Negotiating power and constructing the nation : engineering in Sri Lanka

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Chapter 3

A High-Tech Journey to the Sinhala Past: the Accelerated Mahaweli Development Project (AMDP) (1978-1985)

The Accelerated Mahaweli Development Project (AMDP), is the single largest engineering project ever implemented in Sri Lanka, a classic case study of how technical (i.e. the technical structure of the Project) and non-technical (i.e. individual, group and ethnic politics) aspects of a technological system are blended with each other. By treating technology as a text (and also as a drama[121]), this chapter looks at how different segments of Sri Lankan society make sense of the AMDP and how some of these narratives used to generate meaning, apply a common strategy to mobilise the imagination of Sinhalese to be nostalgic about a glorious past. I have selected two cases to facilitate the discussion further, "Yaan Oya - Malwathu Oya - Maduru Oya Operation" and "North Central Province Canal", the two attempts made to alter the original map of the Project, using them to demonstrate how ethno-nationalist tensions during the 1980s and beyond are linked with the technical design of the AMDP. The AMDP, therefore, is not just a technological object or a site that facilitated mobilizing the imagination of the Sinhala nation on a journey towards the past, it also acted as an instrument to engage with the 'other', Tamils, through exclusion, violation and attack.

3.1 Background

The Accelerated Mahaweli Development Project (AMDP) was the main achievement of J. R. Jayawardene's United National Party (UNP) – a regime that came to power with a landslide victory at the general elections in 1977, and subsequently ruling the island for twelve continuous years. It aimed to optimize use of the water of the longest river in the island, the Mahaweli. "I am going to stake the entire future of the UNP on the successful completion of the Mahaweli Scheme" declared Jayawardene immediately after announcing the project (Peebles 1990, p.43).

[121] Pfaffenberger (1992) called a technology a drama by taking into consideration the antagonistic power politics involved in the process of design, development and use.

3.1.1 Project details

The river Mahaweli is 337 kilometers long and flowed undisturbed and largely unutilised from the mountains of the central hill country till it reached the ocean in the northeastern coastal town of Trincomalee. The AMDP, a project of advanced hydraulic and irrigation engineering, diverted water away from Mahaweli by channeling Mahaweli water through other rivers and tributaries to existing major tanks located in the water scarce dry zone of the country, by constructing a complex web of major reservoirs and trans-basin canals. The tributaries and the tanks fed by Mahaweli water are used to provide water to new settlements established in less populated lands of the dry zone and to supply water to existing settlements that lacked adequate water for cultivation (Cooke 1982). The project area covers about 39% of the whole island or 55% of the dry zone (Planning and Monitoring Unit, Mahaweli Authority of Sri Lanka 2006). Under the AMDP, four major multipurpose reservoirs, Victoria, Kotmale, Randenigala and Maduru Oya, were constructed, between 1979 and 1985/86. The Randenigala Reservoir complex consists of two reservoirs, the main Randenigala reservoir and the Rantambe reservoir just three kilometers downstream, taking the number of reservoirs coming under the AMDP to five[122]. The dams of all five reservoirs belong to the category of "big dams" of the world, designed to bear the pressure exerted by millions of cubic meters of water. While the tallest dam of the Victoria reservoir was of concrete arch type, the dams of Kotmale, Randenigala and Maduru Oya were built using rockfill technology. The Rantambe dam is gravity concrete type (Cooke 1982). Apart from providing irrigation water, the generation of electricity is the second main purpose of the AMDP. Power stations attached to Victoria, Kotmale, Randenigala and Rantambe injected a drastic boost to the capacity of electricity generation by adding 523MWs to the national electricity grid so far[123] (Gunasekara 2011). Thousands of families were settled in the new settlements declared open under the AMDP which were named "systems", differentiated from each other by single English letters. Systems C, B, D and G fall exclusively under the AMDP (Cooke 1982). The management of Udawalawe and System L were also handed over to the Mahaweli Authority in 1982 and 1987 respectively (Planning and Monitoring Unit, Mahaweli Authority of Sri Lanka 2006). The area cultivated under the AMDP includes 156,000 acres of existing land and 406,500 acres of new land, amounting to a total of 563,400 acres (Fernando 2000).

[122] Mahaweli Ganga, a publication by the Ministry of Land, Irrigation and Mahaweli Development, identifies the five major reservoirs described above, along with Ulhitiya and Ratkinda single purpose reservoirs, Minipe Anicut and the trans-basin canal and the Mahaweli Raja Mawatha, the highway connecting Kandy and Badulla as the main components of the AMDP (Ministry of Land, Irrigation and Mahaweli Development 1992, p. 30).

[123] According to the original plans of the AMDP, the second stage of Victoria power generation is expected to add a further capacity of 210MWs in addition to the 7.5MWs expected from Maduru Oya, which is yet to be constructed and commissioned.

New towns were built. Hospitals, schools, banks, markets, libraries, government offices and bus stands were constructed to provide essential services to the people of the new 'colonies'. A web of newly built main and sub roads connected Mahaweli settlements with each other and with the outside world. In summary, the AMDP is a mega engineering project involving multiple fields of expertise such as civil engineering, irrigation engineering, electrical engineering, geological and mining engineering, mechanical engineering, quantity surveying, etc.

3.1.2 A technological icon of national pride

As a scheme of massive infrastructure development the island had never witnessed before, the Accelerated Mahaweli Development Project was hailed by the J. R. Jayawardene government as a source of pride for Sri Lankans (Peebles 1990). Described as Sri Lanka's "core development project", the AMDP was presented as the way to emerge as a powerful nation in the Asian region, agriculturally self-sufficient and industrially developed (Tennekoon 1988). In contrast to the Aberdeen - Laxapana Hydro Electric Scheme that didn't receive the blessings of the Ceylonese State and the elite of Ceylonese society, the AMDP with full state sponsorship and advertised across the island with images of large dams, massive reservoirs, power stations and emerging settlements became the symbol of hope and prosperity of a new Sri Lankan state. The AMDP can comfortably be placed as the Sri Lankan equivalent of a series of modern engineering works that were flagged as objects of national pride in the literature on technology and national identities. Such works, objects of scholarly investigation and constructed over a time span of a few centuries and spread across the world, include the Port of Lisbon of Portugal (second half of the nineteenth century), the Eiffel Tower of France (late nineteenth century), the Firth of the Forth Railway bridge of Scotland (late nineteenth century), the Gotthard Railway of Switzerland (late nineteenth century), the electricity and railroad network of Russia (early twentieth century), the World War I Fighter Planes of Germany, the Sputnik Spacecraft of Soviet Union (1961), the Apollo Spacecraft of the USA (1969), the Palapa Satellite and the steel plant in Cilegon of Indonesia (late twentieth century), to name a few[124]. A discussion on the AMDP as a grand engineering intervention and how it relates to

[124] Canal du Midi (1660s-1680s), a major achievement of infrastructure engineering in the seventeenth century, is the object of discussion by Mukerji (2009) on infrastructure and national identity of French in their campaign to make France a New Rome. In a discussion on technological traditions and the national identities, Picon (2000) identifies the late nineteenth century great engineering works such as the Eiffel Tower of France, Firth and the Forth Bridge of Scotland and the Brooklyn Bridge of New York as objects of national pride. For Saraiva (2007) Port of Lisbon, Oporto's Crystal Palace, the Lisbon Railway Station, the Bethlehem Tower, the Railway network, the new Water Factory and the Polytechnic School were the symbols of a nineteenth century Portuguese technological nation. According to Bocquet (2007), rivers and ports constructed between 1860 and 1900 were the subject of special attention, as part of a great national project in Italy. In a discussion on nationalist narratives and space exploration Siddiqi (2010) refers to a range of artefacts that became national symbols and prestige objects signalling international leadership in variety of engineering disciplines such as the electricity network and the modernised railroads of

the mobilisation of nationalism in the island however, calls us to position the Project in a broader socio-political context.

3.1.3 From a thirty year plan to a six year accelerated plan

The history of Mahaweli development and the idea of diverting water to the dry zone, in fact, goes back to the 1950s, when a joint study conducted during 1958-62 by the United States Operation Mission (as USAID was then known) and the Irrigation department of Ceylon proposed the diversion of Mahaweli to supply water to lands in the North Central Province and to produce electricity with an installed capacity of 260MWs. However, a grand detailed plan to divert Mahaweli water emerged later in 1969 after another four year study was conducted, this time by a team of UNDP and FAO specialists with their Sri Lankan counterparts[125]. The report "Mahaweli Ganga Irrigation and Hydropower Survey: Ceylon", which was popularly known as the "Master Plan" came up with a thirty year plan to divert Mahaweli water in three phases that could be implemented stepwise[126]. Phase I included the diversion of Mahaweli water by constructing a dam at Polgolla and channeling that water to ancient tanks located on the southern borders of the North Central Province and the construction of reservoirs at Victoria, Ulhitiya and Ratkinda. Construction of the Moragahakanda multipurpose reservoir was part of Phase I of the Master Plan. Construction of the Maduru Oya and Randenigala reservoirs belonged to the Phase II of the thirty year Plan. After meeting the irrigation demand in Phase I and II, it was recommended that surplus water be diverted to the North Central and Northern parts of the island in Phase III through a canal called the North Central Province (NCP) canal (Food and Agriculture Organisation of the United Nations 1969; Ministry of Land, Irrigation ad Mahaweli Development 1992). The Master Plan, expected to be implemented from 1970 to 2000, envisages agricultural development of 900,000 acres of land under

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Lenin's Russia, World War I Fighter Planes of Germany, the Sputnik Spacecraft of the Soviet Union (1961) and the Apollo Spacecraft of the USA (1969). Based on the work of Hecht and Callon (2009[1998]) on nuclear power and the national identity of France (after World War II), Schueler (2008) relates the building and running of the Gotthard Railway with the changing conception of Swiss national identity (late nineteenth century) (Elsasser 2009). Barnes Wallis' mid twentieth century designs for supersonic swing-wing aircrafts and merchant cargo-carrying submarines that were supposed to resurrect the fallen glory of England were the object of discussion by Zaidi (2008). While discussing the Palapa Satellite (1960s-1970s) as a celebrated and an exemplary national achievement of Indonesia, Barker (2005) also lists exceptional developmental projects during the New Order that were meant to promote a sense of nationalism; the first toll road, Jakarta's Thamrin Boulevard and its strip of high-rises, large dams, Taman Mini and the national aircraft industry. The steel plant in Cilegon (1950-1975) by Moon (2009) and the National Airplane project (1980s-1990s) by Amir (2007) provide two more recent examples of technological systems from Indonesia that were presented as symbols of national pride.

[125] The fieldwork for the Survey was carried out over a period of three years in two stages, the final stage was executed between March 1965 and February 1967, and the second stage from February 1967 to May 1968 (Food and Agriculture Organisation of the United Nations 1969).

[126] Details of this work were first published in April 1968 in Ad Hoc Report No. FAO/SF: CEY 7. Final Report published in 1969 had three volumes - Volume I (General Report), Volume II (Feasibility Report for Phase I of Development) and Volume III (Organisational and Management Requirements) (Food and Agriculture Organisation of the United Nations 1969).

thirteen irrigation schemes designated "A" to "M" and installation of electricity generation capacity of 507 megawatts. The Central, Uva, North Central, Eastern and Northern Provinces were to receive water from the Mahaweli, covering forty percent of the land area of the entire island (Iriyagolla 1978; Cooke 1982). The left-wing United Front government led by Sirimavo Bandaranaike that came to power in 1970 initiated the implementation of Phase I of the thirty year Master Plan[127], after the brief inauguration by Dudley Senanayake's government in 1970[128], but lost power at the general elections the same year (Mahaweli Authority of Sri Lanka 1985). The Polgolla diversion was completed in 1976. Settlement in System H was underway (Peebles 1990).

It is against this background that the new UNP government elected at the 1977 General Elections decided to accelerate the thirty year long Mahaweli development programme. The AMDP earned its title "accelerated" when the J. R. Jayawardene regime decided to complete the thirty year Master Plan in six years[129]. The AMDP undertook several projects simultaneously which were to construct sequentially under the Master Plan. However, the project that was implemented under the AMDP was a scaled down version of the Master Plan, and omitted some of the important sections in the previous plan. Construction of Moragahakanda reservoir was abandoned, along with its linked canal, the North Central Province (NCP) canal. Of the Systems A-M designated in the Master Plan, only Systems A, B, C, D, G and H came under the AMDP. The Ministry of Land, Irrigation and Mahaweli development (1992) describes the basis on which the scaling down of the Master Plan was done. In comparison to the Master Plan which emphasised supplying water for irrigation, the focus of the AMDP was on producing electricity and controlling floods. The NCP canal, according to Ministry of Land, Irrigation and Mahaweli development (1992), was incapable of producing a return on investment on the above basis (p.27).

[127] Maithripala Senanayake led the process as the Minister of Irrigation, Power and Highways (Fernando 2000).
[128] C. P. De Silva was the Minister of Land, Irrigation and Power of the Dudley Senanayake government (Fernando 2000).
[129] The announcement that was made in September 1977, soon after the J. R. Jayawardene government came to power, was unexpected, according to Iriyagolla (1978). Interviews I held with former officials of the Central Engineering Consultancy Bureau (CECB) revealed one plausible reason for the decision to accelerate. It was a result of the demand immediately after the election by "all camps who wanted their project as priority" that led Jayawardene to decide to "do everything together". The pressure for prioritisation had come from local politicians, according to the source of information. The government displayed urgency even during the process of initiation. Responding to the question raised at the debate on the Second Reading of the Appropriation Bill for 1979 of inquiring into the wisdom of starting work even before the feasibility reports were received, Prime Minister Jayawardene added, "although the reservoir is planned and the feasibility report is being prepared, you know where the reservoir is going to be. So why not cut canals?". While referring to the series of questions asked in return by the respective member of the parliament, "where to? To irrigate what lands, to grow what crops, using what quantities of water?" Iriyagolla (1978) adds another, "at what cost?".

3.1.4 'Truly non - Sri Lankan'

Maithripala Senanayake, who was the Minister of Irrigation, Power and Highways of the Sirimavo Bandaranaike government under whom the first Phase of the Master Plan was launched, highlighted another important difference between the AMDP and Phase I of the Master Plan that was implemented during 1970-76. Sending a message in 1984 to the publication "Glimpses of Mahaweli" published by the Ministry of Mahaweli Development, he declared that the work completed during 1972-76 "was done without any fuss and high-powered propaganda, using 99.9% of Sri Lankan engineers, Sri Lankan consultants, Sri Lankan technicians, Sri Lankan skilled workmen and Sri Lankan work force" (Peiris 1984, p.39). Even though the services of foreign firms were obtained (such as for the construction of tunnels, undertaken by Ingra of Yugoslavia) the policy of the government was to use local expertise as far as possible, mobilising experienced local construction agencies like the River Valleys Development Board (RVDB), the Mahaweli Development Board (MDB), the Ceylon Development Engineers (CDE) and other local contractors[130] (Fernando 2000). Though a work of advanced engineering, the AMDP could not announce itself as a marvel of Sri Lankan engineering, because it depended almost entirely on foreign engineers, foreign technicians and foreign machinery. Feasibility studies were conducted by foreign consultants. Foreign construction firms constructed reservoirs, power stations, canals and main infrastructure for settlements with foreign funding received as loans or grants. The World Bank coordinated foreign finances required for the AMDP by holding special sessions at the Annual Aid Group Meetings by exclusively discussing the Accelerated Programme. Countries such as Sweden, UK, Canada, West Germany, USA, Saudi Arabia, Japan, European Economic Community, Kuwait, OPEC, Netherlands, Australia, Belgium, India and China[131], International Financial Institutions such as IDA, IBRD and ADB and UN organisations such as UNDP, UNFPA, UNTCDC, UNICEF and WFP all provided funding as loans and grants (Ministry of Land, Irrigation and Mahaweli Development 1982). The United Kingdom funded the Victoria Project and the bulk of assistance arrived as a grant. British companies Balfour Beatty and Edmund Nutt'all constructed the dam and tunnel as a joint venture while, another British company Costain International Ltd. was involved in the construction of the power station. European industrial giants such as Whessoe Boving, Boving and Co. Ltd., Hawker Siddley, BICC, Nei Reyrolle Ltd., Eve Construction Ltd., Herbert Morris Ltd., and GEC Electrical Project Ltd. were also involved at different

[130] By forwarding a critique on the approach of relying entirely on "local talent", Iriyagolla (1978) observes that the services of foreign consultants were called back when work done by locals encountered difficulties.

