Spice War: Ternate, Makassar, the Dutch East India Company and the struggle for the Ambon Islands (c. 1600-1656)

Mostert, T.

I. First of all, the volcanoes

In touring around the eastern archipelago's physical characteristics, this chapter provides an opportunity to familiarise ourselves with the large and complicated island world in which the Spice Wars were waged. More importantly, it also aims to look at the region through an environmental lens, showing how the physical characteristics of land and sea, and the settlement patterns and subsistence strategies, were extremely consequential for the wars' political and military dynamics.

The region's physical and ecological makeup is in many respects unique and has long fascinated naturalists. We therefore have some excellent guides, both contemporary with the Spice Wars and from later periods, for this exploration of land- and seascape, climate and environment. Rumphius is perhaps the most important of these and merits some introduction. Coming to the region as a soldier during the Great Hoamoal War (and therefore having first-hand experience of the conflict), he later combined his work as a VOC merchant with writing many studies about the region. Rumphius was certainly interested in history and politics; indeed, he wrote one of the three roughly contemporary histories of the Spice Wars which I use throughout this dissertation. Yet he was first and foremost a naturalist, dedicating most of his work to the plant and animal life, as well as the natural phenomena and curiosities, of Ambon and the surrounding region. Later scientists fascinated by the region include the nineteenth-century naturalist Alfred Russel Wallace, who, although less famous than his contemporary Charles Darwin, was one of the founders of evolutionary theory. Wallace came to his understanding of evolution on the basis of his observations in eastern Indonesia, and was the first to grasp some of the processes that shaped the region and its ecology. As both Rumphius and Wallace realised, the region was unique in many respects. As we will see, this also meant that the region presented some unique problems to those trying to control it.

In addition, this chapter draws on a rich array of ideas, concepts and insights from the booming field of environmental history and its precursors – from Braudel, who built his study of the Mediterranean upon the foundational observation that 'mountains come first'; through Alfred Crosby, who, in his landmark study *Ecological Imperialism*, showed how ecological factors aided Europeans' imperial efforts in certain regions but not others; to studies of specific examples of the interplay between ecology and colonialism, including McNeil's *Mosquito Empires*, which showed how outbreaks of malaria and yellow fever were a defining factor in the colonisation of the Americas, having been caused by the ecological

change brought by the development of plantation economies. James C. Scott has dedicated much of his scholarly work to the strategies that states employ to exert power over their subjects and people's strategies for resisting that power. He has highlighted the extent to which landscape and human ecology determine a region's level of susceptibility to centralised power and outside appropriation. Scott's work provides a very useful lens through which to look at the land- and seascape of the eastern archipelago and how it influenced the dynamics of the Spice Wars. Emmanuel Kreike's *Scorched Earth* also provides conceptual tools on the relation between environment, human society and warfare that are acutely relevant to the topic at hand. As Kreike points out, descriptions of the effects of war often make a false distinction between nature and human infrastructure. In human terms, there is no essential difference between destroying fields and irrigation works (or denying access to them by deporting or driving off the population), and devastating a less clearly cultivated environment upon which a population relies for hunting, gathering, and/or shifting cultivation. Moreover, there is no coherent way to draw the distinction, for the specific composition of species and soil types in what western observers perceived as a wild landscape, were often actually the result of longterm interactions between that environment and its human inhabitants. Kreike therefore chooses a term that does not entail such distinctions. He speaks of a population's *environmental infrastructure* and calls its destruction *environcide.* As I hope to make clear below, these concepts applies very well to our present study.[28]

Deep water, shaky ground

As we saw in the introduction, specialists of the history and culture of insular Southeast Asia have often been hesitant to consider the eastern archipelago a distinct region, for it is so linguistically, culturally, and ethnically diverse. Biologists, biogeographers, and geologists have fewer reservations in this regard: to

28 Braudel, *The Mediterranean,* I; Crosby, *Ecological Imperialism*; McNeil, *Mosquito Empires*; James C. Scott, *The art of not being governed* (among others); Emmanuel Kreike, *Scorched Earth: environmental warfare as a crime against humanity and nature* (Princeton 2021). For archipelagic Southeast Asia and the Indonesian archipelago, many works by e.g. David Henley and Peter Boomgaard take an environmental approach, e.g. H. Schulte Nordholt and D. Henley eds. *Environment, Trade and Society in Southeast Asia; A Longue Durée Perspective*. Leiden: Brill, 2015; Peter Boomgaard. *A World of Water : Rain, Rivers and Seas in Southeast Asian Histories*. Leiden and Boston: Brill, 2007; Id., *Southeast Asia: An Environmental History*. Santa Barbara, Cal.: Abc-Clio, 2006.

them, the distinctive character of the area between Borneo on the one hand and New Guinea and Australia on the other is obvious.

In some of these disciplines, the region is labelled Wallacea, after the nineteenth-century naturalist Wallace introduced above. When travelling through the Indonesian archipelago in the 1850s and 60s, Wallace noticed a sudden change in the natural environment as he crossed the Makassar Strait from Borneo to Sulawesi. He surmised that this difference was related to the sudden increase in ocean depth. Sea levels, he speculated, might have been periodically lower in the past; during such periods, Borneo would have been connected to the Eurasian landmass, whereas Sulawesi would have remained separate. This would explain why species had developed in markedly different ways there. The border between the two regions became known as Wallace's Line. Nowadays, we know that Wallace's hunch was correct and understand the plate tectonics underlying the species distribution that Wallace and his later colleagues noticed.[29] Western Indonesia is on the Eurasian Plate and would have been connected to the Eurasian landmass during ice ages, when sea levels were lower. Australia and New Guinea, for their part, are both on the Indo-Australian Plate and also formed one landmass when sea levels were lower in the past. Broadly speaking, Wallacea is the tectonically turbulent island world of smaller oceanic plates in between.[30]

Even within the Indonesian archipelago – one of the most geologically active regions in the world – Wallacea stands out for its geological turbulence and complexity. The two main forces shaping the region at large converge here. Firstly, it is part of the Pacific Rim, the subduction zone spanning the perimeter of the Pacific Plate, which is also known as the 'Ring of Fire' because it strings together the most geologically unstable regions on the planet. Secondly, the Indo-Australian Plate comes in from the south at high speed (in geological terms, anyway), being subducted under the Eurasian plate and the small oceanic plates surrounding it. [31]

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29 In the east, Wallacea is demarcated by what is called Lydekker's line. In the last decade of the nineteenth century, the English naturalist Lydekker described the biogeographical boundary between, on the one hand, New Guinea and Australia and, on the other, Maluku and Nusa Tenggara. The region between Wallace's Line and Lydekker's line is what we nowadays call Wallacea.

