



INTERNATIONAL
CENTRE FOR
ETHNIC STUDIES

Impacts of Infrastructure Development on Gender and Wellbeing in Coastal Communities: A Comparative Analysis of Batticaloa and Trincomalee Districts in Sri Lanka



**Nireka Weeratunge
Viyanga Gunasekera
Nadine Vanniasinkam**

**Impacts of Infrastructure Development on
Gender and Wellbeing in Coastal Communities:
A Comparative Analysis of Batticaloa and
Trincomalee Districts in Sri Lanka**

**Nireka Weeratunge
Viyanga Gunasekera
Nadine Vanniasinkam**

International Centre for Ethnic Studies

2023

@ 2023 International Centre for Ethnic Studies (ICES)

2, Kynsey Terrace, Colombo 8, Sri Lanka

E-mail : admin@ices.lk

URL : www.ices.lk

All rights reserved.

ISBN 978-624-5502-29-5

This publication is based on the research submitted to the ‘Social-ecological Dynamics in Rapid Economic Development: Infrastructure and Coastal Change in Southeastern Sri Lanka’ or SEDRIC project, funded by the French Government through the Embassy of France in Sri Lanka and the Maldives. Copyright to this publication belongs to the International Centre for Ethnic Studies (ICES). Any part of this book may be reproduced with due acknowledgement to the author and publisher. The interpretations and conclusions expressed in the study are those of the author and do not necessarily reflect the views and policies of the ICES or the donor.



INTERNATIONAL
CENTRE FOR
ETHNIC STUDIES

Cover : ‘Men and women pulling a boat returning from a fishing trip on to the beach, Batticaloa district’, photograph by Nireka Weeratunge

Printed by:

Horizon Printing (Pvt) Ltd.

1616/6, Hatharaman Handiya,

Malabe Road, Kottawa,

Pannipitiya.

**Impacts of Infrastructure Development on
Gender and Wellbeing in Coastal Communities:
A Comparative Analysis of Batticaloa and
Trincomalee Districts in Sri Lanka**

**Nireka Weeratunge
Viyanga Gunasekera
Nadine Vanniasinkam**

* Nireka Weeratunge, Viyanga Gunasekera and Nadine Vanniasinkam are Research Fellows at ICES.

Table of Contents

1. Introduction	1
2. Conceptual approach and methods	4
2.1 Conceptual approach.....	4
2.2 Methods	6
2.3 Study locations.....	8
3. Post-war political ecological context and coastal transformations.....	10
4. Gendered livelihoods and relations in coastal communities	29
5. Impacts of infrastructure development and community responses.....	36
5.1 Impacts of infrastructure development on coastal communities: Benefits and costs	37
5.2 Impacts of infrastructure development on coastal ecosystems.....	64
5.3 Responses of communities to negative impacts	70
6. Gender and wellbeing in coastal communities	75
7. Conclusion: Policy implications	84
References	87

List of Figures

Figure 2.1: Elements of social wellbeing in the context of infrastructure development and coastal transformation.....	5
---	---

List of Maps

Map 2.1: Location of study sites and infrastructure, Batticaloa (left) and Trincomalee (right) districts.....	8
Map 3.1: New tourism infrastructure on the Trincomalee coast (left: 2001; right: 2020).....	14
Map 5.1: Land cover changes in coastal Batticaloa district between 1994 and 2019	65
Map 5.2: Land cover changes in coastal Trincomalee district between 1994 and 2019	66

Acknowledgements

We would like to express our deep gratitude to the women and men, who participated in this study by sharing their invaluable life experiences and perceptions in the five communities¹ of Muhathuvaram and Venkarai in Batticaloa district, and Kadalveli, Aalaiyur and Karaipuram in Trincomalee district, despite the challenges of the COVID-19 pandemic.

We also thank the officers of relevant government institutions and representatives of civil society organizations who assisted in this research by sharing their knowledge at the national or district levels. These included officers from the Ministry of Industry and Commerce, Sri Lanka Tourism Development Authority, Departments of Coastal Conservation, Fisheries and Aquatic Resources, Forest Conservation and Wildlife Conservation, the Provincial Ministry of Tourism (Trincomalee) as well as the District Secretariats of Batticaloa and Trincomalee. Civil society organisations, whose representatives contributed their field experiences and/or research to this study, included Blue Resources Trust, Green Movement of Sri Lanka, National Fisheries Solidarity Organisation, Batticaloa District Fisheries Solidarity, Caritas-EHED, Handicap International, Oxfam, People's Aid (Thoppur), People Service Council (Trincomalee), Sarvodaya, Suriya Women's Development Centre (Batticaloa), District Fisheries Federation of Trincomalee, Viluthu (Trincomalee), Women Care Foundation (Muttur) and World Vision.

Our sincere thanks go out to Anuja Moses, Anvar Khan and Azhar Abdeen who ably carried out the qualitative interviews for data collection in the two districts, and without whose tireless effort this research could not have been conducted during the difficult COVID-19 period.

We extend our heartfelt gratitude to His Excellency Eric Lavertu, Ambassador for France, and Mr. Bernard Lelarge, Cultural Counsellor of the French Embassy for their encouragement and support of this publication, which resulted from the implementation of the SEDRIC @ SRI LANKA project on the Study of coastal socio-environmental changes, and strengthening of skills in interdisciplinary analysis of coastal changes, funded by the French Embassy.

¹ Study communities are indicated with pseudonyms throughout the text to protect the privacy and confidentiality of research participants.

This study was a component of the larger, collaborative Social-ecological Dynamics in Rapid Economic Development: Infrastructure and Coastal Change in Southeastern Sri Lanka (SEDRIC) research project with a consortium of partners from three Sri Lankan universities and ICES, led by the French Institute of Pondicherry (IFP). We benefitted from the engagement and discussion with our colleagues from IFP, Eastern University, Sri Lanka, University of Peradeniya and University of Ruhuna, especially in designing this study. We thank our colleagues from the GEOSpatial Monitoring and Information Technology department of IFP for preparing the maps and aerial photographs included in this report. We would also like to extend our thanks to Nayana Godamune, Dr. Joeri Scholtens and Dr. Rapti Siriwardane-de Zoysa for their external reviews of research ethics in relation to this study, including the qualitative tools for data collection. Finally, our sincere appreciation goes out to Dr. Julien Andrieu, the Team Leader of the SEDRIC project from IFP and Dr. Mario Gomez, the Executive Director of ICES for their continuous support for this study.

1. Introduction

The main thrust of the state's economic strategy in the Eastern Province of Sri Lanka in the post-war period (since 2009) has been on infrastructure development. In Batticaloa and Trincomalee districts, two of the three districts that constitute Eastern Province, infrastructure development has been particularly focused on increasing connectivity and trade with the rest of the island by demining, developing roads, railways, transport, electricity and water supply, as well as improving economic and living conditions of the population (Kelegama 2011; Perera 2014). National poverty reduction programmes were implemented alongside infrastructure development for livelihood development through micro-small enterprise promotion and micro-credit services, targeted at the large numbers of returning internally displaced persons (IDPs), who needed to be resettled. The government also supported private sector investment in establishing manufacturing industries, as well as tourism development. The focus on infrastructure development as a basis for economic growth was a deliberate decision by the state to counter the armed struggle for independence, based on political and language rights, and access to education and employment, waged by the LTTE and other militant groups during the 1983-2009 period of civil war. The assumption was that this trickle-down approach would meet the immediate economic needs and support recovery of the war-affected population of this region.