[131] Fernando (2000) provides a breakdown of project finances: NEDECO of Netherlands (implementation strategy), WAPCOS of India (Kotmale Project feasibility studies), JAICA of Japan (Moragahakanda Project, System C), SIDA of Sweden (Kotmale Project), ODA of UK (Victoria Project), CIDA of Canada (Maduru Oya Project), KFW of the Federal Republic of Germany (Randenigala and Rantambe Projects), and USAID of USA (System H, environmental study).

stages of construction. The consulting engineering company for the project was the British firm Sir Alexander Gibbs & Partners in association with Preece, Cardew and Rider[132]. The Swiss firm Losinger AG, who had wide experience in construction of arch dams, was the adviser to Balfour Beatty and Edmund Nutt'all. The Kotmale project which was financed comprehensively by a grant from the Swedish government, was constructed by the Swedish company Skanksa Cementgjuteriet. Two British companies, Sir William Halcrow and Partners and Kennedy & Donkin provided consultancy services. The Swedish company ASEA carried out the construction of the power station. Maduru Oya, funded by a loan from the Canadian government, had Canadian companies FAFJ and Crippen International respectively for construction and consultancy services. West Germany provided a loan for the construction of the Randenigala reservoir. Consultancy services were provided as a joint venture by the German companies Saltzgitter Consult GmbH, Electrowatt Engineering Services, Ahar and Hydrotechnik (Cooke 1982; Mahaweli Authority of Sri Lanka 1985).

The story of the AMDP as narrated in the sphere of engineering literature provides lengthy details of the reservoirs, power stations, maps of "water issue trees"; including information about the consultancy firms and construction companies involved from the stage of conducting feasibility studies to actual implementation, and details on the sources of funding that made each stage possible. It is the narrative of the AMDP as a great work of modern engineering, with an occasional reference to the ancient glory of irrigation engineering of the Sinhalese. Cooke (1982) while providing a detailed technical description of the AMDP refers to the discovery of the sluice of the ancient tank located almost at the exact location of the proposed sluice of the modern reservoir, at the site of the Maduru Oya (p. 42)[133]. Fernando (2000) too, refers to "the unique sluices that were developed by our ancients and were found in all major reservoirs"[134]. This occasional reference is included as evidence of the advanced status of ancient irrigation engineering and also to highlight the point that the knowledge of engineering that lay behind these ancient constructions was as advanced as modern engineering. Though occasional, these

[132] Interestingly, Preece, Cardew and Rider was the same consulting firm that provided consultancy services for the Aberdeen-Laxapana Hydro Electric Scheme, and whose role was questioned by the local members of the Sub Committee appointed by the Legislative Council.

[133] Under the title "Ancient *Bisokotuwa* [sluice]" Cooke describes that "it is built out of brickwork and has two conduits almost in the same alignment as the new sluice. In order to preserve this ancient structure, the new sluice channel is being deviated and taken through a tunnel, without disturbing the old *Bisokotuwa*".

[134] It was Fernando himself, who discovered and recorded the ancient sluice of the Maduru Oya dam in 1982. "But before that", says Fernando, "several ancient sluices were discovered and recorded at first hand for posterity by renowned pioneers and scholars in the course of field investigations, by Dr. John Davy (1812), Sir Emmerson Tennent (1845), Henry Parker (1890) and R. L. Brohier (1933)" (Fernando 2000).

references play an important role in regaining pride in Sri Lankan engineering, in the technical narrative of the AMDP, otherwise written almost entirely by foreigners.

An investigation into how the AMDP appeared in the Sinhala nationalist narrative in general, however, demands a more detailed treatment of the relationship between the two terrains of engineering and nationalism. Developmental nationalism, the discursive space used in discussing the link between Aberdeen - Laxapana Hydro Electric Scheme and the Ceylonese developmental nation, doesn't fit well with the AMDP. The popular discourse generated by the government propaganda machine with the AMDP at the centre was not really about the mobilisation of the imagination of the island's population towards a modern Sri Lankan nation, as was the case with the Hydro Electric Scheme. The AMDP therefore differs from most of the grand technological works mentioned above, which remained symbols of the national pride of modern nations across the globe. Most of them mark a break from the pre-modern past and instead, visualise a fresh modern future. The heavy dependency of the AMDP on foreign expertise and resources has also prevented a straightforward claim by the Sinhalese of ownership of the project. What then were the strategies used to establish the link between the two terrains of engineering and nationalism? Is the AMDP an exception or does it still share commonalities with at least some of the case studies of technological systems that appear in the literature on technology and national identity? What kind of politics were at play in shaping the AMDP into its final form during the last century and how has the AMDP affected politics in return and nationalist politics in particular? A general discussion on the politics of artefacts and technological systems seems to provide an entry towards answering some of these questions.

3.2 Multiple faces of the AMDP

As has been the case with many other water engineering projects in the world, the AMDP too was a site of power politics, nationalist in particular. Conducting a comparative study on anicuts and tanks in India, dikes and storm surge barriers in the Netherlands and levees in New Orleans in the United States, Bijker (2007) concludes that the water-related technological systems under discussion are thick in connections and linkages, thick with values, thick with power and thick with politics. The Narmada Dam in India, a project I would like to compare with the AMDP in relation to their inherent technical complexity, is considered by Bijker as "too thick" (with politics) for him to deal with in a single paper as his one on "Dikes and Dams, Thick with Politics". The politics of technology, how technology shapes politics and how politics impacts technology in return is a long held debate. Since its symbolic inception with the

publication of the article "Do Artefacts have Politics" by Langdon Winner (1980) the debate has evolved in two directions. It has, on the one hand, broadened its coverage from the micro world of technological artefacts to the macro world of technological systems and technological spaces such as cities, public spaces, markets, water works, etc. (Matthewman 2011, p. 101). The Sri Lankan irrigation network, the site of modern water engineering itself, was treated by Pfaffenberger (1992) as a "technological drama", by taking into consideration the antagonistic power politics involved in the process. The understanding that technology is not just technical but institutional, social, economic and political has made technological system the fundamental unit of analysis, irrespective of whether the system under consideration is a simple technical arrangement (i.e. technological artefact) or a complex one (Bijker 2010). The debate that has evolved has also attempted on the other hand, to describe in detail how technology becomes an expression of power and politics. Machines, structures and systems of modern material culture are seen within this discourse as accurately judged not for their contributions of efficiency and productivity, but for the ways in which they can embody specific forms of power and authority (Winner 1980; 1993a). By taking examples of technological applications Winner (1980) describes the two ways in which technologies can be involved with politics: either the technical device or the system becomes a tool to settle a political issue in a particular community (e.g. low-hanging overpasses built over the parkways on Long Island by Robert Moses, the Master Builder of roads, parks, bridges and other public works from the 1920s to the 1970s in New York) or, by moving a step further, contains politics as an inseparable element of technology within a given context (e.g. oil, coal and nuclear power energy technologies and atomic bomb). In which way is the AMDP, as a project that falls easily into Bijker's categorisation of water technologies "thick with politics", involved with politics? Was it a tool to settle a nationalist issue of the island? Or was Sinhala nationalism an inseparable element of the AMDP? Winner's initial argument and the subsequent debate that evolved provide an alternative discursive space to examine the AMDP and to revisit some of the ideas discussed and debated within the discourse on the politics of artefacts and technological systems.

In the following sections I would like to briefly look at five attempts that have been made so far to make sense of the AMDP so that this discussion on the politics of the AMDP, especially in relation to nationalism, can be conducted further. I would like to add the *Mahaweli Vansaya*, the Chronicle of Mahaweli that was written in parallel to the implementation of the AMDP in the 1980s but which has not received adequate scholarly attention as yet, as the sixth case in broadening the above mentioned discussion. The said discussion will also be a comparative analysis of the AMDP with other engineering interventions in the world which became national symbols. The seventh and the eighth cases, "Yaan

Oya - Malwathu Oya - Maduru Oya Operation" (an unsuccessful and less discussed operation executed at the premises of the Central Engineering Consultancy Bureau, Sri Lanka to change the AMDP map) and "North-Central Province Canal" (the key element of the Master Plan that was included in and excluded from the AMDP at various times, indicating "thick politics" expressed in terms of engineering) would broaden the discussion further to incorporate the role of engineers in mediating technology with nationalism.

The five attempts, with narratives already established and with appeal to different segments of the Sri Lankan society, can be seen to provide a textual ground to lay the technical sketch of the AMDP, which consists of a complex web of dams, reservoirs, canal, power stations, roads and cities, allowing meaning to emerge from an otherwise meaningless skeleton made out of cement, sand, metals, tar, etc. Within the context of our discussion, these narratives describe the political function of the technological system, the AMDP. Treating technology as a narrative or discourse was dealt by different scholars under different titles. While Woolger used the term "text", Pfaffenberger preferred the word "drama" (Matthewman 2011, p. 80). The five narratives introduced below can be read as different interpretations of "the AMDP text" according to Woolgar (1991), or as a collection of dominant texts and remedial responses of the technological drama, the AMDP, according to Pfaffenberger (1992).

3.2.1 Narrative 1: As a modern mega development project dressed up as an attempt to reclaim indigenous national culture

The AMDP is perceived in general as a mega development project. Through the functions of irrigation and generation of electricity, it was designed to generate employment, bring economic benefits, ensure food security in the island and boost industrial development through a policy of economic openness. The narrative constructed by the government in the public sphere however, did not highlight this liberal economic vision which cemented the conditions of modernity, a vision that also marked a clear departure from the left-oriented economic model followed by the previous, United Front government. In contrast, the AMDP, according to this narrative, is a scheme that was implemented to achieve contradictory objectives[135]. While establishing the material conditions of modernity in the island by

[135] "Mahaweli: A Moving Story", a booklet with photographs published by the Mahaweli Authority of Sri Lanka to mark the ceremonial commissioning of the Victoria reservoir on the 12th April 1985, provides a good example to illustrate this duality. The booklet carries a series of photographs: President Jayawardene in national attire, an aerial view of the Mahiyangana pagoda surrounded by dry zone forest, a painting of D. S. Senanayake by Stanley Abesinghe, an aerial view of *Gal Vihare* statuary, Polonnaruwa, Dimbulagala ruins - System B, the restored pagoda in Somawathiya (white washed) with a tank nearby, people moving out to System C in lorries carrying furniture and sewing machines, hopeful settlers in temporary cadjan-huts, ancient statuette and old brickwork unearthed in Girandurukotte, sculpture discovered in an ancient sluice way, Maduru Oya, a

privileging "science and technology and a centralised state bureaucracy" and incorporating "agro-industrial production and distribution into a capitalist market-economy" on the one hand, the AMDP served, on the other hand, to reincarnate the "ancient, indigenous, national culture whose features are ethnic (Sinhala) and religious (Buddhist)" (Tennekoon 1988, p. 297). 'Dressing up of modernity', essentially a project derived from the West and hence a scheme alien at best or antithetical at worst to the indigenous culture, as an exercise that upheld the tradition of indigenous national culture, was mediated by the heavy use of rituals of development. By taking the case of ritual practice at the site of AMDP, the *Jala puja* (water offering ceremony) performed along with the commissioning of the Kotmale reservoir, Tennekoon argues how a modern present was dressed up as traditional past to metamorphose market-oriented technologically advanced infrastructure development not as a movement towards the future but as a journey to the Sinhala past, to reclaim the past glory of the ancient hydraulic culture of the Sinhalese (Ibid)[136]. The *jala puja* serves as a continuation of an ancient tradition, bridging the present with the past. The selection of sites that are of significance to Sinhala-Buddhists reinforced the image of the AMDP as a project exclusively for the members of the majority community [137] (p. 298). The AMDP therefore, with the mediation of rituals of development derives legitimacy from the Sinhala Buddhist constituency by masking modernisation as a visit to the imagined glorious past of the Sinhala nation. The narrative represents the general understanding of the AMDP by

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kiln found in Girandurukotte, construction worksites (Victoria dam, Victoria penstocks and turbines, high tension lines from Victoria to Kotmale, the switchyard in Victoria power station), young minister Gamini Dissanayake in a white collarless shirt with a glass of artificial fruit juice in his hand, smiling settlers in new clothes with the new harvest, members of a family engaged in farming, aerial view of giant constructions of Polgolla barrage, Bowatenna dam, Ulhitiya reservoir and Maduru Oya dam, a close view of Victoria and Kotmale dams under construction, Bambaragala cave monastery, emerging new town of Girandurukotte and an elephant leaving Teldeniya town submerged by Victoria water, Buddhist centre under construction in Girandurukotte with an isolated misty mountain in the background, peasants with hopeful looks and children attending new schools in new settlements. The photograph of a close view of Ruwanweli pagoda carries the following caption; "The government of Dudley Senanayake made a vow in 1970 when the Mahaweli Development Project was inaugurated that the Ruwanweli Seya will be illuminated by flood lights on the successful completion of the programme. On the 4th April 1985 the Hon. Minister of Lands, Land Development and Mahaweli Development fulfilled the vow by illuminating the Ruwanweli Seya to mark the ceremonial commissioning of the Victoria Project - the biggest power source within the Mahaweli System and the centre-piece of its irrigation network" (Mahaweli Authority of Sri Lanka 1985).

[136] Tennekoon identifies development not just as production and distribution of material benefits, but also as a discourse that was constructed using different tools such as political speeches, national and international conferences and meetings, local media coverage, advertisements of events, documentaries and feature films, opening ceremonies, exhibitions, carnivals, concerts and rituals (Tennekoon 1988, p. 295). *Jala puja*, a ritual of development, reminding people of the tradition of offering water for good luck, dispatched water taken from the Kotmale reservoir in separate processions to be offered at holy sites. "The processions of Kotmale water, in particular, and the Mahavali Program, in general, conveyed symbolically the Mahavali Program throughout the "length and Breadth" of the country", argued Tennekoon (p. 298). Processions that ended significantly inland from the eastern and northern boundaries of the country (compared to the final destinations of the westbound and the southbound processions) also highlighted the parameters of the shrinking Sinhala Buddhist state as a result of the emerging militancy of the Tamil separatist movements at that time, according to Tennekoon (p. 299).

[137] "Two pots were conveyed to the Dalada Maligava, the Temple of Tooth Relic of the Buddha and the remaining twenty eight pots were taken in the north, south, east and west directions. The northbound procession headed for the Sri Maha Bodhi - the sacred Bo tree - at Anuradhapura, the southbound for the Kiri Vehera at Kataragama, the westbound procession for the Kelani Vehera near Colombo and the eastbound one for the Mahiyangana Vehera", according to Tennekoon (1988, p. 298).

a section of intellectuals and academics who in particular entertain a critique of Sinhala nationalist rhetoric.

3.2.2 Narrative 2: As an indigenous development project

If Tennekoon identifies rituals of development as a tool that facilitated a journey of the Sinhala nation towards an (imagined) past and helped metamorphosise modernisation as tradition, Hennayake (2006), by introducing a category "indigenous development" makes the agriculturally and spiritually developed past a living experience, a reality. By deviating from the trend of treating the notion of glorious past as a myth, the memorable past is made here a "lived reality" for the Sinhalese (p. 52). "Discourse of development in any society is constitutive of competing conceptions of development - which simultaneously could be contradictory, complementary, and even collaborative at times", says Hennayake (p. 2). The Sri Lankan discourse of development, according to this narrative, is shaped by three competing versions; capitalist, socialist and indigenous, of which the indigenous version has been in the forefront in the process of conceptualising (p. 47). Clarifying further, the indigenous discourse of development is said to be formed by the intertexuality of three texts; Sinhala-Buddhist ideology (i.e. the understanding that Sinhala-Buddhists are a distinct group with a distinct history and a legitimate right to the island), the notion of a glorious past and the Buddhist theory of development, which refers not only to material wellbeing, but to spiritual and cultural wellbeing as well (pp. 48, 56). The notion of a glorious past, the image of the hydraulic civilisation of ancient times is represented by grand irrigation schemes, self-sufficient villages and righteous governance (a society with higher morality) with the dry zone as the heartland of Sinhalese civilisation and peasantry as its backbone (pp. 50, 51, 55, 65, 103). The AMDP, or rather the image of AMDP constructed by the government in the public sphere, fits tightly with the framework of a glorious past[138] and the model of indigenous development[139] formulated in the above narrative. The modern mission of the AMDP, economic growth to be achieved though liberal economic policy, is argued as a mere "means" of the larger aim; the rebuilding of the society with higher morality as that of the "glorious past", notes Hennayake, by referring to the conscious effort made by the state to redefine development within an indigenous framework (p. 103). Though influenced heavily by Sinhala Buddhism in its conceptualisation, indigenous development is portrayed as an appropriate development

[138] The AMDP, in fact, was a grand irrigation scheme that provided water for irrigation to peasantry living in isolated *purana* villages as well as those settled in new colonies of the dry zone, the heartland of the Sinhalese.