30 Technically, this term is mostly used by biogeographers, paleontologists and the like, while geologists speak of the Molucca Sea Collision Zone. The two terms, however, largely describe the same area, and the tectonics and species distribution of the region are closely related.

31 At present, Australia moves north about 7 centimetres per year, which is enough to

Though not yet aware of the underlying plate tectonics, early modern inhabitants of and visitors to the region certainly noticed the earthquakes, volcanic eruptions, tsunamis, and landslides that this distinctive geology caused – and continues to cause. Perhaps the most recent reminder of the region's turbulence came in September 2018, when a large earthquake hit the Minahasa Peninsula on Sulawesi, triggering a tsunami that wreaked havoc on the town of Palu. The events caused thousands of deaths and drove tens of thousands from their homes.[32]

Seventeenth-century observers documented very similar events. Rumphius, for instance, described his experience of an especially violent earthquake on Ambon, and the tsunami that followed it, in vivid detail. After giving an account of the various smaller shocks and other odd natural phenomena preceding the main shock, he described how

> on 17 February 1674, on a Saturday evening, at around half past seven, under a beautiful moon and calm weather, our whole Province […] was subjected to such terrible shocks that most people were convinced that Judgment Day had come. The bells in Victoria Castle on Leitimor tolled all by themselves, and the people who were standing around talking to each other, fell against one another or toppled over as the earth heaved up and down like the sea. 75 Chinese pedaks, or small stone buildings, as well as a large House (also made of stone) crashed down, and were reduced to rubble, killing 79 people, among them the wife of merchant G.F. [sic] Rumphius, along with her youngest daughter.[33]

Having drily noted the death of his own wife and daughter, Rumphius then recorded what happened in various places along the coast. A total of 2.322 people

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warrant regular corrections of such things as GPS coordinates. The last such correction happened in late 2016, when GPS coordinates were adjusted about 1,5 meters to compensate for the continent's movement since the previous correction in 1994.

32 The event was widely covered, but for one background news article giving attention both to the seismology and the human effects of this event, see Feliz Solomon, 'Amid the Ruins of Sulawesi, Earthquake Survivors Take Stock' in *Time,* October 2018, available online at: https://time.com/5422959/indonesia-sulawesi-earthquake-tsunami-survivors-aftermath/ (last accessed June 2019).

33 Georg Rumphius, W.E Buijze and M. Beekman eds., *Waerachtigh verhael, van de schrickelijcke aerdbevinge, nu onlanghs eenigen tyd herwaerts, ende voornaementlijck op den 17. February des Jaers 1674 voorgevallen, in en ontrent de Eylanden van Amboina* etc. S.l.: Buijze, 1998 [orig.

died as a result of the earthquake and subsequent tsunami, and whole villages were swept out to sea.[34] Most of the garrison of Fort Amsterdam ran outside following the earthquake only to be caught out by the tsunami, which came in so high that it touched the roof of the three-storey blockhouse. Only some soldiers who had been trapped upstairs survived. 1.461 people were killed in Hila alone, the former site of the village being strewn with corpses up to 200 meters inland. Huge cracks and bangs were heard from the mountains, entire cliffs came tumbling down, and huge landslides occurred, changing the course of some rivers. Several coastal areas disappeared entirely beneath the waves and whole swathes of clove plantations and jungle were levelled.

For his part, Valentijn described the thrills of living on the volcanic island of Ternate (though not first-hand; he was also based in Ambon):

> Of old, this mountain, after the nature of all such mountains (which sometimes burn more, sometimes less, and sometimes just in their entrails), tends to sometimes show fire, which one sees most clearly at night; sometimes only heavy steam and smoke; sometimes it throws only white ash; sometimes some pieces of pumice; and sometimes entire rocks and cliffs, with terrifying crackles and rumbles. It thus endangers the lives of both the indigenous and the European population, not only because of its flames reaching to the heavens…, but also, after its flames stop, its sulphuric smoke poisoned the air to such a degree that people became sick and soon died.[35]

Periods of high volcanic activity, Valentijn added, made it difficult to find a governor for Maluku, for no one particularly liked the prospect of suffocating in sulphuric smoke. At the time Valentijn was writing these words, however, the volcano had been relatively quiet for a few decades, after an active period in the 1670s and 80s. The mountain sides, some of which had been cleared of vegeta-

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1675], p. 51. Rumphius published the pamphlet anonymously, but is almost certainly the author.

34 The Dutch had forced the entire population of the region to move to the coast at the conclusion of the Spice Wars, which must have significantly exacerbated the human toll of this disaster.

35 François Valentijn. *Oud en nieuw Oost-Indiën, vervattende een naaukeurige en uitvoerige verhandelinge van Nederlands mogentheyd in die gewesten, benevens eene wydlustige beschryvinge der Moluccos, Amboina, Banda, Timor, en Solor* etc. Franeker: Van Wijnen, 2002 [orig. 1724-1729]. Book I.2, p. 5.

tion by the lava streams, had turned green again.[36] These quiet periods, however, never last: Gamalama, as Ternate's volcano is known, erupted violently again on several occasions in the 1770s and then again, after another long calm period, in the 1980s and 90s.[37]

In the seventeenth century, the region's indigenous and European inhabitants both tended to interpret such events as supernatural rather than natural phenomena. In 1615, when the Dutch were waging war in the Banda Islands and aggressively thwarting English attempts to trade there, the Gunung Api violently erupted. This led an English Company official to observe that 'Surely the Lord is offended with them, for from the top of Gonnepe [Guning Api…], which continually burneth, many times flies great stones into the castle with such force that once or twice the Hollanders have been in mind to forsake it all.'[38] The inhabitants of Seram and the surrounding islands generally considered earthquakes bad omens. The Dutch were little different: preachers generally interpreted earthquakes as God admonishing the population to better their ways. As Rumphius remarked, bad earthquakes were sometimes taken to herald the End of Days. Even the foreshocks of the 1674 earthquake led the Reverend Albertus Struys, stationed at Haruku, slightly to the east of Ambon, to wonder whether

> these earthquakes from the north, [as well as several other natural phenomena all observed in the north] would not mean anything? I cannot imagine they do not. I trust that we will soon hear of big changes (not only in our church, but more importantly among those of the Antichrist), such as occurred in the days of Babel, Tyrus, etc.[39]

When the earthquake did hit four weeks later, it prompted Struys to write a

36 Ibid. The subsequent pages, 6-10, rather vividly describe an expedition up to the caldera in 1686.

37 For a list of historic eruptions, see the website of the global volcanism program of the Smithsonian Institution, at https://volcano.si.edu/volcano.cfm?vn=268060. Note that my remark applies only to large eruptions (VEI scale 3) – smaller eruptions occur almost continuously at this volcano, as well as others in North Maluku.