However, the dominant approach to infrastructure development has been accompanied by a heavy military presence (Bastian 2013; Buthpitiya 2013; Keerawella 2013; Perera 2014), exclusion of local communities in decision-making and/or access to employment in these development programmes (Buthpitiya 2013; Bastian 2013), inadequate power-sharing between central and provincial government (Bastian 2013; Perera 2014), and lack of attention to political and socio-economic grievances, peace building and reconciliation (Keerawella 2013; Bastian 2013; Perera 2014). Godamune (2019) in an assessment of women's livelihood outcomes and economic empowerment in the Eastern Province pointed out that enterprise promotion initiatives had not succeeded in bringing about any real improvements in livelihoods and better road connectivity had resulted in an influx of cheap goods, resulting in a loss of livelihoods in some trades. Moreover, women engaged in industrial work were considered vulnerable to inadequate enforcement of health and safety regulations, and harassment and violence in the workplace (Godamune 2019).

The main objective of this study was to assess the impact of post-war infrastructure development, specifically transportation, industrial and tourism projects, on the wellbeing of women and men in coastal communities. The socio-economic and environmental costs and benefits of these transformations on communities in the Trincomalee and Batticaloa locations were analysed, based on the social wellbeing approach (McGregor 2008; White 2008), using qualitative methods. This approach focuses holistically on the material, relational and subjective dimensions of wellbeing of households and communities, and was applied dynamically to compare wellbeing before and after the transformations that have occurred, as well as assess impacts on different ethnic communities (Muslim, Tamil, Sinhalese) in the two study locations. Special attention was paid to differences in impacts on women and men, incorporating rigorous gender analysis. The understanding of wellbeing was based on outlining the gendered livelihood systems in coastal communities and social relations in the pursuit of livelihoods. The concept of relational wellbeing was combined with a political-ecology approach to understand the post-war political context, relations of power and governance of marine ecosystems in the study locations.

The overall research question addressed by the study was:

What are the impacts of post-war infrastructure development on wellbeing of women and men in coastal communities in study locations in the Trincomalee and Batticaloa districts?

This was elaborated through the following sub-questions:

- What are the major infrastructure development projects in the study locations?
- What is the political-ecological context in which coastal transformations have taken place in the study locations?
- How is the livelihood system of coastal communities constituted and what kind of changes have taken place? How is this livelihood system gendered?
- What are the impacts of infrastructure development on the material, relational and subjective wellbeing of coastal communities? How are these impacts gendered?
- How have coastal communities responded to infrastructure development?
- What are policy implications and recommendations for sustaining social wellbeing and ecosystem health in the face of infrastructure development in coastal communities?

We will begin with a discussion of the conceptual approach and research methods in Section 2, followed by an analysis of the political-ecological context of infrastructure development in the study districts in Section 3. This is followed by an outline of the gendered livelihood system and social relations in coastal communities and the extent to which this has changed, following infrastructure development in Section 4. The next section (5) focuses on the impacts of infrastructure development on communities and the ecosystem, and how communities have responded to negative impacts. Section 6 provides an assessment of the overall gendered wellbeing in coastal communities in the study districts in the context of coastal transformations, while the conclusion addresses policy implications of the research findings.

2. Conceptual approach and methods

2.1 Conceptual approach

This study uses the 3-D social wellbeing approach, constituted of material, relational and subjective wellbeing (White 2008; McGregor 2008), and elaborated in the fisheries and marine studies literature (Coulthard et al. 2011; Weeratunge et al. 2014, Johnson et al. 2018) to analyse the social and ecological dynamics of infrastructure-related transformations in coastal communities.

Social wellbeing is defined as: “A state of being with others *and the natural environment* that arises where human needs are met, where *individuals and groups* can act meaningfully to pursue their goals, and where they are satisfied with their *way of life*.” (Armitage 2012, adapted from McGregor 2008)

The **material** dimension of social wellbeing focuses on what resources (*including the environment*) to which a person has access and the extent to which the needs of the person are met. This includes livelihoods, income, assets, natural resource stocks, food, water, air quality, waste disposal, health, and bio-geo physical processes. The **relational** dimension considers the social relationships in which a person engages to pursue or achieve wellbeing. This includes relations with nature and other human beings, such as relations with animals and plants, access to and tenure of natural resources/land/coast/sea, intra- and inter-household relations, gender and ethnic relations, community and extra-local relations which give access to resources and markets, and shape behaviour through institutions/social structures. These include relations with state, administrative, regulatory and law-enforcement agencies, civil society organisations, as well as private sector actors, such as companies, corporations and banks. The **subjective** dimension takes account of a person’s skills and knowledge, feelings, level of satisfaction and sense of security with the quality or way of life he or she pursues or achieves. It includes feelings of autonomy, freedom, satisfaction, dissatisfaction, sadness, happiness, as well as aspirations for the future. The social wellbeing approach is actor-centred and considers the dynamics of transformation from the perspective of affected individuals and groups. Wellbeing within this perspective is both a process (pursuit) and outcome (achievement).

- 1 **Micro:** individual, household
 2 **Meso:** community, district
 3 **Macro:** nation state, world

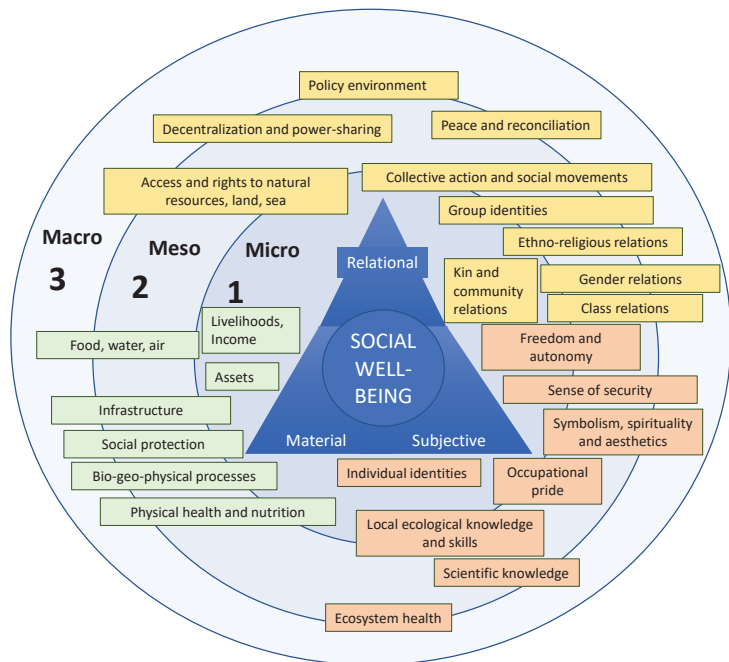


Figure 2.1: Elements of social wellbeing in the context of infrastructure development and coastal transformation

(Adapted from: Allison et al. (2020) *The human relationship with our ocean planet*; Weeratunge et al. (2014) *Small-scale fisheries through the wellbeing lens*.)