[139] *Dharmista Samajaya* (righteous society), the rhetoric the UNP regime propagated at the time as a fundamental guideline in governance, was about the spiritual and cultural wellbeing of the nation.

model that serves the interests of all ethnic and religious communities[140]. Dry zone development, the focus of the AMDP, is awarded legitimacy within the context of this discourse by identifying it as a key priority of the postcolonial state for two reasons. It was demanded on the one hand, by the practical necessity to improve the institutional and the infrastructural conditions of the dry zone and on the other, by the ideological need to resurrect the lost glory of an ancient culture after colonial rule ended[141] (p. 108). Seeing the AMDP as an indigenous development project is more or less the narrative propagated by the Jayawardene regime and received well by the public in the late nineteen seventies. The early nineteen eighties proposal by Sinhala nationalists to designate the ancient kingdom of Anuradhapura as the capital of Sri Lanka emerged out of this narrative on indigenous holistic development. The narrative is still held as valid by those who are in favour of a development model based on dry zone agricultural development.

3.2.3 Narrative 3: As a project to promote the image of Gamini Dissanayake

The AMDP is also highlighted as a personal political project of the then Minister of Lands, Land Development and Mahaweli Development, Gamini Dissanayake[142]. Numerous advocacy material released by the Ministry carried photographs of Minister Dissanayake often dressed in white (in national attire or in suits) and wearing a pair of sunglasses while on tours of inspection and at opening ceremonies. The Project, according to this narrative, served two objectives that were not addressed in the narratives discussed above: to promote the political image of Dissanayake and strengthen his vote base within the island in general and among peasants, in particular. The success of Dissanayake's political journey of to the top, and of his ambition to become the leader of the UNP and eventually the head of state as the president, was dependent entirely on the success of the AMDP. The competition was with other contenders, the second level leadership of the J. R. Jayawardene regime, who had their

[140] The conception of the AMDP as a scheme of reclaiming the traditional heartland of Sinhalese is argued by Hennayake more as a rhetoric used for political legitimacy (p. 107).

[141] The idea of dry zone development and hence the AMDP as a need of the Sri Lankan state that transcends interests of a particular community is further clarified when Hennayake says that "material necessity for development of the dry zone itself has been often overlooked as a compelling reason to rebuild the dry zone as a result of Sri Lankan Social Sciences being overtly ethnicised by reading every aspect and change in the society as a "nationalist conspiracy" of the Sinhala Buddhists especially after 1983" (p. 108).

[142] The credit of initiating the diversion of Mahaweli River was claimed by many. Iriyagolla (1978) lists down eleven claims made by partisans as to who originated the idea: (i) D. S. Senanayake by restoring the Minipe anicut in the early 1940s. (ii) S. W. R. D. Bandaranaike by negotiating with the United States Operation Mission (U.S.O.M) in 1957. (iii) C. P. De Silva by negotiating with the U.S.O.M. in 1957 (iv) Dudley Senanayake by commissioning investigations for a dam at Randenigala in the period 1947-52. (v) Sirimavo Bandaranaike by negotiating with the UNDP in 1964 (vi) K. Balasingham by agitating in the Legislative Council in 1920s. (vii) U. B. Unamboowe by raising it at a meeting of the Central Board of Agriculture in 1951. (viii) Robert Gunawardene by raising the matter in Parliament in 1956. (ix) H. B. Tenne by writing letters about it during 1947-52. (x) T. B. Tennekoon by raising the matter at the Matale D.A.C. in 1956. (xi) D. S. Senanayake, Dudley Senanayake, C. P. De Silva and J. R. Jayawardene by coming up with the idea of diversion while standing in conversation on a river bank near Polonnaruwa in 1938.

own signature projects and maintained highly visible public profiles, in Tennekoon's words, "through the mass medium of development celebrations"[143] (Tennekoon 1988, p. 304). While remaining at the centre of the AMDP which was said to be launched with the aim of resurrecting the past glory of the Sinhala civilisation, Dissanayake, within this narrative, was portrayed as the reincarnation of the hero-king Dutugemunu who saved the island from Tamil invaders and united the country. Parallels were drawn between Dissanayake and Dutugemunu using the relationship they both had with the hill country town of Kotmale. The folklore that Prince Dutugemunu lived in disguise in Kotmale, Dissanayake's hometown, was highlighted and re-established in the Mahaweli narrative. The narrative propagated by the Dissanayake camp was received well by the UNPers in general and the followers of Dissanayake in particular during the Jayawardene regime and was reproduced when Dissanayake contested the Presidential elections in 1994.

3.2.4 Narrative 4: As a Sinhala colonisation project

The creation of Sinhala colonies under the banner of dry zone development is an exercise long contested by the minority communities, especially by the Tamils (International Crisis Group 2008). The AMDP is considered just an extension of the process of colonisation being conducted since the early twentieth century. Farmer (1957) identifies three phases of colonisation: 1815-1914 where there was little government sponsored colonisation; 1915-1930 where colonies were established successfully on an experimental basis; and 1931-1951, the era of active and rapid colonisation[144]. D. S. Senanayake who served on the colonial Land Commission, served as the Minister of Agriculture and Lands in the colonial government and who became the first Prime Minister of independent Sri Lanka, played the pioneering

[143] Prime Minister R. Premadasa had the *Gam Udava* (Village Awakening) programme in his name, where existing villages were rebuilt, renamed and returned to villages. These villages with a collection of identical small housing units were called "model villages" in the Premadasian terminology. The *Gam Udava* "exhibition" held annually in a main town of the island that coincided with his birthday, was a week-long celebration that established his identity as the champion of *Nethi Beri People*, the poor. Lalith Athulathmudali, the Minister of Trade and then National Security, another contender, had his trade mark project Mahapola to his account. Mahapola was a combination of instruments: a massive trade fair held regularly in different parts of the island, a lottery and a scholarship scheme for university students who passed the university entrance examination with merit. Finances generated through the lottery were channeled to fund the scholarship scheme. The post of Minister of National Security awarded Athulathmudali an additional significance within the Sinhala constituency. Ranil Wickremesinghe, then the Minister of Youth Affairs and Employment, though not as senior as Dissanayake, Premadasa or Athulathmudali, was also considered a contender as a result of his relationship to President Jayawardene. The National Youth Services Council, which provides vocational and career training forschool leavers, became Wickemesinghe's signature project.

[144] Out of the thirty one dry zone colonies founded by 1953, Minneriya (1933) and Parakrama Samudra (1942) in the North Central Province and Gal Oya (1951) in the Eastern Province were the largest. While most of these colonies were concentrated in the North Central Province, two adjacent Tamil colonies were established in the Wanni in the Northern Province by 1953 (Farmer 1957, pp. 146, 164-165).

role in dry zone colonisation[145] (Ibid, pp. 143-145). The trend of colonisation continued since independence from the 1950s and the 1960s and 1970s[146] to the 1980s and 1990s, transforming the dry zone from a plural society to a homogeneous Sinhala Buddhist one[147] (Peebles 1990, p. 40). Official colonisation was accompanied with unofficial encroachment. The figure for encroachment probably numbers in the tens of thousands, a case that is more relevant to the AMDP (Peebles 1990, p. 47). According to some reports the number of people settled through non-official colonisation outnumbered the officially sponsored settlers (International Human Rights' Association, Bremen 2013). Even by the mid twentieth century, the establishment of Sinhala colonies in the Tamil dominant regions of the island topped the agenda of Tamil politics. In 1944, the Tamil Congress complained to the Soulbury Commission of Sinhala settlements in the Eastern and Northern provinces (Peebles 1990, p. 37). The demand to reserve the entire Gal Oya scheme for the Tamils on the grounds that it lies in the Eastern Province, which is predominantly Tamil, was made in 1951[148]. This too was the case for the Kantalai colonisation scheme (Farmer 1957, p. 300). The Federal Party at its annual convention in 1956, passed a resolution against the settlement of Sinhalese in the traditional homelands of the Tamils and called for an immediate cessation of colonisation. The Bandaranaike-Chelvanayagam Pact of 1957 and the Senanayake-Chelvanayagam Pact of 1965 both recognised the special rights of the Tamils in colonisation schemes in the Northern and Eastern Provinces. The Tamil United Liberated Front which was the main Tamil political party by 1976, listed the colonisation of historically Tamil territory by the Sinhalese in the well-known Vaddukoddai resolution, as one of the nine justifications for the separate state of Eelam (Peebles 1990, p. 38). According to this narrative, held legitimate in particular by the intellectuals and the politicians of the Tami community and those who sympathise with the Tamil cause, the "Tamil Homeland" in the Northern and the Eastern Provinces was a response by the Tamils to counter the Sinhala perception of an idyllic Buddhist past in which dry zone irrigation provided the resources for a prosperous and cultured civilisation to which officials of the AMDP appealed directly (Ibid, p.41). The

[145] This tradition was continued by his son, Dudley Senanayake who too became Prime Minister of the island (Ibid, pp. 143-145).
[146] The approach towards dry zone settlement went through a technical change specially during the United Front government from the 1970-1977 with focus shifting to cooperative farming and participatory decision making (Amarasinghe 1976, pp. 629-632). Interestingly, Amarasinghe's list of main criticisms of the old settlement schemes (implemented before 1966) does not incorporate the main criticism forwarded by the Tamil people, the Sinhala bias in dry zone colonisation (1976, p. 626).
[147] By 1981 seventy percent of the population of Polonnaruwa (previously known as Thamankaduwa), one of the two districts of the North Central Province, for example, were colonists and almost all of them were Sinhalese (Peebles 1990, p. 40). The ethnic composition of the Eastern Province went through drastic changes during the twentieth century for which colonisation was a contributory factor (Roberts 1979; UTHR(J) 1993a). According to statistics representing the Tamil point of view, more than 165,000 Sinhalese have been added to the population of the Eastern and Northern provinces though colonisation schemes between 1953 and 1981 (Manogaran 1987 in Peebles 1990, p. 51).
[148] Farmer (1957) identifies three types of communalism involved with colonies. He refers to clashes between Kandyans and Low Country Sinhalese as well as to rifts between adjacent tracks in the same colony occupied by different communal groups. Tamil reaction to Sinhala colonies in Tamil areas was the third category of clashes (Farmer 1957, p. 300).

militarisation of the colonies took place by installing units of the Sri Lankan armed forces and by arming colonists as a civil defence force and this heightened the Tamils resistance to colonisation schemes, since the 1980s. According to this discourse, dry zone development, was seen as a matter of military cum political administration and as colonisation of Tamil areas in which Mahaweli Authority played a central role (International Human Rights' Association, Bremen 2013).

3.2.5 Narrative 5: As a project preventing industrialisation

Rather than being seen as a modern development project, the AMDP is treated here as an extension of an attempt by colonials and the Ceylonese elite to, rather, prevent development by preventing the industrialisation of the island. According to this narrative, which can be assumed to be popular among certain sections of the left leaning community who believe in technological development as the way forward, the ultimate results of the colonisation of the dry zone including colonisation by the AMDP, are extreme poverty, civil war and the enormous debt of loans taken for construction that future generations would have to pay back (Pfaffenberger 1992, p. 290). It also disagrees with the notion of indigenous development on technological grounds and deviates, as well, from the colonisation narrative that dry zone development is originally and always a project against the Tamils. According to this narrative, dry zone colonisation, which was a process initiated in the early parts of the twentieth century, was based on two objectives: to diffuse the frustration and anger of the peasants whose traditional villages were circumscribed by British plantations and to deflect attention away from the Ceylonese elites who served in them and; to discourage industrialisation by packing the landless off to dry zone settlements where they could do no harm. As the architects of the project, dry zone colonisation paved the way for Ceylonese elites to become the self appointed champions of the Sinhala Buddhist peasantry (Ibid, p. 289). The promotion of agricultural development forestalled the expansion of industrialisation in a context where Marxist parties were already making significant inroads among the industrial workers who were working for the few industries and infrastructure services established at the time (p. 288). At the centre of this mass mobilisation of landless Sinhalese peasants to the dry zone was the myth of a morally and spiritually superior traditional Ceylonese culture which was symbolised by the rice-growing, quasi-democratic, autonomous and self-sufficient village, closely united by Buddhism (p. 289).

While questioning the factual accuracy of this myth, Pfaffenberger (1990) highlights an important technical feature of the irrigation settlements of ancient civilisations; strong norms of equity in distribution of water which ensured the use of an equal quota of water by every peasant (p. 372).

Referring to the strongly negative effect of gravity flow irrigation - the use of gravitational force to distribute water stored in a reservoir, where peasants at the top end receive water more regularly and in greater amounts compared to the ones at the bottom end, leading insidiously to strengthen disparities in class relationships, Pfaffenberger identifies this norm of allocating a fixed quota of water as the foundation of ancient agricultural civilisation in Ceylon[149] (pp. 362-3). British land policy, however, overturned this practice of juggling of landholdings that ensured a fixed quota of water, in favour of a system where each peasant was provided with a fixed plot of land (p. 378). This transition of focus from water distribution to land allocation in twentieth century colonisation marked the decisive break from the irrigation settlements of ancient civilisations[150]. The ancient hydraulic civilisation that dry zone colonisation attempts to resurrect is therefore a misconception, according to this narrative. The image of a romantic village that was produced and reproduced in colonisation literature where peasants occupy fixed plots of lands is, hence, a colonial construct as well.

3.2.6 Technology as a text/drama

These five narratives help us to make sense of the AMDP, highlighting the key role played by the Project in the individual, group and ethnic politics of the island and hence, qualifying the AMDP to rank alongside the water-related technological systems in India, the Netherlands and the USA which are, according to Bijker (2007), thick with politics. Even though the two ways suggested by Winner (1980) through which technologies can be involved with politics (i.e. either to settle a political issue in a particular community or to contain politics as an inseparable element) have not received further attention, mainly as a result of the weakness of the particular example he has used to prove the point (i.e. Moses' designs of overpasses)[151], the above discussion on the AMDP encourages one to have a

[149] He refers, as proof of this ancient practice, to the observation made by Edmund Leach when he conducted his field work in 1950s in Pul Eliya, a *purana* village in the northern part of the island. Leach notes that every holding in the well-watered upper field was matched by a corresponding plot in the less advantageously situated lower field (Pfaffenberger 1990, p. 374).

[150] The Crown Land (Encroachment) Ordinance of 1840, under which lands where ownership could not be proved were assumed to be state land and reserved later for colonies, is considered the cornerstone of this major transformation (Ibid, p. 382). Unlike in the discourse of colonisation that saw dry zone development as a project to infiltrate the Tamil homeland and which hence referred to the Land Development Ordinance of 1935 and the Crown Land Ordinance of 1947 as the primary tools that defined the legal mechanism of colonisation, here the Crown Land (Encroachment) Ordinance of 1840 is considered the main pillar of colonisation.

[151] By quoting from the biography of Moses by Robert Caro, Winner argued that Moses' social-class bias and racial prejudice affected his designs of overpasses and in return discouraged the presence of buses, the vehicle of the poor and the blacks, on his parkways. The selection of Moses' overpass to prove Winner's point that a technological system becomes a tool to settle political issues however, attracted challenges from different quarters on different grounds, resulting in strengthening the discourse on the politics of technology. In an essay title "Do Politics have Artefacts" Joerges (1999) challenged Winner's story as a well-constructed artefact in itself. Te Long Island Expressway was built in addition to the parkway, that many routes to Jones Beach were open to all, argued Joerges. Woolgar and Cooper (1999) in their article "Do Artefacts have Ambivalence? Moses' Bridge, Winner's Bridge and Other Urban Legends in S&TS" saw the Long Island bridge story as an "urban legend". However, by

second look at his proposal. One can argue that the function of the AMDP in each narrative indicates to its role, either in settling a political issue (e.g. mediating modernity with tradition with the aim of ensuring the political survival of the governing regime, development of the dry zone as a key priority of the post-independence Sri Lankan state, providing an avenue for the second level leadership to the political top, etc) or even suggest that the AMDP is nothing but a political project (e.g. colonisation of Sinhalese in areas of high concentration of Tamils) under the guise of dry zone development. While Winner's narrative provides a single unambiguous version of politics at play in Moses' overpass, the AMDP in contrast is open for multiple interpretations of its political role. The difficulty of providing a definitive version of politics at play was a topic discussed at length. For some, this flexibility of interpretation is an inherent nature of a technological artefact or a technological system whose biography has two phases; an initial phase during which the meaning is yet to be determined (i.e. the stage of interpretive flexibility) and the final phase during which a particular meaning becomes privileged and the role of artefact becomes stabilised or "black-boxed" (i.e. the stage of closure and stabilisation) (Pinch and Bijker 1989[1987], pp. 40-44; Latour 1987, p. 2-3; Barker 2005, p. 705). Accordingly, the uncertainty caused by multiple interpretations is short lived. However, this narrative of treating technologies as objects necessarily passing through the two phases described above, is challenged by others. For them technologies appear to be in endless states of evolution with no intention of stabilisation and closure (Khoo 2005). The AMDP, as a technological system, seems to follow this latter argument. As it can be seen in the discussion on "North Central Province Canal", a case I'm going to discuss at the end of this Chapter, the AMDP is still in a state of evolution even at the time of writing, with exclusions and inclusions of canals to the existing water infrastructure of the AMDP, within a backdrop of continuous ethno-political tension.