38 John Skinner to Adam Denton, 12 July 1615, in: F.C. Danvers and W. Foster. *Letters Received by the East India Company from Its Servants in the East*. London: S. Low, Marston, 1896–1902, vol III, p. 135.

39 Struys to the Church Council in Ambon, 22 January 1674. H.E. Niemeijer, Th. van den End, and G. J. Schutte. *Bronnen betreffende Kerk en School in de gouvernementen Ambon, Ternate en Banda ten tijde van de Verenigde Oost-Indische Compagnie (VOC), 1605-1791. Vierde*

follow-up letter to the Church Council that was so full of efflorescent Biblical language as to elude summary.[40] It concluded with the claim that 'we are now in the time of the seventh trumpet and vial', which is to say that the Apocalypse was already well under way.[41] For his part, Rumphius had a more mechanistic explanation for the earthquakes – although it differs significantly from our present understanding. In his Description of the Land of Ambon, he wrote that 'in general, earthquakes occur in Ambon when, after a long period of heat and sunshine, there are heavy rainfalls lasting one or two days. Then, the pores of the earth become clogged, and the vapours that have been shut in become active'.[42]

The geology of the eastern archipelago

The eastern archipelago was, and is, shaped by these tectonic forces. Many of the islands were created by the volcanism occurring behind subduction zones, where magma is able to work its way up between the tectonic plates. The Sunda Islands, which form the southern boundary of the region under study in this dissertation, are principally volcanic. The result of the subduction of the Indo-Australian Plate, they form part of an arc of islands that also includes Sumatra, Java, and Bali. (One of these islands, Sumbawa, was the setting of the largest eruption of the historical period: the Tambora volcano erupted in 1815, blowing such a large amount of volcanic ash into the stratosphere that it blocked sunlight worldwide, causing temperatures to plummet abruptly. The subsequent year would become known as 'the year without a summer'.) The Banda Islands, with their active volcano the Gunung Api, are on the far end of this same arc.

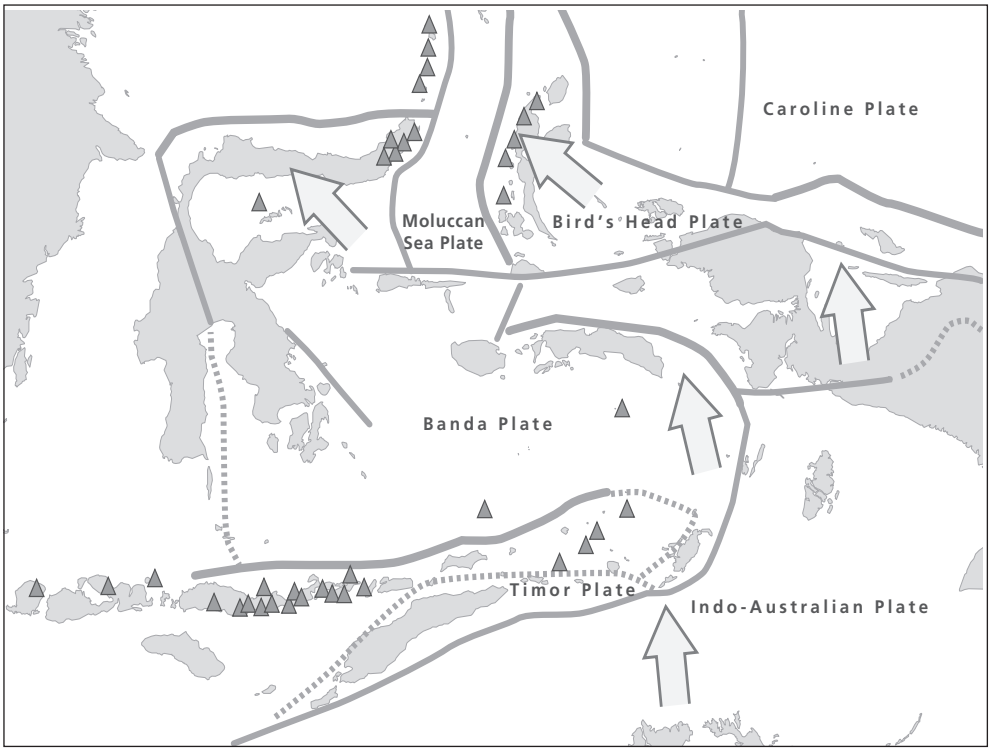
Important to our study are the 'four mountains' of Maluku (i.e. the cone-shaped volcanic islands of Makian, Moti, Ternate, and Tidore). The result of a small subduction zone where the Moluccan Sea Plate disappears beneath Halmahera, they form a string along the west coast of Halmahera. Although its origin is unknown, the name Maluku most likely had a meaning akin to 'mountain.' In its narrowest usage, it denotes the four early modern sultanates of Ternate, Tidore, Jailolo, and Bacan. Tradition has it that the sultans of the latter two sultan

deel, Inleiding, bijlagen en registersgebiedskaarten, illustraties. Amsterdam: Huygens ING (KNAW), 2018. Vol. 1.1, document 186, p. 425.

40 Struys to the Church Council in Ambon, 20 February 1674. In: Niemeijer e.a. eds., *Bronnen betreffende Kerk en School,* 1.1, document 188.

41 Ibid., esp. p. 428. This refers to two passages from Revelation, involving an unprecedented earthquake, specifically, Revelation 11:15-19 and 16:17-21.

42 Rumphius, *De Ambonse eilanden,* p. 17.



Map 1.1 Plates, fault lines and volcanoes of the eastern archipelago.

ates originally resided on the islands of Moti and Makian, meaning that each of the four sultanates is associated with one of the four volcanic islands. The name and notion of Maluku, therefore, are inherently associated with volcanoes.[43]

Many of the larger islands in the region are not primarily volcanic but form part of continental fragments: tectonic pieces that have broken off the Indo-Australian Plate as it submerges beneath Eurasia.[44] These pieces include the Sula and Banggai islands, Timor and Sumba, and, most importantly for our study, much

43 Fraassen, 'Ternate, de Molukken en de Indische archipel', I, 16-27. It should be noted that Company officials often used the term 'Moluccos' simply as a synonym for Ternate, which was the most powerful of the sultanates in the seventeenth century, and the seat of their own governor of the region.

