy with

is said to have sided with the British Government against Mir Kasim in the battle of Udainala." See J. Byrne, *Bengal district gazetteer: Bhagalpur* (Calcutta, Bengal Secretariat Book Depot, 1911), 174.

the maritime global economy also played a role in injecting vigor into the market and financial institutions operating from the eastern Ganga plain.

Sceptics may also object that the present study gives too much agency to the Ganga for explaining the political and economic processes in eastern India. After all, wealth was produced in western India and the Deccan, too, and numerous prominent river-roads served important political and economic functions in other parts of South Asia. Why, then, should the Ganga be accorded so much importance? While the present work does not intend to downplay the importance of economically important regions like Gujarat and the Malabar and Coromandel Coasts or the economic functions of the Brahmaputra, Sabarmati, Godavari, or Kaveri rivers, the Ganga and its plain have experienced a distinct historical trajectory. As we have seen, the river itself has been central to economic, political, and social developments in northern India since at least the first millennium BC. The association of the Ganga with the Indian civilization is based not only on the poets' or sages' eulogies and celebration of the river. Rather it has to be understood that the river's mystical and spiritual power has a very strong material basis. If we consider agricultural productivity, demographic advantage, resource richness, relative security from drought and famine, and economic sustainability in the Ganga plain, such considerations makes it easier to comprehend why the banks of the Ganga have been the birthplace of so many mighty, often South Asia-wide empires—from the Mauryas to the British Raj.

Viewed from an environmental perspective, the Ganga qualifies quite well for being considered a distinct geographical entity. In Chapter 2, we noted the geographers' unsatisfactory division of the Ganga plain in three broad parts. We further highlighted the inability of this tripartite division to explain historical processes on the plain and thus suggested a division based on aridity and humidity. Throughout its plain the Ganga flows keeping drier and humid parts to the west and south and to the east and north respectively. We noted the pull of the resource and people towards the riverbanks, which formed an interstitial zone flanked by the distinct ecological zones. It was within this transitional zone that many historical processes had occurred ever since the Indo-Aryan speakers migrated to the plain. The so-called second urbanization in the Ganga plain during the early historic period unfolded and the ancient imperial capital was firmly located in this zone. In the early modern period, imperial armies marched along the banks of the Ganga and several strategic fortresses and garrison towns grew up there. From these garrison towns the Mughals subdued the fertile humid tracts, coerced the zamindars into submission and alienated their resources. Apart from these strategic considerations, the river functioned as a highway of trade and traffic as well. Finally, the decline of the Mughal Empire is easily in sight once the Mughals lost control over the Ganga to the zamindars and ultimately to the EIC in the eighteenth century. If the river has been at the core of political and economic processes for so long, denying it a historical agency and geographical entity can only lead to an imperfect understanding of early modern South Asian history.

Samenvatting

van

De politieke economie van de Ganges: Snelweg naar staatsvorming in Mogol-India, c. 1600-1800

door

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Deze studie onderzoekt de politieke en economische ontwikkelingen in het oostelijke deel van het Mogolrijk in India door te focussen op één van de beroemdste rivieren ter wereld: de Ganges. In de geschiedschrijving van Zuid-Azië in de vroegmoderne tijd hebben historici zelden voor een historisch-geografische benadering gekozen. Als gevolg hiervan is de Ganges als historische factor nauwelijks onderzocht. Deze studie presenteert de Ganges als aparte geografische eenheid die nederzettingen voedde en politieke economieën vormgaf.

De Ganges verbindt twee door historici nader te onderscheiden klimaatgebieden. Een relatief droge zone aan de westelijke en zuidelijke oevers, en een relatief natte zone aan de oostelijke en noordelijke oevers. Het gletsjerwater uit de Himalaya en de moessonregens bepalen de voedselproductie in het hele gebied, maar zorgen vooral in het noordoosten voor een hoog natuurlijk surplus. De landbouw was in de drogere gebieden weliswaar minder stabiel, de daar aanwezige natuurlijke weidegronden waren hier juist weer gunstiger voor grootschalig transport en veehouderij. Vanwege de strategische positie tussen deze twee verschillende maar complementaire zones, functioneerde de Ganges al heel vroeg in de geschiedenis als een snelweg van en naar staatsvorming. Om de ontwikkeling van deze spilfunctie in de *longue durée* te laten zien, zal het eerste deel van deze studie ingaan op de geschiedenis van twee millennia sedentarische en staatsvorming in de Gangesvallei. Daarna zal de studie steeds meer detail aanbrengen en steeds meer in tijd en ruimte inzoomen op het proces van staatsvorming langs de oostelijke oevers van de Ganges ten tijde van het Mogolrijk.