Are technological systems capable of political representation? Opinions on this seem diverse. At one end of the spectrum in my opinion, is Latour (2006). For him a technological system is incapable of a clear political representation. The involvement of a range of stakeholders with diverse political interests prevents this possibility[152]. But for Woolgar (1991), Pfaffenberger (1992) and Woolgar and Cooper (1999) political representation is possible, but not unproblematic. "Same technology can have different

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arguing that a definitive story cannot be told and the true intentions of designers cannot be known, Woolgar and Cooper considered Joerges to be guilty of the same mistake made by Winner. Writing a short essay on "Which Politics for Which Artefacts?" Latour (2006) dismissed Winner's thesis as 'pure ideology' and 'conspiracy theory". According to him, Moses' intention was to keep trucks off the parkways and not buses, hence invalidating the point Winner was trying to make.

[152] The problem, according to Latour (2006), "is that if we sort of know how to describe a bridge or a building in its material composition, we are yet unable to draw together all the stake holders which have to be assembled for this bridge or this building to have a political representation".

(political) effects in different situations", argues Woolgar (1991)[153]. Woolgar in a joint publication with Cooper argued for a case of ambivalence of artefacts (1999). Technologies are seen as multiple and varied according to this narrative, and the story of politics at play is considered to be dynamic, shifting and essentially inconcludeable, as one can witness in the case of the AMDP. It is this nature of interpretive flexibility of the political role of artefacts and technological systems that led Woolgar (1991) to treat technologies as "texts". By paying attention to how and why readings of technology are performed, this approach of treating "technology as text" insists that readings of technology text are accomplished both by technologists subjects (e.g. governments, politicians, ethnic communities, engineers as in the case of the AMDP) and by the analyst in the course of sociological argument (e.g. scholars who have contributed in constructing discourses described above, as in the case of the AMDP) (Woolgar 1991, p. 39). By reading technology as a "text" he describes how a technology as an instrument earn different meanings (i.e. interpretive flexibility) and suggests how an "interpretivist" could study ways in which technology texts are written and read[154] (pp. 37-38). However, for Pfaffenberger (1992) technology and politics are further interwoven. At least some technologies he identifies under the category of "technological dramas" are specifically technological forms of political discourse (Ibid, p. 282). In his theoretical formulation, political groups, values and technological artefacts are "reciprocally and recursively constructed in interaction with each other, producing an outcome that ideally generates both political authority and technological system" (p. 290). He highlights another aspect in relation to this discussion on politics of the AMDP, antagonism between technological texts, and prefers the metaphor of "drama" to that of "text". Out of the entire spectrum of interpretive texts, he calls some "dominant texts" (or "statements") and the rest, marginal ones, as "corrective responses" (or "counter statements") which according to him are remedial technological activities (p. 285). Corrective responses or counter statements highlight the effort by the affected disenfranchised groups to attack the ambivalence in the technology's frame of meaning and to make meaning anew. Within the context of the AMDP, I would like to consider the first three narratives that fall in line with the rhetoric of the Southern government as "statements" in a Pfaffenbergian sense while considering the last two, representing the voices of the disenfranchised (e.g. Tamils and non-elites), as "counter statements". The function of each narrative described above is not limited to allow one to make sense of the Project.

[153] For Woolgar (1991) "determining the effects of a technology is an intensely difficult and problematic exercise, and one requires a good theory of how society works, an understanding of the overall dynamics of society, before being able to specify the effects of technology" (p.30).

[154] While arguing that the interpretivist supports a measure of impartiality by re-emphasizing the essential indefiniteness of the attributes of technology (i.e. interpretive flexibility) Woolgar accepts, however, that the interpretivist position still retains a privileged position for the analyst's on texts (p. 41).

It also provides legitimacy and authority to exercise political power within the target constituency within which the narrative is held valid. The narratives of "indigenous development" and "colonisation of Sinhalese" contained the potential of mobilising political activity within the Sinhalese and Tamil constituencies, respectively.

3.3 The AMDP and the Sinhala nation: a journey towards the past

Depending on how it is perceived and by whom, the AMDP seems to perform differing nationalistic functions in different settings, to different audiences. The table shows an attempt to formulate the nationalistic functions of the AMDP as informed by the five narratives described above. An attempt is also made to improve the understanding of these nationalist functions of the dominant texts (i.e. first three narratives) also by situating them against the corrective interpretations (i.e. the last two narratives).

The AMDP as ...	**Nationalistic function**
Narrative 1: A modern mega development project dressed up as an attempt to reclaim indigenous national culture	Rhetorical function: Restoration of the ancient 'national' culture Actual function: Strengthening material conditions of modernity and ensuring the political stability of the government within the Sinhala constituency
Narrative 2: An indigenous development project	Rhetorical function: Dry zone development based on a model of indigenous development Actual function: Legitimating colonisation of the dry zone predominantly by Sinhalese by portraying it not as a project biased towards the interests of the Sinhala nation, but as a key priority of the postcolonial Sri Lankan state
Narrative 3: A project to promote the image of Gamini Dissanayake	Rhetorical function: Agricultural development of the dry zone through provision of water for irrigation and industrial development through the generation of hydro electricity Actual function: Strengthening the stake of Minister Dissanayake in the political leadership of the Sinhala constituency

Narrative 4: A Sinhala colonisation project	Ensuring a strong Sinhala presence in the dry zone
Narrative 5: A project preventing industrialisation	Ensuring the political stability of the Sinhala elite within the Sinhala constituency by preventing the movement of the landless to cities and hence, industrialisation

3.3.1 Revival of a glorious past

How was this done? Interestingly, a common strategy is used in trying to meet the nationalistic functions of all three dominant texts and to generate consent for them within the Sinhala constituency. It was done by mobilising the imagination of the Sinhalese towards a romantic, glorious past using techniques such as the application of invented or imagined traditions or myths. The glorious past the AMDP was supposed to resurrect was the prosperous time of ancient Sinhala kingdoms in the dry zone, the leading civilisation with advanced irrigation and agricultural practices, where food was available in abundance and people - Sinhalese peasants, led simple, sustainable and righteous lives, defined by Buddhist values.

Engineering works that were considered as national icons provide cases where modern technological systems were used to facilitate such backward journeys by nations in search of a romantic past. The Gotthard Railway line through Alps opened in 1882, linking northern and southern Europe through Switzerland and is considered a great work of Swiss engineering that provided the means of unifying Swiss regions with their different languages and identities. It was successfully marketed as a travel experience through the country where Swiss democracy was first founded in the thirteenth century (Elsasser 2009). While remaining one of the national symbols of the modern Portuguese state, the Port of Lisbon which was constructed during the second part of the nineteenth century, was clearly positioned in the Portuguese nationalist narrative as an effort to resurrect the ancient glory of Portuguese sailors of previous generations. The nineteenth century text of Lisbon Port described Portuguese as descendents of those glorious sailors, capable of transporting language and civilisation to Asia and America, with the suggestion that they deserved to re-colonise the portion of land from the Atlantic to Indian Ocean, once again (Saraiva 2007, pp. 268-69).

Attempts have also been made to ground space exploration - a symbol of membership in an elite club of technologically advanced super powers - in culture and in the past. The text of Soviet space travel, while claiming the status of a leading spacefaring nation, roots its origins in Russian culture, particularly in the philosophy of Cosmism, the intellectual foundation of which can be situated in "Eastern and Western philosophical traditions, theosophy, Pan-Slavism and Russian Orthodox thinking" (Siddiqi 2010, p.432). According to Siddiqi, this is also the case with Chinese and Indian space travel where commentators locate their own narratives in indigenous scientific and technological achievements. While the Chinese narrative refers to China as the birthplace of rocketry in the pre-modern world, Vedic Sanskrit texts feature prominently in Indian narrative which were shown as evidences of the glorious past of Indian space travel (p. 434).

A closer look at the literature on modern technological icons of nations, however, shows other examples which share broader similarities with the text of the AMDP. Canal du Midi, the seventeenth century French infrastructure project of "enormous scale and ambition", was a symbol of French nationalism that aimed to make France an empire in the image of ancient Rome. As a modern engineering project chasing the glory of the past, the text of the Canal du Midi shares a few common features with the text of the AMDP. Like the AMDP, it was a water engineering project. The opening ceremony conducted in the fall of 1667, was designed to recreate the empire of ancient Rome, reminding one of the rituals of development conducted at the site of the AMDP, as mentioned in narrative 1. As the text goes, the canal was decorated as an arena such as those of the ancients, where nobles and peasants assembled to bless and inaugurate the start of New Rome (Mukerji 2009, pp. 15-17, 25). The survival strategy used by the narrative on the Canal du Midi when it was proved to be an expensive technical and monetary burden on the state, can also be assumed to be somewhat similar. As can be argued in the case of the AMDP, propaganda on the Canal made it a great political asset in the public imagination, overshadowing critiques by opponents. The narrative was constructed in such a way as to turn the waterway into a public marvel and those who were involved with building it, into heroes (pp. 27-28). Literature also shows how engineering works that were created using foreign technologies, foreign resources and foreign funds were still used as symbols of nations to mobilise nationalism by grounding them in a narrative of a glorious past. The Cilegon steel plant and the Palapa satellite, technological systems that were made into national icons of Indonesia during the second half of the twentieth century, provide two such examples. The Cilegon steel plant was initially constructed as a Sukarno-era Soviet aided project and finalised in Suharto's New Order as a key a business venture of the Indonesian oil giant Pertamina in partnership with several German companies such as Siemen's Kloeckner and Ferrostaal. It was portrayed

both as a departure from the century-old agrarian life as well as a journey to the prosperous past. By naming the plant Trikora, Sukarno was said to have symbolically tied the postcolonial technological project to narratives of the unity of the Indonesian nation and the national struggle for the return of West Irian, the western part of the islands of Papua New Guinea. It was, however, the selection of the town Cilegon as the site for the plant that provided the passage for the journey towards the glorious past. Cilegon was a small, rural and impoverished town by the mid twentieth century, which had been a wealthy part of the Majapahit Empire (Moon 2009, pp. 263-64). The Cilegon steel plant, a project for which "raw materials, expertise and to some extent even labour largely came from elsewhere and the product was also marketed elsewhere", hence became the symbol of the revival of pre-colonial greatness (p. 274).

In the list of technological icons that mobilised ethno nationalism, the Palapa satellite provides, in my opinion, the next closest example to the AMDP. Making full use of the rituals of development to mediate differences between a modern national future and a traditional past, the narrative of the Palapa satellite showcases how the challenge of Palapa being an artefact of an alien country was neutralised to elevate it to the status of national icon. The Palapa satellite system was launched in 1976 - the first of its kind in the developing world. The linking of high technology with Javanese cultural tradition was reinforced at the inauguration ceremony, according to Barker (2005) when President Suharto symbolically switched on the satellite using a remote control button embedded among seventeen jewels (representing the date of independence) in a replica of a Javanese ceremonial dagger. The national significance of the launch was further reinforced when three ceremonial phone calls were made by the President to regions situated at the most distant points in the archipelago nation representing territorial unity of the state. This compares very interestingly with the *jala puja* ritual where water collected from the newly commissioned Kotmale reservoir was sent in four directions, north, south, east and west to destinations, according to Tennekoon (1988), that demarcated the parameters of a shrinking Sinhala Buddhist state (p. 299). The Palapa satellite launch celebrations continued till evening and included a cultural performance dramatising Gajah Mada's fourteenth century proclamation (Barker 2005, pp. 70-07). The accusation that might have been made by the nationalist lobby for relying on foreign technologies is said to have been neutralised by an organised campaign among university students based on the argument that, "once we are clever we can make a satellite, now we buy" (p. 715). If revival of the past glory of the Sinhala nation was a key feature of the AMDP or perhaps the central feature as was suggested by the dominant narratives of the Project, Barnes Wallis's designs for swing-wing airplanes and merchant cargo-carrying submarines provide a similar scenario for England. Wallis, who has long been the most

famous British engineer of the twentieth century, denounced England's decline in a series of speeches and interviews from the 1950s to the 1970s and forwarded a programme for its redemption. Moving beyond rhetoric and attempting to materialise his ideology through technological systems, the designs of swing-wing aircrafts and submarines were introduced to counter US commercial and Soviet military threats and to envisage a "second Elizabethan Age" where England would remain at the heart of a strengthened British Commonwealth (Zaidi 2008, p. 63). For him, the engineers and scientists in this new Elizabethan Age represented the great captains and seamen from the days of Elizabeth I (p. 73).

The national pasts which these modern technological icons were instrumental in reviving have several important features. As shown by the discussion above, they were times of major achievements that made the membership of nations proud. They were also happy times where things worked smoothly and perfectly among humans as well as between humans and nature. This nostalgia for an ideal past where things were better than the present, an image of the past constructed at present, is the focus of attention of the discussion by Oosterhout (2008) on technological romanticism and the revival of colonial water tanks in Java, Indonesia. It was the nostalgic notion of colonial *waduk*, an open-surface water tank irrigation technology used in the colonial era in eastern and central Java, that has led local farmers of western Java, who have no previous experience of the technology, to introduce them during recent times as a better solution to the issues of water distribution. Even though *waduk* was built by colonials to help cope with serious disputes between indigenous farmers and European sugar planters failed in its mission, for contemporary Indonesians, "the colonial technology embodies fairness because it is from "the good old days" when things, they imagine, were just and stable" (p. 702). Farmers of west Java "contrast their present lived experience of material and moral erosion to the colonial period when, they claim, water was divided in a just manner and abuse was noticed and punished" (p. 719). In the same way that the ancient hydraulic civilisation based on fixed allocation of land was a misconception and a colonial construct within the context of the AMDP as Pfaffenberger has argued, the west Javanese *waduk* of the late twentieth century is a postcolonial construct, according to Oosterhout. Unlike the colonial version, "the new *waduks* no longer referred to tanks, but rather to large lakes that often required the resettlement of entire villages" (pp. 715-16). Though positioned in a nostalgic discourse of pre-colonial and colonial heritage that is said to benefit the population of small scale farmers, the "new *waduks* have no local irrigation function at all; instead, they are connected to supra-regional water-management plans that benefit the urban population and more distant farmers" (p. 717). The wistful affection for the romantic past of the Sinhala nation, a past that emerged and evolved in the valleys of Mahaweli, was best documented elsewhere in the *Mahaweli Vansaya*, the Chronicle of Mahaweli that

was authored as a part of the AMDP[155]. In comparison to its importance as a serious recent attempt to document history with the involvement of a large team of authors, the *Mahaweli Vansaya*, the two volume Sinhala language publication, has not received adequate scholarly attention, so far[156].

3.3.2 The Mahaweli Vansaya (The Chronicle of Mahaweli): Mahaweli Valley as a nostalgic site

Following the tradition of pre-modern kinship of documenting historically important events, objects and people in the form of chronicles such as the *Dipavamsa, Mahavamsa, Thupavamsa, Boodhivamsa, Elu Aththanagalu Vamsa, Kesha Dathu Vamsa, Lalata Vamsa*, etc., the decision to launch the *Mahaweli Vansaya*, a historical record of the River Mahaweli and the great civilisation that evolved around it, was taken in December 1981 at a meeting headed by the Minister of Lands, Land Development and Mahaweli Development (Ekanayake 1984; 1985). While Minister Dissanayake was the chair, W. J. M. Lokubandara, the Minister of Indigenous Medicine and a prominent member of the *Hela Havula* Movement, led the discussion. The project of writing it was initiated with an inauguration ceremony held at the Ministry on the 15th of January 1982, and the two-volume *Mahaweli Vansaya* traces a lengthy time span, from pre-historic times to the commissioning of the AMDP[157].

The team of authors included academics, civil servants, engineers, broadcasters, artists, ayurvedic doctors and scientists. Historians, archaeologists, experts in Sinhala and Pali languages and sociologists

[155] The idea to write a chronicle on Mahaweli seems to have been conceived within the government after construction work of the AMDP began a few years back. According to the preface to Volumn I, *Mahaweli Vansaya* the initial discussion to author a chronicle was held in December 1981, while construction of the Maduru Oya, Kothmale and Victoria reservoirs was already underway.

[156] Hennayake (2006) refers to "Mahaweli Saga", a text which can perhaps be seen as a strictly condensed version of *Mahaweli Vansaya*, three of the four authors of which were among the sixty-author editorial board of the Mahaweli Chronicle (pp. 108-111).