44 Kathryn Monk e.a. *The Ecology of Nusa Tenggara and Maluku*. Oxford: Oxford University Press, 1997, pp. 7-45. For a more recent assessment of plate tectonics as a force of history, and how much work remains to be done in this regard, see Anthony Reid. 'History and Seismology in the Ring of Fire; Punctuating the Indonesian Past.' In , H. Schulte Nordholt and D Henley eds. *Environment, Trade and Society in Southeast Asia; A Longue Durée Perspective*. Leiden: Brill, 2015, pp 62–77.

of Seram, Buru, Ambon, and the surrounding islands. The VOC called this latter region the Amboina Quarter; in this dissertation, I will usually refer to it as the Ambon Islands.

Many islands were formed by a combination of such geological processes, rather than one or the other.[45] The two most obvious examples of this have a very similar irregular shape, a testament to their complex geological history. One is the island of Halmahera, directly to the east of the 'four mountains' of Maluku. The other, which is more central to our study, is Sulawesi, by far the largest island in the region.

Broadly speaking, much of Sulawesi is an amalgamation of various continental fragments broken away from the Indo-Australian Plate.[46] The easternmost part of North Sulawesi, around Manado, was formed by volcanism caused by a subduction zone directly to its east. (In this respect, it is not unlike the volcanos of North Maluku, directly on the other side of the small Moluccan Sea Plate.) The area now called South Sulawesi is a very different story. Originally volcanic, it formed some sixty million years ago on the *Eurasian* Plate, from which it was then cut off as a rift formed, separating the region from what is now Borneo. It then drifted east, eventually colliding with continental fragments from the Indo-Australian Plate to form the present-day island.

The landmass of South Sulawesi is older than much of the rest of the region. The landscape of the peninsula is more settled, especially towards the south. Particularly along the west coast, its central mountain ranges are rimmed with extensive alluvial plains composed of basic and often clayish soils.[47]

This relatively flat, settled, and fertile landscape contrasts sharply with much

45 There are some geological processes that I gloss over, so as not to overcomplicate things. For example, some islands, including Kei and Tanimbar in the far southeast of the present-day province of Maluku, are the result of uplifting and accumulation of lighter marine sediments, which, rather than being dragged down with the oceanic plate, are skimmed off at the subduction zone and settle on its far side. Kathryn Monk e.a. *The Ecology of Nusa Tenggara and Maluku,* pp. 17-19, 39-41.

46 Some such recent insights in R. Hall, M.A. Cottam and M.E.J. Wilson eds. *The SE Asian Gateway: History and Tectonics of the Australia–Asia Collision.* Geological Society of London Special Publication No. 355, 2011.

47 Robert Hall. 'Sundaland and Wallacea: geology, plate tectonics and paleogeography.' In David Gower e.a., *Biotic Evolution and Environmental Change in Southeast Asia.* Cambridge: Cambridge University Press, 2012, pp. 32–78. E.C.J. Mohr. *De bodem der tropen in het algemeen, en die van Nederlandsch-Indië in het bijzonder.* Amsterdam, 1933-1938. Vol II.2 (1935), 269-291.

of the rest of eastern Indonesia, the geological history of which was generally more turbulent and brief. Although this history is still not fully charted, it is clear that as recently as ten million years ago, most of the islands that now make up Maluku did not yet exist. Since that time, many of the islands have emerged from the sea and disappeared beneath the waves again, only to resurface later. In most of the region, this has resulted in land being steep and irregular. As Rumphius said of the Ambon islands:

> A rough, uncivilised and melancholy population inhabits a rough, wild and mountainous land, where one can find everything one associates with true wilderness, such as steep and wooded mountains, terrifying cliffs, deep and dark valleys in which rivers come falling down from high up with a great roar, frightening caves and disorderly and impenetrable scrubland.[48]

As we will see, such environmental characteristics would have a strong bearing on the human ecology of the eastern archipelago's various regions.

Coral, cloves, rice: the environment of the eastern archipelago

The eastern archipelago lies at the heart of the Coral Triangle, some of its reefs harbouring the highest biodiversity anywhere in the world. Today, divers come to the region from far and wide to explore the otherworldly underwater landscape and plethora of wondrous creatures that inhabit it. Even from a boat on the surface, Alfred Russel Wallace was spellbound as he crossed Ambon Bay in December 1859:

> Passing up the harbour, in appearance like a fine river, the clearness of the water afforded me one of the most astonishing and beautiful sights I have ever beheld. The bottom was absolutely hidden by a continuous series of corals, sponges, actiniae, and other marine productions of magnificent dimensions, varied forms, and brilliant colours. The depth varied from about twenty to fifty feet, and the bottom was very uneven, rocks and chasms and little hills and valleys, offering a variety of stations for the growth of these animal forests. In and out among them, moved numbers of blue and red and yellow fishes, spotted and banded and striped in the most striking manner, while great orange or rosy transparent medusa floated along near the surface.

48 Rumphius, *Ambonse Eilanden,* 16.

> It was a sight to gaze at for hours, and no description can do justice to its surpassing beauty and interest. For once, the reality exceeded the most glowing accounts I had ever read of the wonders of a coral sea.[49]

More prosaically, this rich marine life was also an important source of food; shallow-water fishing traditionally provides an important part of the diet of inhabitants of the region.

The reefs also had implications for the practicalities of navigation and warfare. In the Ambon Islands, for instance, the prevalence of reefs just off the coast made shallower and smaller ships the better choice in many circumstances. (The same, we might add, applied when it came to conducting operations in the mangroves that were to be found in many of the region's bays and estuaries.) In the long run, the rich coral life in the sea also left its mark on adjacent landmasses: given that the region is so geologically active, many coastal areas in the islands are composed of coral limestone, even at relatively high elevations. Often, the limestone is still clearly recognisable as a coral reef that had been lifted from the seabed. This was not lost on Rumphius, who dedicated a chapter of his *Rarity Cabinet* to a type of clam shell that was found embedded in the rock throughout the Ambon islands, even at high altitudes. Tantalisingly, he entertained the thought that the frequent earthquakes in the region might have created new mountains from the seabed. Ultimately, however, he concluded this was unlikely and settled for the more traditional explanation that they had been deposited there by the Great Flood.[50]

Maluku's irregular and mountainous landscapes were not well suited to per-

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49 Alfred Russel Wallace. *The Malay Archipelago*. London: Auckland: The Floating Press [orig. 1869], pp. 328-329. Wallace concludes with the remark that '[t]here is perhaps no spot in the world richer in marine productions, corals, shells and fishes, than the harbour of Amboyna.' It should be noted that, one-and-a-half century later, this is certainly no longer the case: little coral remains in the Ambon harbour. More generally, we have lost about half the world's coral reefs over the past decades due to pollution, damage due to (over)fishing including dynamite and cyanide fishing, and climate change. We stand to lose the remaining half in the coming decades. It is an arresting thought that a process which has shaped the islands of Maluku for as long as they have existed, is now under direct threat from human activity.