The three dimensions of wellbeing, although categorised separately for analytical purposes, are interrelated, and some elements of wellbeing, such as identity or health, can cut across two or three dimensions. Of the different elements of wellbeing indicated in Figure 2.1, the study focused on those that emerged as relevant in the research findings.

While both gender and power relations in general are implicit in the relational dimension of the social wellbeing approach, gender analysis (Kabeer 1999a and 1999b) and political ecology (Bennet 2019; Fabinyi et al. 2015) perspectives were used to strengthen the understanding of social relations and ecological dynamics. Kabeer (1999a) looks at gender from a social relations perspective within an institutional framework, which includes four domains – family/kinship, community, market and the state. Gender relations are seen as “constituted through the rules, norms and practices by which resources are allocated, tasks and

responsibilities are assigned, value is given and power is mobilized” (Kabeer 1999a, p. 12). Kabeer (199b) also emphasises the agency of women expressed in decision-making as critical to achieving equality in wellbeing outcomes, and points to the ways in which agency is exercised vis-à-vis different institutions, such as family/kin, community, market and state. This gender perspective, centred on social relations and agency, complements the actor-centred social wellbeing approach.

The political ecology lens used here is influenced by Bennett (2019) who emphasizes the role of power in the ocean and coastal environment, and the marginalisation of small-scale fishing/indigenous/coastal communities and Fabinyi et al. (2015), who have addressed local inequalities and perceived marginalities in fisheries governance in the Pacific. The analysis of the society-environment interface is also informed by Frerks et al. (2014) and Bavinck et al. (2014) who have challenged earlier mono-causal theories of conflict over natural resources centred on scarcity, greed or grievance, arguing that such conflicts are multi-causal, multi-level and involving multiple actors. Within this broader and more nuanced approach, environmental factors are combined with socio-political factors to explain conflict or contestation². The political-ecological perspective supported the analysis of contestation among different groups for natural resources, coastal land and the sea, where they occurred, the differential benefits and costs of development to groups, the space for participation by local communities in decision-making in relation to coastal governance and transformations, as well as factors for the presence or absence of collective action and social movements.

2.2 Methods

This research was based on a literature review, analysis of secondary data sources and qualitative methods of primary data collection. An assessment of research ethics was conducted by three external reviewers in relation to the project concept and qualitative research tools prior to data collection. Due to COVID lockdowns and restrictions on travel, three Research Assistants (RAs) were hired from the two study districts and a comprehensive, interactive, on-line training in qualitative methods was provided. They conducted semi-structured interviews mostly with district level key informants and residents of coastal communities, using remote/virtual methods. However, as government officers within the districts were reluctant

² In this study, we did not encounter overt conflict over resources but in several instances contestation of access to resources did take place.

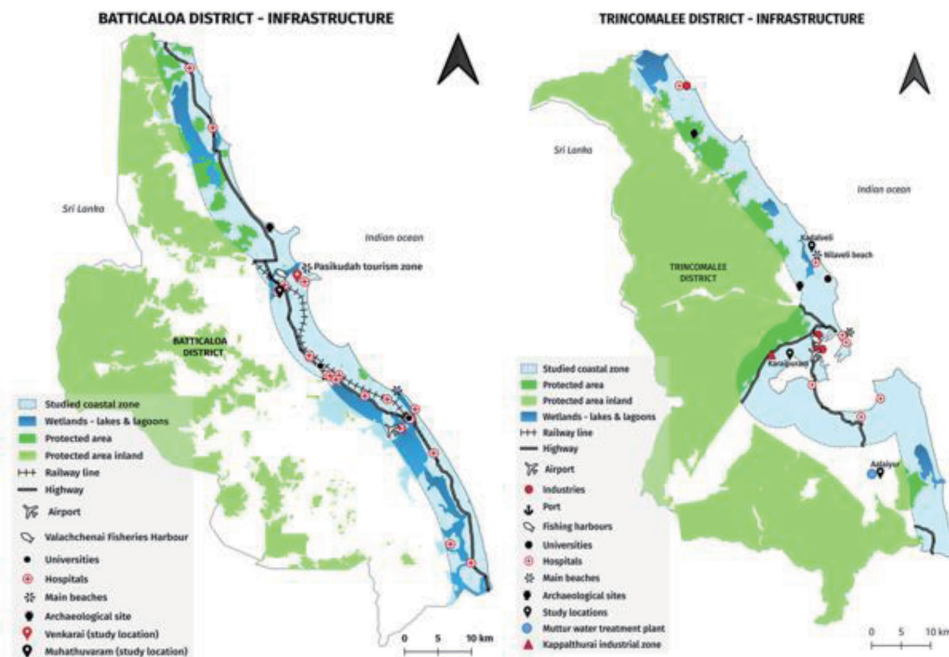
to participate in remote interviews, face-to-face interviews were conducted with key informants from the state sector. National-level key informants were interviewed by the ICES research team based in Colombo. Altogether 27 semi-structured key informant interviews with government officers and representatives of civil society organizations (CSOs) in sectors relevant to the study, such as planning, tourism, industry, fisheries, wildlife conservation, forestry, local administration, community development and women's empowerment were conducted at national level and in the two study districts in 2021. Based on these interviews, five coastal Grama Niladhari (GN) divisions (three in Trincomalee, two in Batticaloa) which had experienced infrastructure development were identified and 50 semi-structured, open-ended household interviews with purposive samples of women and men, affected and unaffected by infrastructure development and indicative of different types of livelihoods within coastal communities were conducted also in 2021, using remote or face-to-face methods, depending on the changing COVID context during the fieldwork period.

Selection of GN divisions for study took into account ethnic diversity in the two districts, as well as different types of infrastructure development, such as roads, bridges, water purification plant, fisheries harbour, industrial zone and tourism, either completed or on-going. As the qualitative purposive samples in each location were small (8-10) and COVID-19 restricted travel, research participants were identified with the support of civil society organisations working in these communities and/or local level administration officers. Thus, the limitations of the study are that sample selection and rapport-building with research participants were not done under ideal conditions, and could have hampered the quality of the data obtained.

Qualitative data analysis was based on the grounded theory approach (Glaser 1993, 2001; Strauss and Corbin 1998; Berg 2009). The data generated were analysed by open and axial coding to determine categories, patterns and sub-themes that emerge from the data, within a broader set of themes/concepts of the study. Categories/sub-themes were generated from the data by comparing across sets of sub-samples (women, men, five study locations). The categories, concepts, relationships and explanations that emerged from the data were related to the broad conceptual approach of the study and discussed in relation to the relevant literature on social and ecological dynamics in infrastructure development and coastal transformation.

2.3 Study locations

In Batticaloa district, two GN divisions, Muhathuvaram* in Koralai Pattu West DS Division in proximity to the Valaichchenai Fisheries Harbour, as well as Venkarai* in Koralai Pattu DS Division near the Pasikudah Tourism Development Zone were selected (Map 2.1 left). Muhathuvaram experienced the Valchchenai Fishery Harbour Rehabilitation Project, funded by the Asian Development Bank between 2009-2011 (ADB 2012). This component was linked to a larger project which included construction and rehabilitation of a road network, bridges, drainage, and irrigation canals. Venkarai was affected by the state-promoted Pasikudah Tourism Zone developed by private sector investors since 2009 with on-going development activities.