[157] *Mahaweli Vansaya* Volume I, with a total of fourteen chapters, introduces in its first three chapters the geographical, geological and environmental features of the River Mahaweli. The fourth chapter with the title "Mahaweli and the Heartland of the Sinhala Nation" describes the Mahaweli Valley as the birthplace and the main land of Sinhala civilisation. With a description of pre-historical context as the backdrop in chapter five, chapter six traces the historical emergence and the decline of the Mahaweli region, probably as a preface to the renaissance introduced by the AMDP. Chapters seven and eight deal with a discussion of the last Kingdom in Kandy and the subsequent rule by the colonials, especially the British. The process of introducing Buddhism to the island and the religion's influence in social life are described from chapter nine to eleven. Archaeological ruins in the Mahaweli Velley are introduced in the twelfth chapter and the thirteenth is a discussion of ancient Sri Lankan economy and trade. The fourteenth is on plantation agriculture introduced by the colonial powers. Volume II of the *Mahaweli Vansaya*, with ten more chapters, is dedicated to demonstrating that the Mahaweli Valley is historically the land of Sinhalese by discussing the different aspect of the lives of Sinhalese in the Mahaweli land. The first three chapters of Volume II (from chapter fifteen to chapter seventeen) illustrate the Sinhala village and its social organisation depicting the day-today lives of Sinhala peasants in the dry zone. Chapters eighteen to twenty are reserved for a discussion on Sinhala language, folk literature, arts and crafts of the Mahaweli Valley. In chapters twenty one and two, one finds a sketch of the nature of industries and agricultural practices in ancient Sri Lanka. Chapter twenty three is a discussion on traditional knowledge. A discussion on all other ethnic groups can be found in the final, twenty fourth chapter (Ekanayake 1984; 1985).

played a prominent role in constructing the particularly Sinhala narrative of the *Mahaweli Vansaya*[158]. Though written by a large team of authors, the *Mahaweli Vansaya* is fairly consistent in the message it communicates. By reminding the reader that the island belongs to the Sinhalese, a nation that is strongly influenced by Buddhism and which was instrumental in building a great hydraulic civilisation, the *Mahaweli Vansaya* constructs the narrative of the Mahaweli land as the heartland of Sinhala civilisation. The *Mahaweli Vansaya* constructs a nostalgic view of the Sinhala past. All seems to be smooth on almost all fronts; the status of technology used, Sinhalese claims for the island, the relationship between the state, society and Buddhism and the nature of the peasant community.

The *Mahaweli Vansaya* talks about the advanced status of technology in the Mahaweli Valley. The Chapter on "River Network and Water Resources" introduces the network of tributaries of the River Mahaweli and then moves on to explain details of the advanced technical and management aspects of irrigation systems. The system was designed to work well. However, as is the case with popular narrative of Sri Lankan engineering discussed in Chapter 1, the entire credit for this advanced status of affairs is casually given to Sinhalese without taking on the burden of establishing the connection[159]. The Sinhalese occupy a special place in world history as a result of this achievement, says the *Mahaweli Vansaya*, arguing the case of Sri Lankan tank-based irrigation network as the only ancient technical invention in the world that is still functional (Vitharana 1984, p.37-44).

[158] T. B. M. Abayasinghe (Professor of Modern History, University of Colombo), Pandula Andagama (Head, Human Sciences, National Museum), Sirima Kiribamune (Associate Professor, University of Peradeniya), Ananda Kulasooriya (Professor of the Department of Sinhala and the Dean of the Faculty of Arts, University of Peradeniya), Sirisena Gamage (Assistant Lecturer, Dept. of Sociology, University of Peradeniya), P. V. J. Jayasekara (Senior Lecturer, Dept. of History, University of Peradeniya), J. B. Dissanayake (Professor of Sinhala, University of Colombo), Shiran Deraniyagala (Deputy Director of Human Sciences), Rev. Yatagama Dammapala (Senior Lecturer, Dept. of Pali, University of Peradeniya), Rev. Warakawe Dammaloka (Senior Lecturer, Dept. of Sinhala, University of Peradeniya), K. N. O. Dharmadasa (Associate Professor of Sinhala, University of Peradeniya), Chandrasiri Palliaguru (Senior Lecturer, Dept. of Sinhala, Vidyalankara University), P. B. Meegaskumbura (Associate Professor of Sinhala, University of Peradeniya), Nandasena Mudiyanse (Professor of Sinhala and the Dean of the Faculty of Arts, Vidyalankara University), Sirimal Ranawella (Professor of History, University of Ruhuna), R. M. B. S. Rajakaruna (Lecturer, Dept. of Sociology, University of Peradeniya), Amaradasa Liyanagamage (Professor of History, Dean Faculty of Social Sciences, Vidyalankara University), Rev. Horana Vajiragnana (Academic administrator, Dept. of Sinhala, Buddhist and Pali University), Rev. Kamburupitiye Vanarathana (Former lecturer, Dept. of Archeology, Vidyodaya University), Anura Wickremasinghe (Lecturer, Dept. of Sinhala, University of Colombo), Vinie Vitharana (Professor of Sinhala, University of Ruhuna), Rev. Deradeniye Wimalakerthi (Lecturer, Pali and Buddhist University), S. G. Samarasinghe (Language Commissioner), M. U. De Silva (Senior Lecturer, Dept. of History, University of Ruhuna), K. M. De Silva (Professor of History, University of Peradeniya), Rev Ellawala Medananda (Former Lecturer, Vidyodaya University and Thilak Hettiarachchi (Senior Lecturer, Dept. of Sociology, University of Colombo).

[159] One of the rare places the general argument of the *Mahaweli Vansaya* gets violated is in the discussion on the art and craft of the island which are said to be extensively influenced by Indian art and craft. In the same way "water of a reservoir gets refreshed by water streams coming from outside, a nation too gets fresh blood as a result of conflicts with foreigners", says the *Mahaweli Vansaya*. It continues to argue, however, that the Sinhalese art and craft too found their own path of evolution after their arrival in the island 2500 years ago (Mudiyanse 1984b, pp. 320-322).

The *Mahaweli Vansaya* constructs a case to justify the Sinhalese claim of the entire island. By taking an uncritical approach, it simply identifies the entire territory of the land of the island as the land of Sinhalese. While Mahaweli land is seen as the heartland of the Sinhalese, the entire island is viewed as "Three Sinhalaya" (three kingdoms of the Sinhalese), the land of the descendants of the Aryans. The Chapter on "Mahaweli and the Heartland of the Sinhala Nation" introduces the concept of a heartland in relation to the land of the Sinhalese. Mahaweli land is said to have provided protection to the Sinhala nation till the very end, till the entire island came under British rule in 1815. The map of the heartland, illustrated in the chapter overlaps almost entirely with the map of the Mahaweli Valley and the map of land to be irrigated by the AMDP (Madduma Bandara 1984, pp.45, 47). Referring to the fourteenth century *Kadaim Potha*, the *Mahaweli Vansaya* identifies the whole country to be divided into three Sinhala kingdoms, *Maya* (with twenty eight sub kingdoms), *Pihiti* (with forty four sub kingdoms) and *Ruhunu* (with forty eight sub kingdoms). The sub kingdoms under the rule of Tamils such as the sub kingdom of Jaffna, Maravvirata, etc. were also placed within the "Three Sinhalaya" (Abewardena 1985, pp. 335-336). The *Mahaweli Vansaya* always classifies villages in the island as Sinhala villages, even when the names of the villages were in Pali or Tamil. This classification is based on the argument that the Pali and Tamil languages have influenced the names of Sinhala villages located on both sides of the Mahaweli river, indicating that the villages were originally Sinhala even though they have for example, Tamil names such as "malei" or "kulam" at the end, to sound Tamil (Dissanayake 1985a, p. 352). All cities in the Mahaweli Valley are classified as Sinhala cities (Mudiyanse 1985, p.353). The emergence of settlements and the formation and the expansion of the Lankan state are narrated as a chronologically-ordered story of Sinhala kings (Hettiarachchi 1984, pp.65-69; Ranawella 1984, pp.69-83). The *Mahaweli Vansaya* though defined as a chronicle on the Mahaweli Valley, a region within which the presence of Tamil speaking people was historically observed as in the case of narrative 4 above, takes the easy way out, avoids complications and allocates just one chapter of its twenty four chapters: “Special Ethnic Groups”, for a discussion on other ethnic communities. Under “Special Ethnic Groups” there are separate sections for the *Veddas*, *Wanni* Sinhalese, *Kinnaras*, *Rodis* and *Ahikuntikas*, the small ethnic groups that attracted the attention of anthropologists in the second half of the twentieth century. A discussion on "Other Ethnic Groups" comes at the end of this single chapter, where brief references are made to Tamils and Muslims in a few paragraphs[160] (Meegaskumbura 1985, pp. 623-625).

[160] While stating that the Tamils existed in the island for a long time, this section identifies the factors that allowed the Tamils to establish their power base in the North; the continuous flow of immigrants from South India; internal conflicts among the Sinhalese; and the weakening of the overall power of the ruling Sinhalese kings. The section also provides a description of the

> "As this [chapter] is on other nations, it suits that [we] add a brief section on Tamils and Muslims. It also suits because there are those among Tamil castes and tribes who were mixed with Sinhalese" (Meegaskumbura 1985, p.624)

The *Mahaweli Vansaya* establishes a harmonious relationship between Buddhism and all kinds of human activity. The chapters on the "Arrival of Buddhism and its Spread" and "Buddhist Religion in Sri Lanka" describe in detail how Buddhism was brought to the island by Arhat Mahinda, how Buddhism was institutionalised as Mahavihara, Abhayagiri and Jethavana, etc.[161], how Mahavihara became the mainstream Buddhist school and how Buddhist literature in the form of commentaries were translated from Pali to Sinhala. The two chapters establish the link between the Lankan state and Buddhism since the time Buddhism first arrived in the island. Buddhism became the religion of the state, the King became the guardian of Buddhism, the Bikkus the care takers of Buddhism and the people became the main disciples of the temple (Vajiragnana 1984 and Dhammapala 1984, pp175-190). The chapters on literature, education, architecture and arts and crafts were drafted with the objective of highlighting the central role Buddhism has played in the evolution of these fields. The signature of Buddhism is said to be present in all forms of literature - from folklore to Hela commentaries, chronicles, biographies, poetry and stories of history[162] (Kulasooriya 1984, pp. 193-205). The *Mahaweli Vansaya* describes Buddhist education provided at Mahavihara and Abhayagiri schools as the early forms of organised education. Mahavhara's superiority in the teaching of the Buddhist text and the code of conduct in Buddhist practice and the prestige of Abhayagiri in teaching the sciences, arts and crafts are especially highlighted[163] (Herath 1984, pp. 205-217). Describing the major works of Buddhist architecture such as pagodas, temples, *vatadages* (structures built around pagodas) and *pilimages* (the building that hosts Buddha statues), a relationship is built between Sinhala architecture and Buddhist architecture (Mudiyanse 1984a, pp. 217-220).

The nostalgic notion of the past that is said to continue undisturbed in the rural Mahaweli Valley, is however, best showcased in the descriptions of the lives of Sinhala peasants. They lead uncomplicated

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caste structure in Tamil society. Muslims on the other hand, are thought to have arrived in the island straight from Arabia, South India or from Malaysia. It further explains how one group of Muslims was absorbed into Sinhala culture while another group absorbed the Tamil language and Tamil culture (Meegaskumbura 1985, pp. 623-625).

[161] Mahavihara, Abhayagiri and Jethavana were the three main Buddhist fraternities of the island, with differing influences from the Theravada and Mahayana traditions.

[162] The earliest form of written literature were the commentaries documented in Sinhala/Hela language to clarify the Dhamma and the code of discipline of Buddhism which arrived in the island with the arrival of Arhat Mahinda and his team of missionaries. The presence of a heavy Buddhist influence is also a hallmark of chronicle literature (Kulasooriya 1984, pp. 193-205).

[163] Interestingly the other schools of Buddhism that were also practiced to a lesser scale were identified in the *Mahaweli Vansaya* as *mithyadharma*, or false doctrines (Herath 1984, pp. 205-217).

and simple lives. According to this romantic notion, as reflected in the section on "Paddy Cultivation", the Mahaweli farmer is seen as a person who has inherited a set of ethics moulded by Buddhism (Dissanayake 1985b, p. 569). Children, and girls in particular, are reared from childhood as devotees of the religion (Dhammaloka 1985, pp.388-394). Love for humankind, an ability to co-exist, a desire for equality, thankfulness, respect and aesthetic sensitivity are seen as the main components of these ethics (Dissanayake 1985b, p. 569). The section on the "Ways of Morality" extends this to the community of peasants, the village, and portrays an ideal notion of a typical Sinhala village in the Mahaweli region. It provides a detailed description of a religiously disciplined village where things happen according to a well-managed plan. Accordingly, people of the Mahaweli Valley live away from the bad influences of contemporary urban culture. The traditional village in the region is said to be a self-sufficient unit, to a great extent. Morality, according to this narrative plays an important role in the lives of Mahaweli peasants. The foundation of the morality of the family is seen as the special relationship between the father and the mother who have well defined positions in the family setup[164] (Dhammaloka 1985, pp.388-394). This uncomplicated nature is said to be reflected in peasant's dress as well. According to the *Mahaweli Vansaya,* the men's attire is simple and convenient to perform work while the women's attire is simple and attractive (Ibid).

The *Mahaweli Vansaya* uses a few strategies to construct this nostalgic narrative of the past and the rural lives of Sinhala peasants. It builds an uncritical relationship between the Mahaweli civilisation and the Sinhala nation. By leaving out the regional, ethnic and cultural diversity of the social fabric of the Mahaweli Valley, it constructs a romantic notion of a particular homogeneous peasant life that is portrayed as the uncomplicated life of a peasant in a self-sufficient Sinhala village. The near absence of certain groups in the narrative allows the *Mahaweli Vansaya* to achieve its goal of reclaiming the Sinhala

[164] The narrative describes this relationship in detail. The father occupies a prestigious position within the family and commands love and respectful obedience from its members. In all affairs decision-making is considered the responsibility of the father. The mother in the meantime helps the father in implementing the decisions taken by him. While extending loving respect towards her husband, the wife never behaves as an equal to him in public. One indication of this respect is refraining from sitting at the same level as her husband. She never argues and extends her consent to decisions taken by her husband. As a housewife it is her responsibility to engage in house work. The sexual and romantic lives of the parents are hidden from their children. A common sight in a village is to see the mother walks a few steps behind the father. The woman is used to carry all weight, including bags and children. The narrative identifies this as a model relationship where gender roles are clearly defined, and describes the relationship in detail (Dhammaloka 1985, pp. 388-394).

heartland, without much difficulty. The invisibility of Tamil and Muslim communities prevents the complications they could have brought with them[165].

3.4 The AMDP and the Sinhala nation: dealing with the 'other'

Facilitated by technology, nations tend to visualise their common futures or shared pasts. This visualisation helps to bring and keep the membership of nations together as imagined communities. While the Hydro Electric Scheme discussed in Chapter 2 was instrumental in imagining an industrially advanced modern Ceylonese nation, the AMDP, as discussed so far, remobilised Sinhala nationalism by reviving nostalgic memories of a common glorious past. Is this gaze towards the future or the past along the time axis the only way a nation can be built and maintained? A relational approach in identity formation provides another arena to discuss how a nation is in operation. Rather than looking at time, it looks at space - at self not in relation to time, but in relation to 'others'.

The demarcation of boundaries of ethnic and racial groups is a long-standing debate (Chai 1996, p. 281). It can be traced back at least to the works of Carl Schmitt and Fredrik Barth. In his famous work, "The Concept of the Political" Schmitt (1932) introduced the categories of 'friends' and 'enemies' at work in defining the political identity of a group (Schmitt et al 2007[1932]). The idea of 'other', however, was clearly articulated by Fredrik Barth in 1969, when he argued that the identity of a community is defined in opposition to the perceived identity of other racial and ethnic groups (Lamont and Molnar 2002, p. 174). The role played by the 'other' is considered more fundamental in defining the identity of a community than its shared culture. Whether the argument that was forwarded in relation to a racial or an ethnic group is also valid to describe a nation, can be a matter for debate when taking into consideration the differences between the two communities. An ethnic group with no evolved interest for its own territory or a state is contrasted with a nation which demands command over a territory or a state. For Connor (1994), ethnicity represents a step in the process of nation-formation (p. 102). As a result, "while an ethnic group may [...] be other-defined, the nation must be self-defined", according to

[165] In the six hundred and forty seven page chronicle, Sri Lankan Tamils and Muslims appear as communities co-sharing the land in one and half pages at the very end. The narrative of the *Mahaweli Vansaya* does not engage with the results of the survey conducted as a part of the chronicle writing project. The survey indicates to demographic changes occurring most probably as a result of the mass scale colonisation by the Sinhalese. The sample survey conducted to look at the changes in the social organisation of traditional villages caused by the Accelerated Mahaweli Scheme shows major changes in village ethnic composition. The percentage of Sinhalese living in Millewa in Polonnaruwa in System B, has increased from 42 to 69, from 1970 to 1980. The percentage of Tamils in the village has dropped from 23 to 2, in parallel. Drastic changes in the communities of different religious faith can also be seen. The population of Sinhala Buddhists increased from 73 percent in 1970, to 98 percent in 1980. The Tamil Buddhists' population of 11 percent in 1970, dropped to 0 percent by 1980. The Sinhala Hindus of 4 percent in 1970 also vanished by 1980. The Tamil Hindu population also dropped from 12 percent in 1970, to 2 percent in 1980 (Rajakaruna 1985, pp. 366-369).