Er worden in deze studie vier fases van staatsvorming in de Gangesvallei onderscheiden. De eerste fase begon met de verovering en vestiging van Indo-Arische talen- sprekende groepen langs de Ganges in het eerste millennium vóór Christus en het daarop volgende proces van urbanisatie. Vanuit Magadha, gelegen in het huidige Bihar,

ontstonden de grote Maurya- en Guptarijken, die de agrarische bronnen van de Gangesvlakte en de strategische waarde van de goed gedraineerde zuidelijke Chhota Nagpur vlakte succesvol wisten te exploiteren. De tweede periode begon met de economische aansluiting van de Gangesvlakte met de expanderende Islamitische wereld in het noordwesten na de oprichting van het Delhi Sultanaat in de dertiende eeuw. De derde fase van staatsvorming begon toen de Mogolkeizers in de zestiende en zeventiende eeuw hun grip op de Ganges verstevigden. De Mogols controleerden de gebieden langs de rivier vanuit hun garnizoenssteden Patna, Munger, Bhagalpur en Rajmahal. De consolidatie van het Mogolrijk in het oostelijke gedeelte van India ging vergezeld van de commerciële integratie van de Gangesvlakte in de maritieme wereldeconomie. Maar doordat de economie in Bihar zich steeds meer op de overzeese handel ging richten, vinden we vanaf de achttiende eeuw een aantal uit Bihar afkomstige landheren (*zamindars*) die directe handelscontracten met de (Nederlandse) Verenigde Oostindische Compagnie (VOC) begonnen af te sluiten. De meerderheid van deze relatief autonome zamindars verbleven in de moeilijk doordringbare heuvels net ten zuiden van de rivier. Vanuit deze strategische leefgebieden waren deze zamindars steeds beter in staat om de handel en de gebieden langs de Ganges te exploiteren en konden ze ook steeds grotere milities op de been brengen. Het drogere grensgebied ten zuiden van de Ganges werd daarmee opnieuw een broeinest van opstand én staatsvorming. De Ganges werd nu plotseling een katalysator, niet van imperiale controle, maar van regionale centralisatie.

Vanaf het moment dat invloedrijke lokale groepen (zamindars, kooplieden en ambtenaren) langs de oostelijke kant van de Ganges gingen samenwerken met maritieme machten, werd het voor de Mogols moeilijker om vanuit de westelijk gelegen residenties Delhi en Agra de oostelijke steden te controleren. Met andere woorden: het was de samenwerking van de regionale en maritieme machten die uiteindelijk tot de zegetocht van de Britse East India Company leidde. Dit was het begin van een vierde fase van staatsvorming gebaseerd op de snelle ontwikkeling van een nieuwe metropool in de Gangesdelta: Calcutta.

Verder heb ik de ondergang van het Mogolrijk proberen te verklaren door aandacht te schenken aan veranderingen in de mondiale economie. Door hun participatie aan de rivier- economie sinds het midden van de zeventiende eeuw, bewerkstelligden de Europese handelscompagnieën dat Bihar uit de invloed van het Mogolrijk werd losgeweekt. In de achttiende eeuw, toen regionale economieën een sterke kustoriëntatie hadden ontwikkeld en in overzeese handel participeerden, werden veel lokale groepen afhankelijk van de export van goederen en de aanvoer van geld en edelmetalen. De groeiende welvaart van de regio had een destabiliserend effect op de cohesie van het Mogolrijk. De gedeelde economische interesses van de regionale elites en de Europese handelscompagnieën veroorzaakten een politieke omwenteling en het ontstaan van een nieuw, op de zee georiënteerd rijk.

De zeven hoofdstukken van dit proefschrift kunnen in drie thematische delen ingedeeld worden. In de eerste twee hoofdstukken plaats ik de Ganges en zijn delta