Map 2.1: Location of study sites and infrastructure, Batticaloa (left) and Trincomalee (right) districts (SEDRIC 2021)

* All names of study locations are pseudonyms following ethnographic convention to safeguard the privacy of research participants.

* All names of study locations are pseudonyms following ethnographic convention to safeguard the privacy of research participants.

In Trincomalee district, three GN divisions, Aalaiyur* in Muttur DS Division in proximity to Muttur Water Treatment Plant, Kadalveli* in Kuchchaveli DS Division, near the popular beach resort of Nilaveli, and Karaipuram* in Town and Gravets DS Division, in the vicinity of the Kappalthurei Industrial Zone were selected (Map 2.1 right). Aalaiyur underwent the construction of a water treatment plant, as well as roads and bridges built between 2015-2019 under the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project, also funded by the Asian Development Bank (ADB 2016). Kadalveli experienced expansion of beach tourism initiated both by external investors, as well as local people since the end of the war and is earmarked to be part of a larger 445-acre state-promoted Kuchchaveli Tourism Development Zone in the future. Karaipuram was affected by the construction and operation of a major 50-acre industrial zone to set up to 15 medium to large-scale industries, with direct employment of 1,800-2,500, financed by the Consolidated Government Fund (Invest.lk News 2018) under the industrial development policy of the Sri Lankan government, and is located alongside the Thampalagamam Bay. It comprised three phases of development between 2007-2020. The project is still on-going. The livelihood system in all coastal study villages constitute of a combination of fishing, farming and micro/small enterprises, with some tourism or industries-based employment. The population size of the five GN divisions studied ranged from 947 to 3,320, according to the 2012 Census statistics (DCS 2012). Muhathuvaram and Aalaiyur are predominantly Muslim communities, Venkarai and Kadalveli are predominantly Tamil Hindu communities, while Karaipuram has an ethnically mixed population of Sinhala Buddhist and Muslim households. Coastal communities in Venkarai, Kadalveli and Karaipuram experienced multiple displacements during the war and many of the population have been resettled in these study locations following the war.

* All names of study locations are pseudonyms following ethnographic convention to safeguard the privacy of research participants.

* All names of study locations are pseudonyms following ethnographic convention to safeguard the privacy of research participants.

* All names of study locations are pseudonyms following ethnographic convention to safeguard the privacy of research participants.

3. Post-war political ecological context and coastal transformations

This section contextualises rapid infrastructure development and its impact on communities and ecosystems in Batticaloa and Trincomalee districts on the East coast within the overall state strategy of prioritising infrastructure development in the post-war period (2009-) in the Eastern Province. Infrastructure development was promoted through the *Negannahira Navodaya* (Eastern Awakening) programme, implemented from 2007, when the breakaway Karuna faction of the Liberation Tigers of Tamil Eelam (LTTE) aligned with the armed forces of the Sri Lankan government. The policy orientation on infrastructure has been particularly focused on increasing connectivity and trade with the rest of the island by demining, developing roads, railways, transport and electricity supply, as well as improving economic and living conditions of the population, such as livelihood recovery, water and sanitation, and rural infrastructure, including irrigation tanks, schools and hospitals (Kelegama 2011; Perera, P. 2014). National poverty reduction programmes, such as *Gama Neguma* (Village Rising) and *Gemidiriya* (Village Courage), were implemented alongside *Negannahira Navodaya* for livelihood development through micro-small enterprise promotion, micro-credit services and intra-village connectivity in the context of large numbers of returning internally displaced persons (IDPs), who needed to be resettled. The government also supported private sector investment in establishing large-scale manufacturing industries, as well as tourism development. While the NGO sector was initially involved in post-war reconstruction and reconciliation, a regulation introduced in 2013 made it mandatory that all development funds were channelled through the Ministry of Defence - this effectively reduced the role of NGO, especially INGO, engagement (Perera, P. 2014). NGOs returned with the change of government of 2015-2019, a political transition in which civil society played a significant role. However, the dominant approach to infrastructure development with a heavy military presence, exclusion of local communities in decision-making and access to employment, inadequate power-sharing between central and provincial government, and disregard of political and socio-economic grievances, peace building and reconciliation (Buthpitiya 2013; Perera, P. 2014) remained largely unchanged. Economic development of the north and east was brandished as the better approach to national unity in the manifesto of the politically dominant party which won the 2020 national election.

Batticaloa district has a rich cultural heritage in its numerous Hindu temples, mosques and churches. With a population of 526,567 in 2012, the district is predominantly Tamil (72.3%), with a smaller proportion of Muslims (25.4%) and Sinhalese (1.3%). The war has led to segregation of Tamil and Muslim villages, and some conflict between Tamil and Muslim groups, especially over land. Both during the war and after, the district has also seen sporadic intra-Muslim violence by radical Salafi (Thawheed) groups against traditional Sufi groups, their shrines and feasts. Trincomalee, a historical port at the crossroads of ancient sea routes, has a multi-cultural heritage of archaeological sites and temples. The multi-ethnic district with a population of 379, 541 in the last Census of 2012 (DCS 2015), comprises Muslims (41.8%), Tamils (30.7%) and Sinhalese (26.7%). Ethnic relations have been volatile within this district and there has been polarisation of ethno-religious groups both during the war and post-war, with sporadic conflict over sacred spaces, religious symbolism and land.

The war took an enormous toll on socio-economic conditions in the Eastern Province, as well as tore apart the social fabric of this region. The maternal mortality rates was four times higher in Trincomalee district and eight times higher in Batticaloa district than the national level in 2000 (Kelegama 2011). Only a fourth to a third of households had safe sanitation in Trincomalee and Batticaloa districts respectively in contrast to three fourths nationally in 2001 (Kelegama 2011). While these human development gaps have improved somewhat, the maternal mortality rate in Trincomalee district at 51.1 was well above the national average of 33.8, while it had reduced below the national level in Batticaloa district (32.7) in 2016 (FHB 2016). The labour force participation rates at 45% in Trincomalee district and at 47.3% in Batticaloa district respectively were lower than the national average of 52.3% in 2019 (DCS 2020a). The unemployment rate in Batticaloa at 7.2% was considerably higher than the national average of 4.8%, in comparison to around the same unemployment rate as the national average in Trincomalee district in 2019 (DSC 2020a). The mean household income in Trincomalee district was 74.1% of and in Batticaloa district 64.8% of the national average in 2016 (DCS 2018). While the poverty head count index in Trincomalee was 2.4 times that of the national average, it was almost three times higher in Batticaloa district in 2016 (DCS 2017). Batticaloa was the third poorest and Trincomalee the fourth poorest of all districts in Sri Lanka in 2016 (DCS 2017).