50 G.E. Rumphius. *D'Amboinsche rariteitkamer, behelzende eene beschryvinge van allerhande zoo weeke als harde schaalvisschen, te weeten raare krabben, kreeften, en diergelyke zeedieren, als mede allerhande hoorntjes en schulpen, die men in d'Amboinsche zee vindt* etc. Amsterdam: Francois Halma, 1705, 134pp.

manent intensive agriculture. Accordingly, the thick forests covering the islands and their coasts were the main source of staple foods. In spite of Rumphius' claims to the contrary cited earlier, these forests should not be thought of as wild and pristine: their human inhabitants have long been moulding them to their needs, constantly reshaping the jungle through their swidden cultivation practices.

Of the trees that grow in these forests, the sago palm or *Metroxylon Sagu* was perhaps the most important to the region's human inhabitants. Indeed, it was the main source of carbohydrates in many areas of Maluku and the Ambon islands. Growing wild in marshes and estuaries, the sago palm stores its energy in its tree trunk in the form of starch. To extract this starch, a tree is cut down and split open, and its 'marrow' removed and beaten into a coarse powder with an adze. This powder is then rinsed to flush the starch out of the tree's woody fibres of the tree, sieved, kneaded, and wrung to remove the excess water. The resulting mass can be kept in large baskets or *tumang* (in which it must be kept moist) and is used to cook a variety of foods, most typically *papeda* or sago porridge. Alternatively, it can be baked into small dry loaves, *lempeng*, which keep extremely well and were therefore the staple of choice for military expeditions.[51] All in all, sago provides a very labour-efficient source of food.

Although sago grows wild in many bays and estuaries, human communities have actively maintained sago forests; some of the waste products of the sago extraction process were left in the marshy jungle, fertilising the soil. Further, shoots were deliberately planted where trees had been cut. They soon developed into new sago trees, which grow to full size in about fifteen years.[52] In addition,

51 Waste products were also used to some purpose, most prominently in building. The dried leaves form the basic material for *atap,* still generally used as roof covering, and the branches were split in two halves and used for walls. Unfortunately, *atap* burns quite easily, and, as we will be seeing, arson became a common weapon in the conflicts that are the topic of this thesis. What could not be used was left in the sago forest and served as fertilizer. Germen Boelens e.a. *Natuur en samenleving van de Molukken.* Utrecht: Landelijk Steunpunt Educatie Molukkers, 2001, pp. 60-61, 156-157; Monk e.a., *Ecology of Nusa Tenggara and Maluku,* pp. 687-690; Knaap, *Kruidnagelen en christenen,* p. 173.

52 The sago tree is most rich in starch by the end of this cycle, just before it blooms, usually after about 15 years, and tends to be cut then. Cutting before the tree blooms and produces seed is not a substantial threat to durable production, as the trees also grow out of underground root systems and, as stated, shoots were planted where trees had been cut. Boelens e.a., *Natuur en samenleving,* pp. 60-61, 156-157; Gerrit Knaap. 'De komst van de kruidnagel: economische geschiedenis van Ambon tot omstreeks

sago trees were introduced into suitable areas where they were not already growing wild.

The sago-rich local diet was supplemented by many other kinds of food, which linked ways of producing food production straddling the border between swidden agriculture and foraging. Typically, a patch of forest was cleared and planted with a combination of crops, including roots such as taro and yam, but also grains such as rice. (Locally, the practice is generally called *ladang* cultivation.) Plants and trees such as banana and coconut were also introduced. Although the root crops exhausted the soil after just a few seasons, the patch continued producing bananas and/or coconuts for up to several decades. In addition, as the forest began overtaking the area once again, the inhabitants took care to plant shoots of kenari, breadfruit, and durian trees, for example. Respectively, these produce a type of nut; what is technically a large fruit but is mostly eaten and cooked as a staple; and the thorny 'king of fruits', famous for its taste and infamous for its smell.[53] The kenari and durian trees in particular become huge, towering jungle trees with impressive buttress roots. Appearances notwithstanding, their prevalence in the forests of Maluku is largely the result of human intervention. In short, when the jungle reclaimed a certain area following a period of cultivation, it became much richer in species useful to humans.[54] Evidence for the history of such subsistence strategies before the early modern period is sparse, particularly in the eastern archipelago. Where it is available, though, archaeological and linguistic evidence indicates that sago and forms of swidden cultivation have been present in eastern Indonesia for millennia. Although the early modern age did see the introduction of some new crops, such as cassava and maize, these were incorporated into existing subsistence strategies.[55]

The clove tree, of singular importance to the conflicts that are the topic of this dissertation, increasingly formed an exception to this pattern. Cloves are the unripe, as yet unopened flower buds of this tree and owe their distinct flavour

1650' in: In: G. Knaap, R. Chauvel & C. van Fraassen eds., *Van Tjengkeh tot kruidnagel.* Amsterdam: Stichting Werkgroep Inheemse Volken, 1987, pp. 3-14.

53 I grudgingly forego Wallace's lyrical description this time, although it is certainly worthwhile: Wallace, *The Malay Archipelago,* pp. 46-47.

54 Boelens e.a., *Natuur en samenleving,* pp. 158-159, 188-193, 216-219.

55 Peter Bellwood. *First Islanders : Prehistory and Human Migration in Island Southeast Asia.* Hoboken: John Wiley and Sons inc., 2017, pp. 276-297; Boelens e.a., *Natuur en samenleving,* 156-159.