Connor (p. 103). For Calhoun (1993), "while it is impossible to dissociate nationalism entirely from ethnicity, it is equally impossible to explain it simply as a continuation of ethnicity or a simple reflection of common history or language" (p. 211). However, the role of other, or an enemy or an external threat, in shaping a nation and mobilising nationalism remains the focus of many investigations conducted during the last few decades (e.g. Armstrong 1982; Kosterman and Feshback 1989; Schopflin 1990; Bruckmuller 1993; Eriksen 1993; Alonso 1994; Parekh 1994; Duara 1996; Pieterse 1997; Young 1997; Finlayson 1998; Taras 1998; Nieguth 1999; Kuzio 2001; Wimmer 2002; Salame 2004; Gol 2005; Bonikowski 2016). For Calhoun (1993) himself, "nationalism is not simply a claim of ethnic similarity, but a claim that certain similarities should count as the definition of political community" and, hence, opening up space to define nation, not just on the basis of internal similarities of the membership, but differences to others (p. 229). The two cases I'm going to look at below, "Yaan Oya - Malwathu Oya - Madhuru Oya Operation" and "North Central Province Canal", seem to highlight Sinhala nationalism in action more in relation to the Tamil other, adding new ground to extend the discussion conducted so far.

The rhetoric of othering which separates us from them and creates in-groups and out-groups is at the centre of national mobilisation over history, from the definition and redefinition of identity of the English (with the Scots, Irish and Welsh as others), the Nazis (regarding the rest as others) to Americans in recent times from George W. Bush to the Trump administration (with evil and Islamic terrorism as the other)[166]. Referring to the degree of otherness in identity management in the process of nation building in Serbia, Petrovic (2008) introduces the two terms: 'undeniable other' and 'less other'[167] (p. 67). In the context of the AMDP, the Tamil seems undeniably the ‘undeniable other’.

[166] Levinger's and Lytle's (2001) thesis on triadic structure of nationalist rhetoric offer a tool to explain how those who stay outside of the boundary of a nation could trigger a nation to act. According to Levinger and Lytle all rhetoric of national mobilisation contains three juxtaposed elements; a glorious past, a degraded present and an utopian future. This triad, they argue, function as a highly effective rhetorical strategy for mobilisation, inviting nations to proceed from the realm of political imagination to the realm of action (p. 178). The role of other in the equation becomes visible when Levinger and Lytle identifies three interlocking elements (i.e. tension, diagnosis and prescription) that link myths (i.e. glorious past, degraded present and utopian future) and action. Tension between the mythical past and the present is diagnosed by them as caused by the other, internal and external agents. Degradation at present in the form of loss of territory, loss of linguistic and racial purity, moral decline, etc. is prescribed with remedial action (p. 186). Even though Levinger's and Lytle's triad has limitations and cannot be held valid as an instrument to describe developmental nationalism where the imagination of a developed nation often marks a clear break from the past, it seems to provide a logic to discuss ethno nationalism where the nostalgic past is lost as a result of threats to the nation by an enemy, the other. Prescription, corrective collective action, is to invert the diagnosis through struggle. Referring to literature on mobilisation and collective action in relation to nationalism, Levinger and Lytle identify two categories of approaches to discuss action; instrumentalist and constructivist. While the instrumentalist approach emphasises structural and institutional factors, the constructivist approach focuses on the construction of meaning and the formation of political identities (p. 187). Dealing with other plays a key role under both categories.

[167] She refers to Albanians as the 'undeniable other' and to other Muslims as the 'less other'.

3.4.1 Case 1: Yaan Oya - Malwathu Oya - Maduru Oya Operation: destroying the basis of Eelam[168]

The relationship between the nation and the other is fundamentally dichotomic. While, on the one hand, the nation is defined by the other and hence loses its significance in the other's absence, one of the main functions of the nation, on the other hand, is to eliminate the other. If the interest in looking at one's own self - at a perceived past or imagined future - becomes helpful in describing certain actions of the nation, the preoccupation of the nation with the other - threats and enemies - sheds more light in explaining certain other actions. The "Yaan Oya - Malwathu Oya - Madhuru Oya Operation", is a title given by me, to an unsuccessful attempt by a small group of high officials, engineers and politicians to alter the technical map of the AMDP, with the aim of breaching the continuity of the Eelam land, the territory the minority Tamil community considered their traditional homeland and the independent state for which Tamil militants fought for over three decades. Details of this important operation hardly appear in scholarly literature and when it does appear, it is just a brief reference describing it as a failed attempt of mass scale encroachment by the Sinhalese in the AMDP land in Maduru Oya, the first phase of the overall operation[169]. The mainstream print media, both Sinhala and English, avoided reporting details of this exercise that took place in 1983. Full details of this operation, however, can only be found in two publications by one of the architects of this attempt, Herman Malinga Gunaratne. The book, "For a Sovereign State" first published in 1988, and the newspaper article that appeared in *The Sunday Times* on 26th August 1990 with the title "Destroying the basis of Eelam", provide Gunaratne's version of events that were initiated at secret discussions among Mahaweli officials in April 1983 and ended up by the end of 1983 with Gunaratne and forty others attached to Mahaweli related institutions being interdicted, questioned or detained for mounting a secret operation. Gunaratne's narrative was confirmed by former officials of CECB whom I interviewed during the course of my fieldwork (Informant 8 and 9). According to these sources, most of the people who were interdicted were Public Relation Officers of the AMDP. This episode, most probably an embarrassment to the Sinhala constituency, was however mentioned in several publications and reports by organisations and groups campaigning for Tamil rights[170]. The best description, a Tamil perspective, can be found in the 22nd Chapter of the e-book, "Pirapaharan" written under the title "JR's Third Track" by the journalist T. Sabaratnam (2004). The

[168] Details of this operation are also discussed under the Section 3.5, Engineers.

[169] Peebles (1990) observed that "more importantly, encroachment in the Maduru Oya region of the Mahaweli programme reportedly were encouraged by Gamini Dissanayake, Minister of Mahaweli Development, and N. G. P. Panditaratne, Chairman of the Mahaweli Board (p.45).

[170] See for example, International Crisis Group (2008, p. 4); International Human Rights Association, Bremen (2013, pp. 17-18), UTHR(J) (1993b).

exercise to settle Sinhalese mass scale on the West bank of the Maduruoya that was reported in Tamil language publications, was just a part of a grand plan developed in mid 1983, to challenge the basis of Eelam as a continuous stretch of homeland of Tamils along the upper coastal belt of the island. The aim was to deviate from the original map of the AMDP and to breach the continuity of Eelam land at three points by creating additional settlements of Sinhalese, initially in Yaan Oya basin (i.e. System M of the Master Plan that was not incorporated in the AMDP), and then in Malwathu Oya (i.e. System I of the Master Plan that was not incorporated in the AMDP but named as a part of the buffer zone of the AMDP) and Maduru Oya (i.e. System B of the AMDP) (see *Map 1*). While the Yaan Oya settlement was designed to violate the continuity between the adjoining Trincomalee and Mullaitivu districts and the Malwathu Oya settlement, the connection between Mannar and Puttlam districts, Maduru Oya settlement was expected to separate the adjoining districts of Batticaloa to Trincomalee. Trincomalee, the coastal town where the River Mahaweli reaches the sea, a place of strategic importance to Eelam, was also proposed to be developed as a metropolis so that the city would lose its relevance in the political map of Eelam[171]. It was also suggested that some of the excess waters of Mahaweli be diverted to Yaan Oya as a part of the settlement plan to facilitate a convenient life for the new settlers. Similar plans were devised for settling Sinhalese on the banks of Malwathu-oya as well (Gunaratne 1990; 2009[1988]).

However, the accidental meeting in mid August between Gunaratne and the leading Sinhala nationalist monk, Dimbulagala Seelalankara, from the Eastern Province resulted in changing priorities. Seelalankara offered himself to lead the settlement of Sinhalese immediately in Maduru Oya, the last priority in the original plan. This deviation upset the original plan. According to Gunaratne, the process of settlement started on the 1st September 1983 and ended in few days as a mass movement of around 45,000 Sinhalese. For Anthonimuttu, the Government Agent (GA) of Batticaloa district, 40,000 Sinhalese had occupied the West Bank of Maduru Oya by mid September 1983. The entire process was a public spectacle[172]. The episode attracted angry responses from the Tamil side and particularly from

[171] This included the proposals to develop Trincomalee harbour as a ship-building yard and the airport as a domestic transport hub and to declare the entire area a free trade zone. Establishment of a naval academy was also a part of the grand plan (Gunaratne 2009[1988]).

[172] Seelalankara placed an advertisement in the Sinhala language *Riviresa* newspaper on the 14th August 1983 appealing to youth to apply for land distributed freely. The applicants were asked to appear personally or send application in writing accompanied by a certificate from the government official of the village. Circulars were sent to the chief priests of temples to send at least two landless peasant families. On 1st September Seelalankara led an army of settlers to Maduru Oya in a convoy of around two hundred vehicles. He is said to have headed the convoy in a vehicle equipped with a Buddhist flag and a loud speaker chanting 'Seth Pirith' (Gunaratne 2009[1988]).

Anthonimuttu[173], the Minister of Home Affairs, K. W. Devanayagam[174] and the leadership of the Tamil United Liberation Front[175]. Attempts were made using local groups to legitimise encroachment[176]. Sinhala and English mainstream media tried their best to make counter claims and to divert attention to the colonisation of land by the Tamils, especially to the settlement of Indian Tamils in the Wanni[177]. Under pressure from India and the international community, President Jayawardene ordered the dismantling of unofficial settlements in the West Bank of Maduru Oya[178]. The Yaan Oya - Malwathu Oya - Madhuru Oya Operation that ended up as a failed attempt to breach the continuity of Eelam land was revived in 1984 with a new set of actors and a new set of objectives[179].

Leaving the task of discussing the role of engineers in the above case to be conducted in the next section, I would like to note here a few key features of the Operation. While multiple interpretations of

[173] Anthonimuttu reported details of the episode to Minister Dewanayagam and wrote to the President himself (Ibid).

[174] Dewanayagam conducted press conferences on the 8th September, 16th September and 18th October and challenged the government. On the 8th, Minister Devanayagam reported how landless peasants were being brought to Vadamunai in the Maduru Oya west bank that fell within his electorate. He circulated copies of the letter the GA had sent to the Ministry of Home Affairs which were copied to him, too (Sabaratnam 2004). In his second press conference Devanayagam warned of a confrontational situation in Batticaloa between the Tamils and the Sinhalese. He distributed photographs to prove the growth of settlements.

[175] The leadership of the Tamil United Liberation Front, the main democratic party representing the Tamils, were overseas at that time, and alerted the Indian Government and the Indian Prime Minister Indira Gandhi (Sabaratnam 2004).

[176] On 30th September 1983, the Sinhala daily *Davasa* published a news item about fifty families in Hathareskotuwa who would be given land in Dimbulagala of the Maduru Oya Scheme, upon responding to a request by the Hathareskotuwa Village Development Society.

[177] On 17th October 1983, the English Daily *Sun* under the headline "Stateless persons encouraged to encroach on state land in North and East" reported that "hordes of stateless persons of Indian origin are moving into settlements in what appears to be a highly organised exercise to form a human buffer zone enveloping the districts of Batticaloa and Jaffna". According to this report, 5000 families had been settled from July 1983 to 17th October 1983. On the 20th October *Sun* published a letter sent by Minister Devanayagam responding to the above report published on the 17th and responded with another article with the title "Encroachment syndrome blows a fuse: Deva's tirade against *Sun*: A mischievous twist". On 23rd October, the Sinhala weekly *Riviresa* published an article by the monk Madihe Panyaseeha with the title “Anavasara Padinchi Thahanama Sinhalayanta Pamanakda?”, proposing to evacuate both Indian and Sri Lankan Tamils from the North and the East who were settled through illegal means.

[178] President Jayawardene dispatched Minister Ranil Wickremasinghe to Maduru Oya for an independent report, sent Kaduwela MP and a District Minister Paul Perera to dismantle the settlement and ordered the arrest of key players involved. Gunaratne who was in hiding from the 21st October surrendered to the police on 28th October 1983. In early 1984 the detention order on Gunaratna was revoked and the case was consequently, dropped (Gunaratne 2009[1988]).

[179] The first phase of the operation was eventually replaced by a plan to arm and train Sinhalese villagers in the border villages in Padaviya, Trincomalee, Malwathu-oya and Tatirimale when the dust of the conspiracy had settled, in early 1984. This new round of discussions with the renewed objective started by the end December 1984 with a new set of actors that included Ravi Jayawardene (the son of President Jayawardene) and Devinda Senanayake (the grandson of Prime Minister D. S. Senanayake) with Gunaratne playing the role of facilitator, again. Learning lessons from the Maduru Oya episode, the initiative to arm Sinhalese peasants was conducted as a low-key operation. Ravi Jayawardene's involvement in training armed men also resulted in the formation of the Special Task Force which started its operations as a unit providing security for President Jayawardene, later becoming a specially trained unit of the police who were involved with military operations (Gunratne 1990; 2009[1988]). According to Sabaratnam (2004) the second phase of this overall plan, which was not discussed by Gunaratna in his book, was to redraw the provincial map of Sri Lanka to create five provinces out of the existing four. By redrawing the boundaries of the Northern, North Central, North Western and Eastern Provinces, suggestion was made, according to him, to create a fifth province that would be named the North Eastern Province consisting of the Polonnaruwa and Trincomalee Districts. This redrawing of boundaries, says Sabaratnam, would leave only the Northern Province as the Tamil majority province.

the AMDP had diverse objectives of achieving stability of the government within the Sinhala constituency (i.e. Narrative 1), legitimising the colonisation by the Sinhalese in the dry zone (i.e. Narrative 2) and strengthening the stake of Minister Dissanayake within the Sinhala South (i.e. Narrative 3) were constructed exclusively on a rhetorical platform of nostalgia for a glorious past, the Yaan Oya - Malwathu Oya - Madhuru Oya Operation, a technological intervention to modify the water distribution and settlement map, engages head on with the Tamil other. The rhetoric of a journey to the romantic Sinhala past didn't play a strategic role in mobilising the team of Sinhala officials, engineers and politicians to rally around the Operation. Countering the other and breaching the continuity of the Eelam land was a reason legitimate enough to mobilise nationalism among the members of the team. Connor's (1994, p. 103) argument that an ethnic group is other-defined while a nation is self-defined was less valid, in my opinion, particularly within the context that the sole claim by Sinhalese for the Sri Lankan state, the factor that elevates the Sinhala ethnic group to the status of a nation, was strongly contested by the separatist movement of Tamils at the time. Sinhalese was a nation with a mindset of an ethnic community, even if we consider the argument of Connor to be universally valid.

The second case I'm going to deal with, "North-Central Province Canal", seems to carry this argument further by highlighting an important dimension of othering, exclusion.