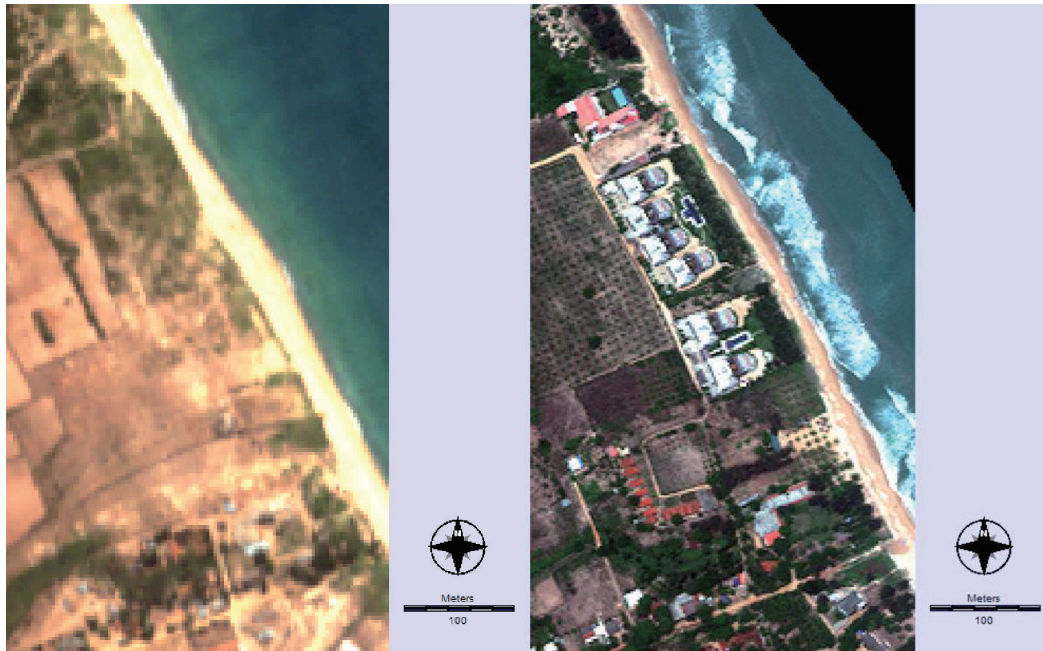
The war also had devastating impacts on the environment of the Eastern Province. The losses and damages to natural ecosystems due to war are yet to be fully assessed. As pointed out by Kelegama (2011), there were many unresolved issues relating to the environment at the end of the war, such as resettling original resource users and reinstating their rights based on sustainability of the resource base; re-establishing control of state regulatory bodies over sustainable management of natural resources through appropriate safeguard measures to restore and sustain ecosystems; restoring livelihoods through sustainable use of natural resources; and strengthening local and community governance systems of natural resource management. Thus, there is a knowledge gap on the impacts of post-war infrastructure development on the ecosystems of these two districts in general, on fragile habitats in particular, and the consequences of environmental destruction on the wellbeing of coastal communities.

The main types of infrastructure development in the two districts are outlined here, using a political ecological perspective to analyse the institutional context of implementation of infrastructure projects, the negotiation among various stakeholders and the power relations underlying coastal transformations. The major post-war infrastructure development initiatives in both Batticaloa and Trincomalee districts were state-initiated construction of roads and bridges, fisheries port expansion, and private-sector driven tourism development. Apart from national level state agencies responsible for roads, ports, tourism and so on, local government (e.g. Municipal Councils, Pradeshiya Sabhas) and multi-lateral agencies (e.g. ADB, UNDP) are the key institutions driving infrastructure development in both districts. Trincomalee experienced some extent of industrial development, based on private sector investment, such as garment factories and salterns, a new industrial zone and an expansion of existing industries, such as cement, while Batticaloa district saw little industrial development, apart from a few garment factories and expansion of aquaculture development. Both districts have been earmarked for larger developments, such as industrial zones, focused on fabric processing in Batticaloa district and heavy industry and coal power plants in Trincomalee district, but none of these have been implemented on the ground so far. A conservation campaign succeeded previously when an environmentalist organisation took the relevant state agency to the Supreme Court to halt the construction of a coal-powered plant in Sampur, alongside the Koddiyar Bay in Trincomalee, on the basis of adverse effects on biodiversity, livelihoods and health (EFL 2016). The case was withdrawn by the Supreme Court in 2016 when the

Ministry of Power and Renewable Energy decided not to initiate the project. The low level of industrial development is confirmed by the contributions of the major economic sectors to the GDP of the Eastern Province. The GDP contribution of the industrial sector in the Eastern Province has changed slightly from 18.6% in 2008 to 17.5% in 2018, whereas the contribution of the service sector has increased markedly from 43.2% to 57.8% during the same period, while the contribution from the agricultural/fisheries sector has declined by half from 38.2% to 16.6% during the same period (Vithanagama 2020).

Infrastructure development has resulted in social and ecological transformations, which are perceived as largely positive by stakeholders in terms of social impacts but less so in terms of environmental impacts. District level key informants and research participants from households identified better connectivity through road construction and expansion as leading to increased employment opportunities and incomes, and improved access to markets, education and health. Little displacement of people from their land or resources have occurred in either district through infrastructure development, apart from land acquired for military, religious and archaeological purposes. However, industrial and tourism infrastructure development has reduced access of fishers to beaches, and in some cases, previous boat landing sites.

The main issue is that in front of the big hotels and resorts, such as Marble Beach, the owners don't allow fishing activity because it will disturb their customers. The beach is public property, but in practice fishing is prohibited in front of the resort and hotels, which are built along the beach. There is no specific action taken by the fishermen to do fishing in front of the beach hotels, because the practice has become that they do not access the particular area. (District-level key informant, government sector, Trincomalee district)



Map 3.1: New tourism infrastructure in Trincomalee (left: 2001; right: 2020)

Remote sensing maps (Map 3.1) show the increase in built space along the coast of Trincomalee due to development of tourism infrastructure (SEDRIC 2021) and reveal the potential loss of beach access to fishers. While some attempts have been made to provide alternative access, district key informants and fishers indicate decreasing fisheries production and incomes, offset in some cases by new opportunities in tourism, such as providing boat services or higher prices for the fish catch from tourist hotels. Both costs and benefits for fishing households are indicated by this key informant from the government sector in Batticaloa district.

Due to infrastructure development and declaration of the buffer zone particularly in the coastal areas, some fishing people have to come from relocated sites to the beach which sometimes hinders their fishing opportunity... The small huts located on the beach have been relocated due to infrastructure development for the purpose of conserving the beach, which is the other bottleneck.

In my view, the access to the community has been improved, sources for economic resilience are there due to the development of infrastructure

development. The level of educational attainment has improved in the coastal areas. Now people in coastal areas are interested in seeking other livelihood options than fishing. The standard of living of the people has been improved. The interest and mindset to seek other livelihood options rather than fishing has been developed among youth. (District-level key informant, government sector, Batticaloa, Batticaloa district)

District-level key informants from the Batticaloa district stated that even though there is development in terms of road construction, development projects have not addressed the needs of those affected by war particularly those whose lands had been taken away, widows and persons with disability.

In my area, there are many widows and disabled people who are affected by war. But they have not got any specific assistance from the government. Commonly they get help from others. Generally, the roads have been re-constructed by the government. Other than this, there are no major changes that have occurred after the war. (District-level key informant, government sector, Batticaloa district)

Key informants from Batticaloa stated that they needed more development initiatives that addressed livelihood needs and in Trincomalee, the need for capacity building of those in the tourism industry was mentioned.

Tourism is one of the main industries in Trincomalee, but no government institution conducts hotel management or tourism-related courses. (District-level key informant, civil society organization, Trincomalee district)

Destruction of mangroves, cutting of trees, filling of wetlands, waste disposal and pollution of water and air are among the main impacts on ecological systems due to rapid infrastructure development indicated by national and district level key informants. Representatives of civil society organizations (CSOs) were most critical in identifying the negative environmental impacts, although some district level key informants from the state sector also indicated environmental destruction resulting from infrastructure development.