Fig 1.1 Cloves on a branch of the clove trees as depicted in a manuscript copy of Rumphius' *Kruid-boek.* B depicts the clove ready for harvesting, just before the flowers blossom. C. shows them in bloom. D. shows the so-called 'moernagelen', literally, mother cloves, which are the fruits (with their seeds) that form if the flower buds are not harvested. Collection Leiden University, BPL 314, part 2, fol. 6a (detail).

primarily to the fact that they are particularly rich in eugenol.[56] The tree produces this substance as a means of defence, for it has strong insecticidal, antiseptic, and antifungal properties. Indeed, eugenol is found in many other plant species,

56 The name for the substance actually derives from the now obsolete Linnean name for the clove tree, *Eugenia caryophyllata*.

including spices such as nutmeg and cinnamon. The clove, however, is the undisputed champion when it comes to eugenol content. Eugenol not only gives cloves their flavour, but is also effective as a preservative and, in large enough amounts, has a painkilling and sedative effect. With good reason, it is the object of much recent pharmaceutical research.[57]

The useful properties of cloves were not lost on their consumers in the early modern age. Myriad beneficial properties were attributed to them – not all of which are borne out by more recent research. One sixteenth century source stated that

> some sprinkle clove powder on the head against headaches due to the common cold. They strengthen the liver, stomach and the heart; they are beneficial in the digestion of food, help the urine along, and stem diarrhoea. They preserve eyesight when put into the eyes. When four drammes [c. 7 grammes] are drunk with milk, they promote the work of Venus.[58]

In his *Kruid-boek*, Rumphius declined to go into the use of cloves in Europe in any detail, but did remark that the Creator apparently made them, not for the 'wild inhabitants' of the eastern archipelago itself, but for the European and northern world. Somewhat confusingly, he then immediately noted that they were also popular throughout Asia, where they were put to various uses and found a ready market.[59] In China, for instance, they were used as an ingredient in various types of incense, and were referred to in documents as far back as the

57 For an accessible synthesis of such research, see D.F. Cortés-Rojas, C.R. de Souza, W.P. Oliveira. 'Clove (Syzygium aromaticum): a precious spice.'in: *Asian Pac J Trop Biomed.* 2014 Feb 4(2): 90-96.

58 Jan Huyghen van Linschoten. *Itinerario, Voyage Ofte Schipvaert van Jan Huygen van Linschoten, Naer Oost Ofte Portugaels Indien : Inhoudende Een Corte Beschryvinge Der Selver Landen Ende Zee-Custen* etc. Amsterdam: Cornelis Claesz, 1596, 90. Van Linschoten attributes the information to his fellow citizen of Enkhuizen, Bernard Paludanus, but he, in turn, was certainly drawing on Cristóbal Acosta. *Tractado de las drogas, y medicinas de las Indias Orientales, con sus plantas debuxadas al bino ...Christoval Acosta.* Burgos: Martín de Victoria, 1578, cap. 3, pp. 32-33, which has the same information. Some of these attributed properties probably owe more to the place of cloves in the Galenic system than to any experience. As cloves were considered to be a 'hot' and 'dry' spice, they were supposed to drive off fluids, and were associated with masculinity and libido.

59 G.E. Rumphius e.a. *Het Amboinsche kruid-boek. Dat is, Beschryving van de meest bekende boomen, heesters, kruiden, land- en water-planten, die men in Amboina, en de omleggende eylanden vind* etc. Amsterdam: Meinard Uytwerf, 1741-1750, vol, II, pp. 7-9.

Han Period (25-220 CE).[60] More generally, there had been a market for cloves in India, the Middle East, and Europe for centuries. The earliest purported (but contested) archaeological discovery of cloves was made at a site in Syria that could be dated to 1721 BCE.[61] Demand for cloves was nothing new, then, but the market for them rapidly expanded with the worldwide economic boom of the late fifteenth and sixteenth centuries.

It would appear that cultivation practices kept pace with increasing demand. Whereas clove trees might have initially grown wild and been gathered in the forest, by the time the first surviving eyewitness accounts were written in the sixteenth century, they had become permanently and systematically cultivated cash crops. As opposed to many of the foodstuffs described above, these trees were grown in dedicated groves. These were interspersed with high trees (usually *kenari*) to provide the light shade that the clove trees preferred, but kept free of other vegetation. The soil in the groves was turned over once a year and kept clear of undergrowth This both optimised the growing conditions and facilitated the harvest, during which many cloves fell to the ground and had to be found and picked up. The harvest in particular was an extremely labour-intensive period, in which the entire crop had to be brought in and processed in short order. Galvao described the harvest in North Maluku in 1544:

> As soon as the clove begins to ripen, they harvest it; for if they let it attain ripeness, it becomes woody and falls without being of any use. The harvesters climb up the trees and take with them a rope and a pole. They throw the rope down, and those who are standing there tie a basket to it, and it is hoisted up. And they fasten it with some cord around their shoulders, and thus it stays on their back. They pick the clove with their hands, breaking the ends

60 Xu, Guanmian, 'Junks to Mare Clausum: China-Maluku Connections in the Spice Wars, 1607–1622', *Itinerario* 44 (2020): 196–225 .

61 Dating was possible because the excavated house was destroyed by a fire, which fortuitously baked some clay tablets in it. One of these mentions the ruling king. The original archaeological report making the claim is Giorgio Buccellati and Marilyn K. Buccellati. 'Terqa: the first eight seasons'. *Annales Archéologiques Arabes Syriennes* 33:2 (1984): 47–67. I thank Peter Lape, Matthew Spriggs and Tom Hoogervorst for an enlightening email correspondence (January 2022) making clear that we should not take this identification of the find at face value. For a general assessment of the consumption and significance of cloves in Asia and Europe before the arrival of the Portuguese in Asia, see R.A. Donkin. *Between East and West the Moluccas and the Traffic in Spices up to the Arrival of Europeans*. Philadelphia: American Philosophical Society, 2003.

> of the boughs bearing it, and throw it into the *saloi* [basket]. Where their hands cannot reach, they substitute the pole for it; and when the basket is filled they send it back down by the rope. They bring it to their houses, and they put it to dry on mats in the sun or on reeds in the smoke as [one does with] chestnuts.[62]

The growing market not only led to more systematic cultivation but also to the spread of cultivation through the region. Having possibility originated specifically in Makian, and present in many of the volcanic islands of North Maluku by the early sixteenth century, it was spreading to Western Seram and the Ambon and Lease islands just as the Portuguese first arrived in the region.[63] As we will explore at length in this dissertation, cloves would end up being a rather mixed blessing for the inhabitants of these regions.

Settlement patterns in Maluku

By the sixteenth century, the populations of Ternate and Tidore tended to live in villages close to the coast, as they were strongly oriented towards seaborne trade in spices, and at the centre of a larger maritime domain. Lore has it that before the Ternaten court moved to Gamalama, directly on the south coast, it was situated at Foramadiahi, a village high up the southern slopes of the volcano.[64] If this story suggests a historical migration down towards the coast as the state formed and turned towards trade and the sea, then the process had already run its course when the Portuguese first described the region. When they arrived, most of the villages were situated directly on the shoreline. Some were sited on

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62 Antonio Galvão[?] (Hubert Jacobs ed.) *A Treatise on the Moluccas (c. 1544) : Probably the Preliminary Version of António Galváo 's Lost Historia Das Molucas.* Rome : Jesuit Historical Institute, 1971*,* pp. 136-139.