3.4.2 Case 2: North-Central Province Canal: exclusion of Tamils

The presence or the absence of North Central Province (NCP) Canal in the Mahaweli development map remains a central feature that decided what it Mahaweli development meant, from its inception up to date. The presence or the absence of the NCP Canal, the factor that also became a technical debate between the Sinhala and Tamil engineers, symbolised the presence or the absence of Tamils in the landscape of Mahaweli development. The NCP Canal, the canal that was supposed to take Mahaweli water from the Moragahakanda reservoir to the water scarce Tamil-dominant Northern Province through the Iranamadu Tank, can be considered an excellent case study that showcases the interdependence of the technical (technical features of a project), social (geographical spread and social aims) and political (individual, party and ethno-politics). The NCP Canal has also blurred the line dividing technical institution and the political establishment that are supposed to play two different roles according to conventional thought. As already stated, the NCP Canal and the Moragahakanda reservoir, key features of the Master Plan, the implementation of which were initiated by the United Front government in early 1970s, were dropped when the Jayawardene regime decided to accelerate the project. Irrespective of its absence from the AMDP map, the NCP Canal remained alive as a political

demand of the Tamil people. It also remained a slogan used by Sinhala politicians to canvas Tamil votes at platforms of presidential and general elections[180]. As a result, Moragahakanda reappeared in the Mahaweli development map as Moragahakanda - Kalu Ganga Multipurpose Development Project (MKMDP)[181] in January 2007, by bringing the NCP Canal and feeding the North with Mahaweli water back to the centre of debate. It has resulted in a tug-of-war over ownership of the project, between the previous Rajapakse regime and the current Sirisena regime[182], on the one hand, and renewal of claims for rights to Mahaweli water by the Tamil community, on the other. Since inauguration in 2007, the Moragahakanda scheme has undergone important changes under the ministerial leadership of Basil Rajapake, brother of the then President (Wijenayake 2015b). The changes in relation to the status of the NCP Canal are relevant to this discussion. According this new plan, the MKMDP is to be implemented in three phases over a long stretch of time: from 2015 to 2032; Phase I (2015-2024), Phase II (2024-2027) and Phase III (2028-2032). Contrary to the original understanding reflected in the Master Plan, which was the general understanding even by 2007, that the Moragahakanda reservoir is about the NCP canal (which aims to provide water to the North Central Province and most importantly to the Tamil dominated Northern Province), Phase I of the MKMDP that will be implemented during 2015 - 2024, does not include the NCP Canal in its plan of activities. According to this new scheme the NCP Canal is expected to be constructed during Phase II and Phase III, from 2024 to 2032. Out of the ninety kilometer stretch, only the first thirty kilometers of the NPC Canal, known as NCP (minor) is expected to be constructed from 2024 to 2027[183] and the rest, NCP (major) during 2028 - 2032[184] (Asian Development

[180] There was also the perception that the waters of Moragahakanda would be offered to the North through the NCP Canal as 'a gift from the South' when the final settlement of the Sri Lankan ethnic issue is worked out (Wijenayake 2015a; 2015b). Writing an article to Daily Financial Times with the title "Moragahakanda Project for North-South Reconciliation", Wijenayake (2015a), the former General Manager of the State Engineering Corporation of Sri Lanka suggests that "the transfer of a substantial amount of water to Iranamadu tank to fulfil the water requirement of the population of Killinochchi and the drinking water needs of the Jaffna Peninsula ..... would be a gesture certainly to be appreciated by northerners and would be grateful to their Southern counterparts resulting in cordial relations between north and the south".

[181] In addition to Mahaweli water, water from the Kalu Ganga (river) will also be channelled to the Northern Province under this project.

[182] The Moragahakanda Project was launched twice, once in 2007 by the President Mahinda Rajapakse and in 2016 by President Maithripala Sirisena, who came to office in 2015 by defeating Rajapakse. The Project was launched by Rajapakse in 2007 when Maithripala Sirisena was the Minister responsible, as Minister of Mahaweli Development. It was considered as a pet project of Sirisena's whose constituency, North Central Province, was expected to benefit from the Project. Due to the lack of funding, project preparation work commenced only in 2010, after the Ministry of Mahaweli Development was handed over to Basil Rajapakse, the brother of President Rajapakse. This was said to be done against the wishes of Sirisena. Construction of the dam commenced in 2012, with Chinese funds, with the Kalu Ganga funded by Arab countries and water distribution by the ADB (Wijenayake 2015b; Jayasekara 2016). However, after coming to power President Sirisena re-launched the Project on the 25th July 2016 by depositing the first item of "treasure" at the site of the dam amid the chanting of *Pirith* and the beating of traditional drums.

[183] NCP (minor) is designed to take water upto Kahatagasdigiliya in the North Central Province (Asian Development Bank 2014; Wijenayake 2015b).

Bank 2014; Wijenayake 2015b). This means that the Iranamadu reservoir, the main reservoir in the north to be fed, will receive Mahaweli water only in 2032 if everything works out according to the plan[185]. Under this new plan, not only is the supply of Mahaweli water to the North being pushed to the end of the timeline, but the amount of water that is supposed to be sent to the water-stressed North is also planned to be channelled elsewhere. Interestingly, a new canal- the North Western Province (NWP) Canal, has now been initiated following instructions from the Secretary to the Ministry of Mahaweli Development in 2010, according to Wijenayake (2015b). By accommodating the wishes of President Rajapakse and Minister Rajapakse, the NWP Canal took priority over the NCP Canal and is to be urgently implemented under the Phase I. NWP Canal "with no relevance to the main project", is to absorb a major portion of Moragahakanda water[186] (Ibid). Less than a quarter of the total amount of Mahaweli water that enters the NCP Canal is expected to reach the Iranamadu reservoir to be redistributed to the water-stressed Northern Province thereafter[187]. So even after diverting the water of the Moragahakanda reservoir away though the newly emerged NWP Canal, what is left to be channelled to the North is also absorbed by the NCP (minor) to be distributed in the North Central Province[188]. The Chief Minister of the Northern Provincial Council, C. V. Vigneswaran renewed claims for the Tamil peoples' right to Mahaweli water, immediately after the Moragahakanda reservoir was ceremoniously opened by President Sirisena on the 25th July 2016. He expressed his views during a meeting held on 26th July at the Jaffna Irrigation Auditorium, to educate representatives of JICA and a group of Northern Provincial councilors, regarding the benefits to be passed on to the North. Arguing also on the ground that the central government would take action to set up Sinhalese settlements in the north if it were to hold sole ownership of the project, he demanded an agreement between the Central government and the Provincial Council in this regard (Hirunews 2016).

This long process of attempting to include and then exclude the NCP in the map of the AMDP points to the complexity of Sinhala nationalism at work. By being involved in the decades-long civil war with the Tamil militancy and defending the continuity of the territory shared by both the communities, the Sri

[184] The final stretch of sixty kilometers named as NCP (major) is expected to take water from Kahatagasdigiliya to the Chemadukulam reservoir in the Northern Province, by 2032. Mahaweli water of Chemadukulam will reach Iranamadu reservoir though natural drainage channels (Ibid).
[185] ADB funding is assured only for Phase I (Wijenayake 2015b).
[186] Sixty seven million cubic meters of water is said be diverted through NWP Canal to reservoirs in the North Western Province (Asian Development Bank 2014; Wijenayake 2015b).
[187] Out of four hundred and fourteen million cubic meters of water that enters the NCP Canal, only a hundred million cubic meters ultimately reaches Iranamadu (Ibid).
[188] Tanks in Anuradhapura alone, one of the two districts of the North Central Province, will receive twice the amount of water to be sent to the North (Ibid).

Lankan government was playing a game that looked paradoxical. As a feature common to other nations, the Sinhala nation was policing the nation's symbolic boundaries from the Tamil minority. The Mahaweli Valley, the land and water of the region, claimed by the *Mahaweli Vansaya* as the heartland of Sinhalese, play a special symbolic role in the narrative of the Sinhala nation and in defending the boundary bordering the Tamil other. The regular exclusion of the Tamils, or at least subordination of them through inequitable treatment is, hence, an important practice. The other face of this dual approach is to send signals of inclusion while maintaining exclusion as the fundamental guideline.

One such signal - an alternative response to the NCP Canal proposal, and an option that has received the blessing of the Sinhala nationalist lobby, can be found in the local language publication "Wewa" (the tank) by Udula Awusadahami, architect and former employee of the Central Engineering Consultancy Bureau (CECB) and a popular commentator on Sinhalese ancient irrigation systems (Awusadahami 2015[1999]). In his Chapter on “Who Needs Moragahakanda Reservoir”, Awusadahami argues the case that the Reservoir is unwarranted. According to him "the day the water of the central hills is taken to the far North is the day the South and the North will be divided by water" (Ibid, p. 159). In an interview with me, he summarised his objections against the NCP Canal by saying that "Taking 'Sinhala water' to the North is problematic" (Awusadahami 2016). In his next chapter he refers to the famous proposal "A River for Jaffna", as the solution for water-stressed Jaffna, the capital of the Northern Province (Ibid). The proposal made three hundred and fifty years ago by the Dutch Captain Hendrile van Reede and improved by British government agents and irrigation engineers, was presented by the Tamil engineer S. Arumugam in 1954 as a detailed plan, "A River for Jaffna", which was also known as the Arumugam Plan by now. The plan was to gradually convert Elephant Pass - the lagoon adjoining the Jaffna Peninsula, into a fresh water lake by preventing the entry of sea water into the lagoon on the one hand, and allowing the inflow of water from Kanakarayan Aru[189] on the other. The salinity of the adjoining inland lagoons, Vadamarachchi and Upparu, is also expected to be dealt with when fresh water from the Elephant Pass lagoon is allowed to flow through a canal, eventually making the lands in the peninsula suitable for use for agricultural purposes and the well water for drinking (see *Map 2*). This scheme that was nearly implemented in the 1950s, however had to be abandoned, as a result of the damage caused by severe floods[190] (Wijenayake 2013; Arumugam 2015). Awusadahami's proposal, in my opinion, is a reflection of

[189]. Kanakarayan Aru is a small river in Northern Province which starts its journey from the Vavuniya district, flows through the districts of Mullaitivu and Kilinochchi and reaches the sea.

[190] This proposal reemerged during the time of President Jayawardene but the subsequent ethnic tension in 1983 prevented the government from taking further action. Interest was refueled in 2007, when engineer Thiru Arumugam presented his father's 1954 plan at a workshop organised by the Pugwash Conferences on Science and World Affairs. The interest generated

the Sinhala mindset that seems to be embedded in the engineering designs of Mahaweli development since the 1960s. Without denying the issue of water-stress as a concern of the Tamil people and hoping that the issue would be solved through local means using locally available resources found in the North, the Mahaweli is perceived as a Sinhala property carrying 'Sinhala water' that should be used for the benefit of the Sinhalese. Domination over, and exclusion of 'others' and policing of the nation's symbolic boundaries is recognised as a common feature of nationalism (Lamont and Molnar 2002; Bonikowski 2016). By arguing a case that nationalist and ethnic policies are not just a by-product of modern state formation or of industrialisation, but that modernity itself rests on a basis of ethnic and nationalist principles, Wimmer (2002) points out that the main promises of modernity - political participation, equal treatment before the law, dignity for the weak and poor and social justice and security - were fully realised only for those who were regarded as true members of the nation and not for others (p.1). Subordination of others over nationals through discriminatory treatment is a standard practice in nationalism (Salame 2004, p. 442). Preference in resource allocation for the true members of a nation, as is the case for Sinhalese when it comes to Mahaweli water and exclusion of 'others', the Tamils in our case, fits well with the arguments forwarded by Wimmer and Salame on exclusion and subordination. Wimmer (2002) goes on to discuss ways in which nations mobilise action against others. Exchange of people, expulsion and ethnic cleansing are some of them (p. 3).

"Yaan Oya - Malwathu Oya - Madhuru Oya Operation" and "North Central Province Canal" show how intensively a technological system can be linked with politics and with nationalism, in particular. Engineers were at the centre of both cases. Given below is a discussion on the political role of engineers, on the one hand, and on the politics of engineering design, on the other.

3.5 Engineers

Writing a general overview on engineers and engineering history Picon (2004) stresses this relationship between engineering and the non- engineering social space. By taking the history of French engineers which is closely related to the development of the modern French State and administration as an example, along with several others, he argues that "it is often easier to relate engineering history to political and social issues than to purely scientific and technological ones" (p. 427). The original plan of

by the presentation resulted in two resolutions; one by the Pugwash group themselves at the end of the workshop and the other by the Institution of Engineers at their Annual sessions, asking the government for immediate implementation of the plan. Even though the implementation of the plan did start in 2008, concerns have emerged as a result of the slow progress and the resistance of the fishing community involved (Wijenayake 2013; Arumugam 2015).

the Yaan Oya - Malwathu Oya - Madhuru Oya Operation to breach the continuity of the traditional homeland of Tamils was designed at the headquarters of Mahaweli operations which housed the three institutions responsible for the implementation of the AMDP: the Ministry of Lands, Land Development and Mahaweli Development; the Mahaweli Authority; and, interestingly, the Central Engineering Consultancy Bureau (CECB). Discussions to devise the plan were held regularly at the CECB itself - in the seventh floor office of Gunaratne who was an Additional General Manager of the CECB[191]. The CECB was the local counterpart for all foreign consultancy firms involved with designing and constructing the AMDP[192]. According to the Gunaratne's narrative, several key players joined the planning process at different stages. T. H. Karunatillake, Director Planning at the Mahaweli Ministry was the mastermind of the overall plan[193]. Minister Dissanayake, G. N. P. Panditharatne, Director General of the Mahaweli Authority and A. N. S. Kulasinghe, the eminent civil engineer and the founder Chairman of the CECB, were in agreement with the plan to varying degrees. "Herman (Gunaratne) did that with the blessing of Panditharatne. Minister was not informed well and JR (Jayawardene) knew nothing about it", according to one of my informants, who explained the evolution of the plan to me. Following instructions from Kulasinghe, the top leadership of the CECB contributed technical expertise vital to implement the plan. The General Manager of the CECB, G. G. Jayawardena and Deputy General Manager, H. B. Jayasekera were sent immediately to the Yaan Oya basin by Kulasinghe, to provide him with a pre-feasibility report. Gunaratne (2009[1988]) describes in detail the role played by the Chairman, General Manager and the deputy General Manager of the CECB in preparing the pre-feasibility report within a few days. After a tour of inspection Jayasekera proposed that an earth-filled dam be built within six months which would cost approximately Rs. 300 million. Jayasekera, highlighting the urgency of implementing the project, recommended to rush it through and advocated that people should be given land even before the dam was built. The political and administrative leadership of the Mahaweli development raised funds and

[191] Gunaratna joined the CECB in 1980 as an additional General Manager whose responsibility was to disseminate news and be in charge of the mass media apparatus within the Ministry of Mahaweli Development (Gunaratne 2009[1988]).

[192] Technical staff of the CECB assisted in the planning, investigation, design and construction supervision works. The CECB was solely responsible for the project management and design and supervision of the peripheral works of the project which included relocation of roads, towns and villages and the provision of infrastructure services. The CECB also advised and assisted the Client, the Mahaweli Authority of Sri Lanka in the management of the projects (see http://www.cecb.lk/sri-lanka-dams.html).

[193] As stated by the former officials of the CECB whom I interviewed, "Karunathila's plan was a response to the settlement of Indian Tamils in the Northern region" (Informant 8). According to UTHR(J) (1993b) it is, however, "too naive to credit Karunatilleke with having originated the possibilities of Systems B, I, M and L"."The establishment had a mind of its own and discretion was its code", observes (UTHR(J) 1993b). As discussed above in the Chapter, Systems B, I and M were already a part of the Master Plan that was developed in 1960s. What Karunatilleke has done could have been to suggest the re- inclusion of Systems I (Malwathu Oya) and System M (Yaan Oya) back in the AMDP and settle Sinhalese as a part of the political project to breech the continuity of the "traditional homeland" of Tamils.

were ready for a mass scale settlement in Yaan Oya, when Maduru Oya overtook the agenda with the involvement of Dimbulagala Seelalankara Thera.