vanuit *longue durée* perspectief in het bredere culturele en geografische kader van het Indiase subcontinent. Terwijl het eerste hoofdstuk de centrale rol van de Ganges in de Indiase cultuur en samenleving vanaf het eerste millennium voor Christus bespreekt, komen in het tweede hoofdstuk vroege migratie en nederzettingvormen langs de Ganges aan de orde. Hierbij schenk ik in het bijzonder aandacht aan een aantal voor de regio kenmerkende milieufactoren. Het tweede gedeelte bestudeert de Ganges als een rivier die de politieke economie van Noord-India in de vroegmoderne tijd verbond en beïnvloedde. De Ganges verbond de regio met een maritieme economie en bevorderde transport, handel en politieke controle. De hoofdstukken 3 tot en met 6 behandelen de politiek–economische ontwikkelingen langs de Ganges in Oost-India, de integratie van de regionale handelseconomie in een maritieme globale economie, de aanvoer van edelmetalen en de productie en verkoop van handelswaar zoals salpeter, opium, en textiel. Het aanbod van deze goederen trok maritieme handelaren via de Ganges naar Bihar. De stijgende vraag van overzeese markten stimuleerde de productie van de landbouw en de nijverheid langs de Ganges. De gestegen aanvoer van geld en edelmetalen leidde derhalve niet tot inflatie, maar faciliteerde de marktwerking. Profiterend van deze ontwikkelingen konden de zamindars in Bihar hun controle over de Ganges versterken. Tegelijkertijd verstoorden zij echter de stroom van belastingen en handelswaar richting de rijksschatkist en versnelden daarmee de ondergang van het Mogolrijk in de achttiende eeuw. Hoofdstuk 7—tegelijk het derde en laatste thematische gedeelte—focust op de ondergang van het Mogolrijk, de regionale centralisatie onder leiding van de zamindars en daarmee de politieke machtsverschuiving richting de Britse East India Company.

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Curriculum Vitae

Murari Kumar Jha was born in the village Kahua in the Darbhanga district of Bihar in 1977. He did his BA (Honours) in history at Bhagalpur University, Bihar, and subsequently moved to Jawaharlal Nehru University, New Delhi, in 1999 to pursue his higher studies. He studied Medieval Indian History at JNU between 1999 and 2006. At JNU his research interest focused mainly on the merchant communities of medieval Gujarat. In 2005 he passed the National Eligibility Test, a compulsory examination that makes one eligible to teach in Indian universities. Between 2006 and 2009 he received the Encompass-fellowship at Leiden University and earned BA and MA/MPhil degrees and learned the Dutch language. In 2009 he was awarded a three-year position as *Assistent in Opleiding* (AIO) within the framework of the Encompass-programme to pursue a PhD degree. In October 2012 he received a postdoctoral fellowship at the Department of History, National University of Singapore. He will commence his postdoctoral research from 1 July 2013.

Propositions

1. The Ganga River as a geographical entity helps to explain economic and political processes in the region of the Ganga plain.
2. The Ganga divides and connects two historically related but ecologically distinct sub-zones: the semi-arid areas on its western and southern banks and the humid area on its northern and eastern banks.
3. The Ganga stands at the beginning *and* end of empire.
4. The Ganga facilitated Bihar's commercial integration into the maritime global economy.
5. Bihar's commercial integration into the maritime global economy (proposition 4) was the result of the growing agency of regional zamindars, merchants, bankers, and officials, following their increasing collaboration with the European Companies on the coast.
6. The process of regional centralization initiated by the zamindars was carried forward by the English East India Company after it assumed the *diwani* (Mughal taxation rights) over the Bengal province in 1765.
7. The traditional tripartite geographical division of the Ganga plain does not help to explain historical processes. Instead a division based on rainfall is far more useful in explaining the dynamics of polity and economy (contra O. H. K. Spate, *India and Pakistan: A general and regional geography*).
8. In early modern South Asian historiography, the historical-geographic perspective remains to be marginal in informing our understanding of political and economic changes (contra Irfan Habib, *The agrarian system of Mughal India*).
9. Thus far, no work on early modern Indian history has tried to synthesise a regional, political study with a maritime-oriented, economic history (contra

Kukum Chatterjee, *Merchants, politics and society in early modern India* and Om Prakash, *The Dutch East India Company*).

10. Nationalist, Marxist and revisionist scholars continue to disagree significantly on the issue of Mughal decline as well as about the nature of the eighteenth-century Indian economy and polity. A global perspective that focusses on long-term geohistorical processes will yield more tangible results on these historical problems (contra Irfan Habib, “Potentialities of capitalistic development”; Muzaffar Alam, *The crisis of empire in Mughal north India*; Karen Leonard, “The ‘great firm’ theory”).
11. To be a witness to the largely equitable distribution of resources, access to opportunities and the general social security enjoyed by Dutch citizens was a truly remarkable experience. If made applicable at a wider, even global scale such political and social arrangements would help achieve the goals aspired to by the radical theories of social change still debated in India and elsewhere.
12. Pursuit of historical inquiry and the generation of knowledge should be premised on compassion for our fellow humans and could help create a mutually dependent global order.