63 Rumphius writes that the people of Kambelo, Western Seram, were the first to bring 'mother cloves' (clove seeds, which will form in unharvested flowers) to their region, and soon found that the clove tree thrived there. Hitu soon followed suit. Leitimor and the Lease Islands only followed in the seventeenth century, when the VOC enforced a policy to that effect – see below, chapter II and chapter V, paragraph 'Feigned friends?'. Rumphius, *Kruid-boek,* II, 4.

64 Fraassen, 'Ternate, de Molukken en de Indische archipel'*,* II, 11-12. In 2019, this idea is still generally subscribed to by the inhabitants of the village and by the inhabitants of Ternate at large. The fact that important Sultans such as Baabullah were buried on the slopes above the village, testifies to the significance the village had even in the sixteenth century. Personal communication with my guide Irvan, and the people of the village, March 2019.

slightly higher and more easily defensible positions, but these were usually still very close to the shore.[65]

In the Ambon Islands, settlements tended to be slightly further from the shore. Typically, they were situated on defensible locations uphill, not least to provide some protection against the amphibious headhunting and slaving raids that were the staple of statecraft and the martial culture in the islands. The development of clove production and trade in the region over the course of the sixteenth century did not yet bring around any dramatic change in this regard. Whereas Kambelo and Lesidi, which were probably the first settlements in the Ambon Islands to get involved in clove cultivation and trade, were situated directly on the shoreline by the early seventeenth century, most communities remained further uphill. The landscape provided high and defensible positions that were still relatively close to the shore (often in the form of the elevated coral platforms mentioned earlier). The greater ease in trade and fishing that moving down to the shoreline would have allowed, therefore, would not have been worth the increased exposure to attack, whether posed by old political rivals or new European and Asian interlopers.[66]

A different path: environment and settlement patterns in South Sulawesi

As we have seen, South Sulawesi's landscape and geology differed somewhat from the rest of the eastern archipelago. Its clayish, slightly basic alluvial soils on relatively flat coastal land interspersed with rivers made it very well suited to irrigated rice cultivation. So did its climate, combining enough precipitation with a sufficient dry season to allow the rice to ripen. The development of permanent and irrigated rice cultivation in South Sulawesi is now assumed to date back to the thirteenth century and to have sustained the kingdoms in the region that

65 It seems quite likely, however, that the villages of Ternate had always been near the shore and oriented towards the sea. Areas further inland, both in Ternate and throughout Maluku and the Ambon Islands, were generally considered the domain of the Alfurs, the indigenous population of the region with a distinct ethnicity and culture. The village and town-dwelling population of the coastal regions of Ternate, like, for that matter that of other polities in the region such as Hitu, considered themselves to be later arrivals, as testified by origin stories throughout the region. For more on this, see next chapter. Fraassen, 'Ternate, de Molukken en de Indische archipel', I, 83-84. Ridjali, *Historie van Hitu,* pp. 32-25, 89-103.

66 Knaap, *Kruidnagelen en christenen,* 23-24.

preceded the rise of Gowa-Tallo.[67] As Gowa-Tallo formed and rose in the course of the sixteenth century, wet rice cultivation flourished along the south and west coasts. Both Dutch and Gowan sources testify to the irrigation works that the court initiated. One example of this was in Maros. After being conquered by Gowa's ruler Tunijalloq in the late sixteenth century, the plains were shared out amongst the Gowan nobility, who developed agriculture on them, so that the region 'yearly produced an incredible amount of paddy rice'.[68] The result was so striking that it invariably drew comments from the first Dutch visitors to the region. For instance, in 1607 Paulus van Solt described the area around Makassar as 'a wonderful region for rice, which grows here in abundance, as is easy to see when sailing past the land […] It is a joy to behold, as one hardly sees an area that is uncultivated'.[69]

The large rice surplus that this area produced allowed the population to grow. By the seventeenth century, the coastal regions of South Sulawesi were among the most densely populated areas of the archipelago. Hand in hand with this development, the Bugis and Makasar states in these coastal lowlands started aggregating into larger polities (as will be explored in more detail later). The rice surplus also facilitated urban development: Makassar became an important hub in international overseas trade. Finally, it provided something akin to a cash crop for the people of South Sulawesi: its rice was generally considered to be of supreme quality, and made an excellent trade good to exchange for the spices of Maluku and the Ambon and Banda islands.[70] As the region's economy became more involved in lowland irrigated rice cultivation and international trade, the

67 David Bulbeck and Ian Caldwell. *Land of Iron : the Historical Archaeology of Luwu and the Cenrana Valley : Results of the Origin of Complex Society in South Sulawesi Project (OXIS).* Canberra: Australian National University, 2000, 13-14, 100-107.

68 Speelman, Cornelis Janszoon. *Notitie dienende voor eenen corten tijt en tot nader last van de Hooge Regeeringe op Batavia, tot naarrigtinge van de Onderkoopman Jan van den Oppijnen, bij provisie gesteldt tot Opperhooft en Commandant in 't Casteel Rotterdam, op Maccasser, en van den Capitain Jan Fransz; als hoofd over de Militie, mitsgaders die van den Raadt, anno 1669.* Typed copy, 1949. Collection KITLV Leiden, inv. no. D H 802, vol. I, p. 11. Cummings, *Chain of Kings,* 88, also credits Karaeng Matoaya, the ruler of Tallo (r. 1593 - 1623) with building irrigation works.

69 Isaac Commelin. *Begin ende voortgangh, van de Vereenighde Nederlantsche Geoctroyeerde Oost-Indische Compagnie. : Vervattende de voornaemste reysen, by de inwoonderen der selver provincien derwaerts gedaen* etc. Amsterdam: Jan Jansz., 1646, 12th voyage, p. 82.

70 Reid, *Southeast Asia in the Age of Commerce,* II, pp. 24-25. Campbell Macknight,. 'The Rise of Agriculture in South Sulawesi before 1600.' *Review of Indonesian and Malaysian affairs* Vol. 17 (1983): 92-116.

rulers of Gowa physically moved down to the coast and the capital of Makassar developed right on the shoreline.