Sand mining is a common issue in Batticaloa. Politicians and government authorities have given permits for sand mining. Four to five years ago

most of civil society raised their voices against this mining but now no one is there to speak out. Sand mining is a reason for floods and other natural disasters. And destroying kandel (mangrove) plants is also a major issue in Batticaloa. It reduces the reproduction of freshwater creatures such as fish, prawns, crabs and so on. In order to protect resources all civil society organisations and the politicians should take proper action. This is how we can preserve scarce resources for future generations. (District-level key informant, civil society organisation, Batticaloa district)

This destruction of ecosystems that have occurred post-war is despite a sound framework of legislation in place in Sri Lanka to conserve the environment. The key informants in both districts were fully aware of these laws and regulations, and referred to the Coast Conservation Act, Fisheries Act, Wildlife Policy, Fauna and Flora Protection Act, Tourism Act, Marine Environmental Protection Agency Act, Urban Development Authority Regulation and National Environmental Act. Key informants in Batticaloa district indicated that these laws help protect against illegal sand mining, illegal fishing, cutting trees, exporting corals without license, and protecting the coastal and marine vegetation. They identified the Coastal Conservation department as the main authority that protects the coast. However, key informants from CSOs in the district were sceptical of the laws and regulations, pointing out that even though the laws exist theoretically their implementation is faulty. For example, even if there were laws against illegal sand mining, this continued to occur along coastal areas. One CSO key informant indicated that such illegal activities are conducted with the support of political influence. For example, politicians would wrongfully grant permission to contractors for illegal activities such as the export of mineral sands, resulting in villagers facing the risk of losing valuable natural resources. However, a few government key informants claimed that the authority and laws to protect the environment have been tightened currently compared to the past.

Key informants from Trincomalee district mentioned certain non-governmental and private-sector organizations that were involved in preservation of natural resources in the area. CSO respondents emphasized on the need for protection of natural resources, such as beaches, hills, forests, animals (e.g. deer) and plants (e.g. mangroves). However, as in Batticaloa district, CSO key informants in Trincomalee referred to a lack of systems in place for proper implementation of laws and

monitoring, and faulty implementation of existing laws. Some key informants in Trincomalee district indicated indirect consequences faced by people, such as flooding due to sand mining in rivers, and using harmful fishing methods due to lack of basic fishing equipment provided to fishermen. Meanwhile, government key informants mentioned developing a plan to assess climate change every five years, and conducting awareness raising programs regarding deforestation.

Environmental Impact Assessment (EIA) and the stakeholder consultation process

Prior to infrastructure development, the state and private sector are obliged to follow a process of consultation with affected communities, which is part of the Environmental Impact Assessment (EIA) process. National key informants from CSOs were extremely knowledgeable and critical of this process. They pointed out that a comprehensive process to understand what resource users perceive as a vision for themselves as a community, their long-term needs, the options for management and better representation for decision-making in the implementation phase was missing from the stakeholder consultation process. The EIA was seen merely as a document to file and that the process was manipulated to achieve the desired outcome. Often projects had begun construction before the EIA process had started with very little options to change the trajectory of the project. Moreover, even if EIA findings showed major impacts, mitigation measures were not necessarily followed as monitoring was lacking. This also meant that there were never lessons learnt from the process. While district-level key informants were generally less knowledgeable of the EIA process, district representatives from CSOs were critical about the extent of consultation of communities and consequences of a flawed process, while state sector key informants perceived that adequate consultation has taken place.

It is mandatory to do an EIA if the project takes more than 5 hectares of land, but it is not done. Even if done, it is the company who pays for the person doing the EIA and so that person is not likely to give a report against the company, but usually gives a justification. Then the EIA is published, and people are asked to report any oppositions within 30 working days. The report itself is about 300 pages and most of the time in English. Even if it's in Sinhala, the general people can't understand complicated technical words. So some CSO has to help people

understand these reports and make any complaints, but this process is not possible within 30 days. Our experience is that the EIA process is very unsuccessful. We have made numerous suggestions to many EIAs but until now we are not convened to discuss our concerns. So it's only done to show that it's done. For example, very recently the Thirukkovil mineral sands EIA was published during the Sinhala Tamil New Year holidays. So CSOs couldn't get involved at all and they only knew about it after the deadline had lapsed. (National-level key informant, civil society organisation)

A few state sector officers from both districts however referred to negative impacts of political influence within this process, not just in bypassing requirements of the EIA process. A civil society organisation representative implicitly alluded to ways in which communities' right to express their grievances and challenge development projects might be curbed through intimidation and surveillance.

Our region is rich in resources but has been affected by the war for the past 30 years and is recovering. The heavy military presence in our area, and in Muttur and Sampur, has caused panic and fear among the people. People are unable to do their work freely and without fear. They are living at different [socio-economic] levels in different ways. A small group benefits from these development projects, but more than 90% do not benefit. (District-level key informant, civil society organisation, Trincomalee district)

This was confirmed by a national-level key informant, who was more explicit about the political context, within which communities could express their concerns.

People very rarely raise a voice for their rights, and it's because of those initiatives that we are able to protect what we have. We have citizen committees in Batticaloa and Trincomalee. We have also established a people's commission for land rights. It's becoming difficult for the common people to get involved in these initiatives because of increasing poverty. Other than attending these meetings, they also have to find their daily wage and look after families. The other side is the political impacts... Also, the persecutions people have faced during the war make them think whether they would have to go through those sufferings

again. That's why their voices are less heard. But we always say they have to be more sensitive to these problems and stand together. But this is a very difficult process. Moreover, the influence of state surveillance agencies also impacts people's mobilization efforts, and I think this would increase in the future more than now. Our members have already experienced these events, like questioning for convening meetings and so on. We are actually used to this, but not the common people. (National-level key informant, civil society organisation)

The political climate in the country, as well as interest of local politicians also impact on whether or not/how comprehensively EIAs are conducted. National-level key informants representing CSOs mentioned moments of national emergency such as the tsunami of 2004, the immediate post-war setting and periods before elections as influencing EIA processes, especially in the tourism development sector.

According to the government's development plan, they wanted to build a tourism zone in the Pasikudah area. There were 500 households doing traditional fishing. What the government did, was using the tsunami also as an excuse, evicted those people, relocated them in some other place, and built a tourism zone there. They were allowed to continue their fishing, but now they are away from the beaches. (National-level key informant, civil society organisation)

Similarly, the post war mandate of economic development for the north and east and the emphasis on national unity as the priority, together with the situation of communities being displaced and still residing in camps enabled the state or private investors to evade certain requirements of the EIA process.