Whether the involvement of the CECB and its top leadership in the Yaan Oya - Malwathu Oya - Madhuru Oya Operation can be considered a collective involvement of engineers and an involvement of an engineering institution or an accidental involvement of individuals who happened to be working for a professional organisation, is a matter for debate. Literature on engineers and their role in nationalism and nation building can be used to identify a range of involvements. Engineers' involvement as individuals, as small groups and as communities is recorded mainly in developmental nationalism where the modern state was in construction[194] (e.g. the case of the Hydro Electric Scheme discussed in Chapter 2) as well as in ethno nationalism where ethnic communities were on their way to become ethno nations and were in defence of their national boundaries from others, after they received the status of being a nation (e.g. the case of the AMDP as discussed here). What is more relevant to our discussion on the AMDP, however, is the involvement of engineers in the category mentioned second, in the kind of nationalism that looks either towards the past or across the boundary of the nation towards the other. The literature refers to at least a few such cases involving engineers as individuals and as groups. Barnes Wallis who was aiming to revive the greatness of the English nation through his designs of airplanes and submarines and envisaged a "second Elizabethan Age", is one such example (Zaidi 2008). The four German engineers of the Weimar and Nazi eras, Eugen Diesel, Viktor Engelhardt, Heinrich Hardensett

[194] The predominant position of technological advancement and industrialisation in the modern developmental state has brought engineers to the forefront of modern nation building. As discussed in Chapter 2, the prominent examples from the South Asian region for individual involvement in developmental nationalism are Mokshagundam Visvesvaraya and D. J. Wimalasurendra. B. J. Habibie, the Indonesian aeronautic engineer, the State Minister for Research and Technology and the Chair of the Agency for the Assessment and Application of Technology (BPPT), with his close personal relationship with President Suharto, offered a technology-based development strategy to accelerate the transformation of Indonesia from an agricultural-based society to a modern industrialised nation (Amir 2008, p. 318). Writing on national identity of inter-war Greek engineers, Antoniou *at el* (2007) identifies a list of engineers from the early twentieth century - for example Themistoklis Charitakis, Nikolaos Kitsikis and Athsnasios Roussopoulos, who represented the community of engineers who underwent an ideological radicalization through the discovery and appropriation of the ideology of technocracy and canvassed for technical state of varying degrees (pp. 242, 252). During this era of rationalisation, the era during which the industrial and technological development of Greece was visualised, the entire community of engineers was considered important, equally by the community of engineers themselves and by the political leadership of the country. Eleftherios Venizelos, the Prime Minister at the time, argued in favour of a stronger role for engineers in the country's public affairs (p. 249). Writing an introduction to a special issue on the national identities of engineers Chatzis (2007) gives the credit to the role played by engineers in general in the formation of modern state that was bound up with the promise of a brighter future (p. 194). French state engineers of the first half of the nineteenth century, as a community, were considered not only as technical experts but also as members of the intellectual bourgeoisie (Belhoste and Chatzis 2007). According to Belhoste and Chatzis, "French technocrats were not nation builders, however, serving the Nation was a major part of their identity" (p. 217). Mexican engineers were a part of a nationalist movement during the early twentieth century and participated in the nationalisation of Mexican oil and organisation and management of state agencies by 1940s. By continuing the tradition of being a main player in Mexican nationalism, Mexican engineers played a prominent role in the mid twentieth century in the transition from a socialist state to a modern industrial technocratic state. Quite often engineers held top positions in the Mexican state administration, according to Lucena (2007, p. 283).

and Mervin Holzer, shared a common interest in nostalgia for a German past that needed to be revived (Herf 1984). For Diesel, the present was an age of despiritualisation (p. 163). Like Diesel, Engelhardt too exempted technology from their indictment of a godforsaken present. Parallels could be drawn between Engelhardt's attack on modern physics and Nazis' effort to establish an Aryan physics (p.178). After the Nazi seizure of power, Hardensett and Holzer both urged their fellow engineers to rally around the new regime (p. 179). Antoniou et al (2007) refers to a similar case in Greece. According to them the dictatorship of Loannis Metaxas, a former military engineer and a follower of Mussolini, was a rule that proposed a linear continuity between ancient Greece and the modern Greek nation. The cornerstones of Metaxas ideology, according to Antoniou et al, were the return to the great and eternal essence of Greek civilisation, the summoning of an eternal Greek spirit and the domination of spirit, faith, and collective over soulless matter, cold reason and individualism (p. 253). The involvement of individual engineers in the Yaan Oya - Malwathu Oya - Madhuru Oya Operation is different to the experiences discussed above in several senses. While the English, German and Greek experiences were positioned on discourses on the greatness of the nations' pasts, the Operation designed at the headquarters of the CECB aimed to deal with the Tamil other through action. Rather than constructing a discourse, the focus was on practical action, to nullify the Tamil claim to a homeland. In contrast to the other countries' cases, the names of the engineers who joined the Yaan Oya - Malwathu Oya - Madhuru Oya Operation did not appear prominently in the nationalist narrative of the AMDP, for two reasons. Firstly, they didn't belong to the core group of players who conceptualised the operation. Secondly, the secrecy maintained by the players of the Operation and the silence observed by the media prevented their names from being incorporated in the Sinhala nationalist narrative.

The involvement of engineers is also observed in the case of the North-Central Province Canal. This time it was more a collective than individual involvement. According to the narrative of the former officials of the CECB, who were senior engineers whom I interviewed in the course of my fieldwork, the decision to drop the Moragahakanda reservoir and the NCP Canal from the AMDP - the ethno political decision that affected Sinhala - Tamil relations in a serious way, was a technical one (Informant 8 and 9). As per this technical narrative, the draft Master Plan as a proposal of possible options of reservoirs, offered two choices to Sri Lankan decisionmakers; "high Victoria - low Randenigala" or "low Victoria – high Randenigala", referring to the heights of Victoria and Randenigala dams and therefore the amount of water that can be retained. "Low Victoria - high Randenigala" was considered the best option to divert Mahaweli water to the North and the other, "high Victoria - low Randenigala", meant no Moragahakanda and no NCP Canal. According to my informants, "low Victoria - high Randenigala" was

the option that was promoted during 1960s and 1970s, by the CECB which was dominated by Tamil engineers. "Most of them were Tamils and most were Christians", according to one of them. In his Chapter on “Who Needs Mokaragahakanda Reservoir?”, Awusadahami also argues the case that the Reservoir is unwarranted and was a proposal forwarded since early 1960s by "a group of engineers", referring most probably to the same group of Tamil engineers. As per the narrative of my informants, the preference for "low Victoria - high Randenigala" was a result of racial bias among a group of Tamil engineers, Tamil officials and politicians favouring Tamil interests. It was the popular belief among the Sinhala engineers at the CECB that the Minister of Irrigation, Power and Highways of the United Front government (1970-1977), Maithripala Senanayake, under whose purview the Mahaweli diversion fell, was influenced by Tamil interests in two ways. On the one hand, T. Sivagnanam, the Secretary to the Ministry was a Tamil who was perceived to promote the Tamil cause. Ranji Hardy, the high profile Tamil journalist and the Minister’s new wife, was considered on the other hand, to further influence the Minister to favour the "low Victoria - high Randenigala" option[195]. "Sivagnanam and Ranji had a good understanding and they pushed for Moragahakanda", according to one of my informants. "The duo succeeded in receiving the cabinet approval for the "low Victoria - high Randenigala" scheme". This decision, however, was overturned when the United National Party government came to power and decided to accelerate the programme. A top administrator of the CECB, a senior Sinhala engineer who was also involved with the previous case, "Yaan Oya - Malwathu Oya - Maduru Oya Operation", is credited by my informant for changing the opinion of the Jayawardene government to go for the "high Victoria - low Randenigala" option, forcing the components of Moragahakanda and the NCP Canal to be dropped from the AMDP, as a result. The "high Victoria - low Randenigala" option was promoted as the more technically viable option out of the two[196]. In comparison to the Yaan Oya - Malwathu Oya - Madhuru Oya Operation where the roles of individual engineers were prominent, the narrative of the

[195] An unclassified cable sent from the Embassy of the United States in Colombo in 1976 and published by Wikileaks identified Senanayake as being "something of a bridge to Tamil community in Sri Lanka after his marriage in 1963 to Ranji Hardy, a Tamil". "Mrs. Ranji Senanayake, aged in her late forties, is colorful former newspaper woman..... her race - Tamil religion - Anglican - were thought to be political liability for Senanayake's career at time of their marriage in 1963. However, this does not appear to have been so. Mrs. Senanayake is said to be bright, tough, and very ambitious for her husband. She has made no secret of her belief that her husband should someday become Prime Minister", continued the cable (Public Library of US Diplomacy 1976). Senanayake's relationship with Handy and her influence on him were topics of public discussion in the 1960s. Imbulana (2016) refers to one such incident in parliament where Maithripala Senanayake kept taunting Dudley Senanayake over the concession Dudley's government was allegedly granting to the Tamils. Dudley is said to have shot back "Mr Speaker, I must congratulate the Hon. Member for Medawacchiya on his finding a way to observe "Sinhala Only" by day, and the "Reasonable Use of Tamil" by night.

[196] Maithripala Senanayake, the former Minister, in 1984 blamed the UNP government for this change in decision to go for a higher dam in Victoria and a lower one in Randenigala. He held this change of decision as the reason for the complete submersion of Theldeniya town, a traditional land of the Kandyan peasantry, a view that was held by others as well (Peiris 1984; Awusadahami 2015[1999], p. 158).

North Central Province Canal refers to the involvement of collectives of engineers divided along ethnic lines. There were two camps of engineers who were involved with the debate on the technical viability of the "low Victoria - high Randenigala" scheme and their views in favour and against coincided with the differences of their ethnic identities, leaving it unclear whether it was the engineering or nationalism or, in fact, nationalism of engineering that made Tamil and Sinhalese engineers stand on different sides of the technical debate.

Parallels can also be drawn between the involvement of Sinhala and Tamil engineers of the CECB in deciding the fate of the NCP Canal, and other such involvements by engineers in other countries. Antoniou et al (2007) and Bassett (2009) refer to the involvements of small groups of engineers in the process of modern state building in Greece and India, respectively[197]. Examples can also be given for the involvement of engineers attached to engineering institutions in building industrial nations. Amir (2008), discussing the process of industrialisation in Indonesia, refers to the roles played by engineers from the Agency for the Assessment and Application of Technology (BPPT) and the engineering academics of the Institut Teknologi Bandung (ITB)[198]. While the experiences of Greece, India and Indonesia were about the role of small groups of engineers in imagining an industrially advanced common future, the following examples from Mexico and France, the closest cases to the role played by CECB in the “North-Central Province Canal”, indicate to involvements by engineers in mobilising Mexican and French nationalism against an enemy or an external threat. Under the subtitle "patriot engineers constructed and defended the Mexican territory" Lucena (2007) records three occasions during the first half of the nineteenth century where engineers attached to different institutions dealt with the ‘other’ (i.e. non-Mexican). Criollo[199] and Mestizo,[200] engineers of Colegio Nacional de Mineria "discovered, surveyed, mapped and wrote about their territory and natural wealth, distinguishing what was 'ours' (Mexican) and 'theirs' (non-Mexicans)" (p. 277). According to Lucena, patriotism among engineers was further reinforced by the threat of foreign invasions. It is said that the military engineering students from the

[197] Antoniou et al (2007) refers to "Zurich Circle", the small group of Greek engineers, graduates of German-speaking Polytechnic Schools, especially those who were graduates of the Federal Polytechnic School of Zurich, who made a decisive contribution in the social and institutional formation of the Greek industrial class and in Greek industrialisation (p. 245). MIT trained Indian engineers can be placed at an equal level with the "Zurich Circle" from the point of privileged training and their influence in modern nation building. Even though they were an extraordinarily tiny group unrepresentative of the larger Indian population, MIT Alumni Association of Indian engineers advised the government on an informal basis and occupied "an astounding number of the high-level positions in the Indian technical community (Bassett 2009, pp. 228-230).

[198] The engineer colleagues of Habibie, the aeronautic engineer who visualised the modern industrial nation of Indonesia, at the BPPT worked with him to build the industrialised nation of Indonesia during the latter part of the twentieth century (p. 318). According to Amir, a number of Habibie loyalists were faculty members at ITB and for years ITB graduates filled key positions in projects that were designed to move Indonesia towards industrialisation (Amir 2008, p. 319).

[199] Criollo refers to the community of American born of European ancestry (Lucena 2007, p. 276).

[200] Mestizo refers to the community of American born of mixed white and Indian ancestry (Lucena 2007, p. 277).

Military School became child heroes after they unsuccessfully defended the Castle of Chapultepec from US invaders (p. 277). Engineering students of the Colegio de Minas were also called to defend Mexican territory in the event of another invasion, says Lucena (p. 278). The discourse on French nuclear engineers is also a case of 'othering' an alien (i.e. American technology) and re-establishing the lost glory of France, lost as a result of "wartime defeat, and/or postwar decolonization, and/or general economic and industrial backwardness" (Hecht 1998, p. 330). While referring to technological prowess as a main element of French national identity, the French nuclear program was treated by Hecht as a site for articulating and negotiating the meaning of a technological France and reviving its lost glory (Ibid).

3.6 Engineering designs

The two cases "Yaan Oya - Malwathu Oya - Madhuru Oya Operation" and the "North Central Province Canal" add a new dimension to the existing discussion that was generated by the five narratives. If the five narratives described above provide texts to uncover the Sinhala nationalist logic at work when the AMDP is in full operation, the two cases "Yaan Oya - Malwathu Oya - Madhuru Oya Operation" and the "North Central Province Canal" refer to politics at play in the early stages; at the stage of designing the Project. *Map 3* shows how the project map of the AMDP underwent changes in the process of designing, highlighting the relationship between technical details (e.g. heights of dams and lengths and spread of canals) and national politics (e.g. responses of the Sinhala nation and counter responses by the Tamil nation).

The case of the "North Central Province Canal" shows how certain technical options were made and by whom, how technical components of the overall technological system of the AMDP were dropped on the grounds of technical feasibility and how the technical sketch of the AMDP was amended within a context of intense ethnic tensions, conflicts, a civil war and post-war politics between the Southern government and Tamil counterparts of the North; each representing the interests of the Sinhala and Tamil nations, respectively. The choice of the ‘high Victoria - low Randenigala’ option promoted by the Sinhalese engineers on technical grounds, overlapped surprisingly, with the interests of the Sinhalese to prevent 'Sinhala water' flowing to the 'land of Tamils' by not going ahead with the construction of Moragahakanda reservoir and the NCP Canal. Amendments done to the technical design during the recent past to add Moragahakanda and the NCP Canal and the very recent attempt thereafter, to introduce and prioritise the new North Western Province (NWP) Canal that was never in the Mahaweli development landscape since its origin in the 1960s, too stays well in line with the Sinhala logic of

excluding the Tamil other from sharing the benefits of development. The case of “Yaan Oya - Malwathu Oya - Madhuru Oya Operation” goes a step further in highlighting the intimate relationship between technical design and nationalist politics. As expressed by the designers themselves, the expansion of the reservoir-tank-canal web of the AMDP in Yaan Oya, Malwathu Oya and Madhuru Oya was done with the sole purpose of breaching the continuity of the Tamil land, by establishing Sinhala settlements at three points. I would like to argue that the presence of nationalist politics at the stage of designing qualifies the AMDP to be identified under the category of technologies which are inherently nationalistic[201]. The design of the AMDP was most probably shaped by the interests of Sinhala nationalism on the one hand, while the AMDP being constructed based on the above mentioned design results as a tool to perform a variety of Sinhala nationalistic functions, on the other.

By referring to Sri Lankan irrigation settlements Pfaffenberger (1992) observes that "every aspect of social life, including family life and worship, was designed along with the dams and canals" (p. 291). What Pfaffenberger perhaps missed in his observation is a reference to the key role played by the interests of Sinhala nation, in the kind of design he talks about. As informed by the five narratives described within the context of this Chapter, the AMDP, while being diverse in the way one can make sense of it, points to a common thread, a rationale shared by all the discourses, which is the promotion of the agenda of Sinhala nationalism. Based on a logic that is very Sinhala Buddhist, the complex network of reservoirs, dams, canals, highways, peasant settlements and power stations of the AMDP reorganised social life, not just along waterways constructed under the AMDP, but the social life of the entire population of the island, by presenting modernism within a cover of Sinhala tradition; by reediting the political power balance in the Sinhala constituency; by including Sinhalese in and excluding Tamils from the process of development; by engaging to counter the Tamil other and even by reorganising the

[201] For many theorists, according to Matthewman (2011), "what a technology is cannot be determined by design. Instead, technological meaning is always to be found in use" (p. 80). The telephone, that was originally designed as a mass broadcasting technology, but established later as a person-to-person technology, is taken by Matthewman as an example to support the argument (p. 80). Social practice, not design, ultimately determines meaning, is the rationale behind this thought. The focus of this argument is the process of meaning construction and the stage at which the final meaning is consolidated. It doesn’t, however, deny the existence of political intentions of designers and their influence in deciding the shape of the technological system that has the potential of acting as a tool to achieve political objectives. In my opinion this argument doesn't work for the AMDP for several reasons. Firstly, the design restricts the use of the technological system (i.e. the AMDP) to its intended users (i.e. Sinhalese) so that the political intention accommodated in the design is also reflected in its use. Secondly, the political effect of the AMDP in dealing with the Tamil other is not really dependent on a discourse constructed to achieve the objective, but on physical action caused by absence of the NCP or presence of Sinhala settlements. Therefore, the general rule that the political effects of the technology are lost when the discourse cannot be sustained anymore is only partially valid here (Matthewman 2011, p. 83). Thirdly, as Winner (1993b, p. 369) argued for technological systems in general, the political meaning of the design of the AMDP is cemented by the broader political structures of Sri Lankan society, ongoing patterns of systemic inequality in the ethno-political landscape of the island and the working of power between the majority Sinhala and minority Tamil communities.

imagination of the Sinhalese about themselves and others. Not only did the AMDP rearrange the present, it also attempted to reorganise the past (e.g. through interventions such as the *Mahaweli Vansaya*). As discussed in the introduction, recent studies on technology are about the politicised nature of technology and the technological construction of the socio-political. Following the same trend, the AMDP can be seen as a classic example of (Sinhala) nationalist nature of technology and the technological construction of (Sinhala) nationalism.