Landscape, environment, and the art of not being governed

Thus, by the dawn of the early modern period the region's different environments had given rise to different economies and societies. It might be interesting to consider them in relation to James C. Scott's thought experiment, in which he imagines the landscape that would be most resilient to centralised state power and outside appropriation:

> In place of a flat, relatively frictionless alluvial plain, you would conjure up a rugged landscape where the 'friction of terrain' was forbiddingly high. In place of concentrated grain crops that ripen simultaneously, you would prefer shifting, diverse, dispersed root crops of uneven maturation.[71]

We might start by noting that the coastal areas of South Sulawesi are just the kind of region where one would expect a strong central state. Applying the thought experiment to Maluku and the Ambon and Banda islands is less straightforward. Societies on very small islands would not be shielded from centralised powers by forbidding landscapes and subsistence strategies, particularly if the outside power trying to impose its will disposed of a strong maritime force. This goes especially for insular societies whose economies are highly dependent on overseas trade, such as the Banda Islands or Ternate.

The larger islands in the region, however, have many of the characteristics that Scott associates with resilience in the face of the imposition of state power and outside appropriation. The landscape of much of the Ambon region, for example, was extremely forbidding for outsiders. The subsistence strategies of its inhabitants, with their combination of swidden cultivation and foraging, closely correspond to what Scott calls 'escape agriculture', right down to the staple foods they relied on.[72] Even if these subsistence strategies did not arise specifically to 'escape' centralised power (as Scott contends for his own case studies in uphill mainland Southeast Asia), they frustrated imperialism all the same. As a labour-intensive and marketable cash crop, with a predictable harvest season

71 James C Scott. *The art of not being governed: an anarchist history of upland Southeast Asia*. New Haven, CT: Yale University Press, 2009, p. 178.

72 Scott, *The art of not being governed,* 187-207.

and grown in dedicated groves, the cultivation of cloves was a marked exception. Nevertheless, trying to establish control over the cultivation and trade of even this crop would prove prohibitively difficult.

This was due to the region's long and rugged coastlines, as well as what one Dutch official described as the 'difficult passage through the mountains, and the other unbeaten paths'.[73]

Monsoon islands: navigation, trade and the climate of the eastern archipelago

The climate of all of the eastern archipelago is largely dictated by the monsoon winds. As the Asiatic landmass heats up during the summer in the northern hemisphere, it creates a large low-pressure area, drawing in air from the oceans around it. In the northern hemisphere winter, the Asian landmass cools down severely, and a low-pressure area instead forms over the southern Indian Ocean and, specifically, Australia, as it heats up during the southern hemisphere summer.[74]

As a consequence, during what are the summer months of the northern hemisphere, the wind blows from the south and southeast throughout eastern Indonesia, whereas in the northern hemisphere winter months, they blow from the north to northeast. In practical terms, this means that from Java or south Sulawesi, one could only sail to the Ambon islands from about October to April, whereas returning was only possible from May until September. The route usually took the ships across the Gulf of Bone, through the Buton Strait and then on to Ambon. For the VOC, Ambon sometimes served as a waystation to Banda and Ternate, and the route to these islands was the most monsoon-affected of all the VOC's shipping routes.[75]

The rhythm of the monsoon therefore determined traffic and communication between Maluku and the more westerly regions at every level. It meant that ships from Makassar or Java could only set sail from October onwards. As the

73 Lucasz, 'Sommier verbael…', 23 May 1631, printed in: Knaap ed., *Memories van overgave*, pp. 77-93, esp. 81.

74 For a slightly more elaborate summary, see Monk, *Ecology of Nusa Tenggara and Maluku,* pp. 69-85; Anthony J. Whitten. *The Ecology of Sulawesi.* Hongkong: Periplus Editions, 2002, pp. 21-29.

75 Robert Parthesius. *Dutch Ships in Tropical Waters: the Development of the Dutch East India Company (VOC) Shipping Network in Asia 1595-1660.* Amsterdam: Amsterdam University Press, 2010, pp. 52-54.

Map 1.2 Prevailing winds over the eastern archipelago. The dark arrows below indicate the prevailing winds from c. April to September, while the lighter ones above indicate those from October to March.

cloves in Ambon and Western Seram were also harvested and dried during that period, the dry season in this area, spice traders had an interesting conundrum to figure out: leaving for Maluku in October meant they would have the first pick of the new harvest, but it would have them stuck there until the turning of the monsoon around March.[76] Arriving late would allow them to return more quickly, but might mean they would find the entire harvest already sold.

In the Ambon islands, these dry months therefore saw great activity. As they set in, the monsoon brought traders and armies alike from the west. As the attempts of various powers to control the spice trade became more aggressive in the course of the period studied here, it also became the military campaign season, as

76 Note that this only applies to Western Seram, Ambon and the Lease islands; in North Maluku, the dry season, and with it the clove harvest season, starts about a month earlier. For some comparative climate statistics: Monk e.a., *Geology of Maluku and Nusa Tenggara*, 72-73.

European and Asian powers alike used the dry and relatively disease-free months to secure as large a part of the harvest as possible by any means necessary. As the monsoon turned and the rains set in, ships tended to depart again, and things quieted down until the next dry season.[77]

Concluding remarks

This chapter aimed to familiarize the reader with the region in which the Spice Wars took place, and was largely organised around its physical characteristics, including climate, ecology and geology. As these factors were of crucial importance at every level, from state formation processes and trade patterns to the practicalities of specific campaigns in the course of the spice wars, they will remain a recurrent theme throughout the dissertation. The landscape and environment of the region were a determining factor in their resilience to outside powers. In subsequent chapters, we will explore this in more detail, and see the difficulties that, for instance, Ternate and the VOC experienced when trying to exert such control. As we will see, the latter, in its frustration about its failures in this regard, would ultimately resort to what can only be described as a war with the environment itself.

First, however, we will look at the state formation processes, and the fabric of society, in the region in the sixteenth century, thus exploring not only the physical, but also the political and societal backdrop to the seventeenth century Spice Wars.

77 We see this same rhythm reflected in, for instance, the letters being sent to and from Batavia: the governor-general was able to talk to Ambon, Ternate and Makassar roughly from November to March; the various governors in the eastern archipelago were able to answer from late April to early October. This rhythm is evident in any large body of VOC correspondence; for seeing it at a glance, the tables of contents of Colenbrander, *Bescheiden Coen*, II and VII will serve. Note that Coen experimented in June 1616 with reaching Ternate by using an alternate route, but failed to get his letters through. In a pinch, it was possible to get ships through by taking a long detour north, as Coen did twice in June and July 1620.