In Sri Lankan law the EIA process is compulsory before projects. But many projects start without a proper EIA process. After the war in 2009, the government insisted to the environment movement and other people that we have to move fast, and then what they did was a strategic environment process for the whole north and east, and did not get approval as per the law. For example, in Pasikudah they built one of the biggest hotels in that area but they strategically avoided the law... But they used loopholes in the EIA process and constructed. The EIA report was also later supposed to be published in local languages, relevant

to the communities in the areas, and should have been available in DS offices. Then if there were any issues public consultations should happen. But in this case they didn't consult any DS offices or communities, and the building was constructed when most of the people were in camps.
(National-level key informant, civil society organisation)

According to key informants in Batticaloa district, the consultation process prior to the implementation of projects involved meetings mainly with government stakeholders, such as officials at district, divisional and village (GN) administrative levels, ministries, and relevant departments. The process, as they outlined it, largely involved submission of a proposal, conducting feasibility assessment, needs assessment, consultative meetings with government and non-government stakeholders including villagers, and finally the approval from line ministry and District Secretary. However, there seemed to be a lack of knowledge as to the exact steps of the process, and the inclusion of any environmental protection measures in the process. The CSO key informants were critical of government authority and influence within this whole process and highlighted its superficial nature. They emphasised the importance of involving villagers when proposing development projects in the area, as well as the proper identification of beneficiaries. Few CSO key informants said that villagers and CSO representatives were invited to meetings and consulted prior to the implementation of projects. Moreover, the majority of government respondents indicated that they were unsure whether all infrastructure projects in the area followed a proper stakeholder consultation process. They were of the opinion that some projects may have skipped this step. However, they mentioned that when such meetings are held, villagers and CSOs are part of the stakeholder groups, along with government officials.

In contrast to Batticaloa district, key informants in Trincomalee seemed to have less knowledge of the stakeholder process in the district. They indicated the involvement of government stakeholders, such as the District and Divisional Secretariats, and GN officers, but did not provide details of the steps in the consultation process, although stressing the need to get approval. Some key informants from CSOs indicated that government stakeholders tended to discriminate against communities. Prioritising majority ethno-religious communities over minority communities or ethno-religious communities related to particular politicians for benefits was mentioned. In addition, a local level officer, such as the GN, with the help of a village assistant may identify their friends as beneficiaries of infrastructure projects.

Many development activities do not still reach minorities and there is always discrimination arising when distributing resources ... Smaller fishing business is done by minorities, such as Muslims and Tamils, and bigger businesses are done by the majority [Sinhalese]. Advanced fishing equipment is only available for the majority and even though minorities have requested several times for big fishing equipment, it is not provided. There are no benefits given to minorities by the government. (District-level key informant, civil society organisation, Trincomalee district)

The government key informants while highlighting the participation of government stakeholders in the process, also indicated the consultation of villagers and CSOs in the meetings prior to implementation. Furthermore, they also mentioned the need to get approval from stakeholders, such as the coastal conservation department, forest department and geology department, indicating attention given to environmental concerns.

Exact knowledge of the EIA process that is required prior to infrastructure development was lacking among the majority of key informants in both districts. They appeared to know whether EIAs were conducted or not, but not how these were done. The government key informants in both districts indicated that EIAs were done because an EIA report needs to accompany a project proposal for approval. In Batticaloa district, a government key informant pointed out that environmental and social needs are taken into consideration because the projects need to get approval from government officers, such as the GN. In Trincomalee district, government key informants claimed that EIAs were conducted properly with consultation at the grassroots level, while one mentioned that social concerns were less rigorously addressed and obtained mainly through opinions provided by GNs. Key informants from CSOs in both districts were critical of a faulty EIA process. In Batticaloa district, some CSO key informants reiterated that villagers were not consulted and community needs not taken into account prior to implementation of projects, or that such assessments were done very superficially but without any actual concern for the communities. EIAs, it was pointed out, were conducted only as a formality that needs to be attached to the project proposal.

Furthermore, EIAs are conducted with very narrow focus on the specific infrastructure development project in question, not taking into consideration the historical and wider development mandate for the region. Thus, long-term

impacts of the project on the sociocultural, economic and ecological landscape are not assessed. Communities are also not engaged in discussions and given time to consider the deep and far-reaching implications of the development project.

The purpose of the EIA consultations is primarily to see whether this project or this development activity will cause negative social impacts or conflicts or deny people access to user rights and so on. But it doesn't consult the people in strategic planning into taking their inputs to what is required for the development process... it's not really trying to understand what the users see as a vision for themselves as a community, what their serious long-term issues, are the options for management. Are there opportunities to include these people and benefit them not directly financially but give them better representation in the management process and decision-making process, as well the implementation process?...This consulting people for a specific project to look at whether there is a direct negative impact of that project is difficult. Because even the communities don't truly understand how this sits in the wider scheme and what for example, is the tourism plan for the region, and do the communities feel inclusive in that they get opportunities and development or are they opportunistic because the hotel opened up down the road from your fishing village and you can now sell something there. It is very opportunistic but I don't think they are a part, feel inclusive in that way. (National-level key informant, civil society organisation)

In Trincomalee district, CSO key informants indicated that EIAs were rarely conducted, and that most projects seemed to be implemented without any concern for the environment or communities. Environmental pollution, waste disposal, deforestation, faulty beneficiary identification, sustainability of livelihood assistance and political biases were identified as negative impacts of flawed EIA by CSO key informants in Trincomalee district. However, one CSO key informant in Batticaloa district referred to an instance where communities were consulted and compensated for their losses due to a new project. Another CSO key informant in Trincomalee district said that local governance had improved from the past, although political influence continued to hinder assessment of environmental and social impacts. It was also pointed out by a CSO key informant in Trincomalee

district that NGO projects considered social impacts but did not always pay attention to environmental impacts.

Overall, the procedures and requirements for the EIA process are in place and its implementation and adherence guaranteed by legal frameworks. However, a major criticism voiced against the EIA process by national-level key informants is the lack of a single state body or coordination among state agencies to monitor the EIA process and adherence to the different laws that pertain to development projects. This is a flaw in the governance structure in Sri Lanka where departments work in silos and lack intersectionality.

Sri Lanka has a very comprehensive legal framework but there are problems with implementation. Some of them are sectorial and structural issues because you have multiple agencies. Some of them are within the department... When all it requires is to pick up the phone and call the person who is down the road or just walk there. But they won't because they are not driven by a mandate to do this. Because everyone is sitting in a comfort zone of doing their thing. It's a structural process because those people are also either constrained in a system or they have spent so much time in a bad system, they don't know what a good system is. So it's not because they are inferior... we are always talking from outside because we have never had to be stuck in that system. But that is a big thing – coordinating among departments. (National-level key informant, civil society organisation)

In two of the five study communities, Muhathuvaram and Aalaiyur, where the fisheries harbour was expanded and water treatment plant constructed respectively, along with development of roads, bridges and drainage, all research participants reported that they had been informed and/or consulted in community settings, and their opinions solicited by the relevant authorities. However, their understanding of what an adequate process of consultation might be somewhat different from that of civil society key informants. It was noteworthy that both women and men in these two Muslim communities were informed about the projects and/or had participated at meetings. People in Muhathuvaram outlined the consultation process that had taken place in relation to projects in their vicinity and perceived that their voices had been heard.

Yes, I can remember that we got an announcement from our mosque and they invited us for the discussion on development activities in our area. Our Government Agent, Divisional Secretary, and other officers came and then the discussion started in relation to the development of roads and harbour. In the meeting we stressed the need to build the roads with drainage facilities. The officers explained the benefits of the development activities. We said at the meeting to build the roads first; they agreed and development of the road work began first and then they started the other work [on the harbour]. (Female grocery store owner, 54, Muhathuvaram, Batticaloa district)

I can remember that my neighbours talked about a meeting called by the Divisional Secretary to discuss the road construction. Then I visited the place and participated in the discussion. We requested them to construct the main internal access roads. I observed that most of the participants in the meeting were in agreement to construct the main internal access roads. Finally that was agreed and the roads were constructed. (Male nut seller, 56, Muhathuvaram, Batticaloa district)

Even though a major component of the project was fisheries infrastructure development, the larger project included rehabilitation of irrigation channels and bridges, on which farmers were consulted as well.

The project was implemented after having consultations with the people who do agriculture. I know that there was a discussion held with the participation of the Divisional Secretary, Secretary of the Ministry of Agriculture, officers from Road Development Authority, elected members of Pradeshiya Sabha, representative of civil society organizations and representative of farmer organizations and farmers. I know that they had a lengthy discussion before they started the work. (Male agricultural wage labourer, 51, Muhathuvaram, Batticaloa district)

Moreover, female research participants also expressed knowledge of the consultation process in relation to the fisheries harbour, even if they might have not participated at the meetings. They also expressed a sense of ownership in the decision-making although it was unlikely that the decision on developing the harbour was based on the views of community members.

I don't know much about this but I know one thing that before the development of the fishing harbour, this was discussed with the people. The fisheries societies, civil societies, public were invited for the discussion and then project was implemented. They heard the opinion of the people first and all the people said during the discussion that Vallachchenai and Muhathuvaram have a lot of potential for fishing and anchoring day boats and multi-day boats. After hearing [this], they decided to develop the harbour. I did not know whether a similar meeting was held at the time of road construction. (Female tailor, 35, Muhathuvaram, Batticaloa district)

Similarly in Aalaiyur, both female and male research participants described the consultation process that took place in relation to the water treatment plant and other accompanying infrastructure.

Before the project started, there were several meetings held. The meetings were summoned by our Grama Niladhari. The officers from Trincomalee and our Divisional Secretary, our Pradeshiya Sabha members and our people took part in the meetings. They discussed about the projects and their advantages and I can remember, they had meetings with only our village people and they asked us to discuss the requirements in our area. We requested them to provide the facilities to get purified drinking water as our first priority. (Female tailor/food seller, 47, Aalaiyur, Trincomalee district)

I am not sure about the other projects but I am sure that the officers from National Water Supply and Drainage Board, Divisional Secretary, invited us and had a lengthy discussion about the installation of the water purification plant. I participated in that meeting. The people gathered at the meeting and requested them to provide drinking water at the earliest convenience. (Male agricultural wage labourer, 60, Aalaiyur, Trincomalee district)

While this consultation process might not engage stakeholders comprehensively and meaningfully to envision their long-term future, as proposed by national-level key informants, multi-lateral banks have social safeguard policies which are clearly delineated and it appears that these were followed in the implementation

of the two larger infrastructure projects in both districts. However, this kind of consultation process was noticeably absent in three of the study communities - Venkarai and Kadalveli, which experienced formal and informal tourism development respectively in both districts, as well as state-supported industrial development supported by the Consolidated Fund of the Sri Lankan government in Karaipuram, Trincomalee district.

Yet, Both women and men experiencing the formal tourism development zone in Venkarai indicated that despite the lack of consultation they were glad to have increased livelihood opportunities.

The beach has been very famous for a long time. Before the Tsunami, many local people used to visit here. When war came to an end, the beach area was developed by private investors and opened to foreigners and local people, and is still under construction...The villagers were not consulted. However, villagers accepted the project since it created many jobs. (Female rug and mat trader, 47, Venkarai, Batticaloa district)

People and villagers were not consulted; however, people are happy about the implemented [tourism] project since they got many job opportunities. (Male hotel worker, 50, Venkarai, Batticaloa district)

In Kadalveli, where there was an organic growth of tourism following the war, a few female and male research respondents mentioned that rehabilitation of infrastructure had already begun by the time people had returned and were resettled and that might be the reason why community members had not been consulted. Even though Venkarai interviewees did not mention displacement, it appeared they also had the same experience, according to national key informants.

Many people who live here, were displaced to India during the civil war, so before we arrived in Sri Lanka, many hotels and other infrastructure developments, such as roads were built by the government and private parties. (Female food seller, 52, Kadalveli, Trincomalee district)

After the war, many infrastructure development activities, such as roads, were carried out by the government and private parties in order to develop the tourism sector... No [people were not consulted]. Because

many of the village people were returning to the country after being displaced to India. (Male farmer, 53, Kadalveli, Trincomalee district)

In Karaipuram, villagers who were located near the industrial zone expressed frustration that they were not consulted, as they overwhelmingly emphasised costs over benefits in the case of this infrastructure development project. All female and male research participants indicated that they were not consulted and some activities, such as potential land acquisition instilled fear and uncertainty in them, while other activities, such as road construction, were considered an injustice.

Though there are benefits in some of the development, mostly there are disadvantages. They don't ask our opinions. Sometimes, X Authority officials come here and show us new boundaries of land. We have a fear of what's happening. (Female farmer, 59, Karaipuram, Trincomalee district)

The measurements have been taken to construct the buildings for the newly constructed hotels through which there would be the possibility to lose land. One person whom I know has lost his land for the construction of the water tank. They [government authority] have delimited the boundaries, but they are not issuing the title deeds. These problems are because of development activities. They are not holding any consultation with us. As of now, there have been no benefits but the roads and water tanks could be beneficial. All these works have been done with a political purpose. There are so many roads to be constructed but political parties have been doing these for their purposes. This is a big injustice. (Male hospital worker, 42, Karaipuram, Trincomalee district)

The contention was both over what was considered as priorities of the development process, as well as where the infrastructure projects were to be located. Several men in Karaipuram expressed the view that they had a better understanding of both priorities and suitable locations than the government implementing agencies, which had come under the influence of politicians with personal agendas.

We want development in our area but that should be done with perfect planning. I would like to say one thing - for example, this big water tank, which is being constructed. In fact, this is one of the needs but

the location in which it should be built is not the place where it is being constructed. This is their problem. The interference of this local politician is intolerable. Their aim is only to develop their economic status but not the development of our area. There are roads that need to be done urgently but instead they build the roads where only one or two people live and which are not urgent at this point in time. They have to ask us what are the benefits to the people here, and which project should be done but they don't do that. (Male three-wheeler driver, 41, Karaipuram, Trincomalee district)

While all infrastructure development projects have impacts on local communities, the contestation over land, locations and priorities were particularly visible in those projects where local communities had not been consulted at all. This worrisome situation was encountered in three of the five study locations and revealed the unequal nature of power relations within these political-ecological contexts. Government authorities or politicians were perceived to play questionable roles and exercise unworthy power, especially in the case of Karaipuram. It is noteworthy that in the two communities where people felt they had been consulted, they also perceived greater benefits than costs. In the three communities where people were not consulted, they indicated a mix of benefits and costs, as in the case of both planned and unplanned tourism, or mostly costs in the case of the industrial zone. In the latter case, research participants additionally expressed a sense of frustration, fear, uncertainty and injustice. The consultation between project implementers and stakeholders as an information exchange, discussion and negotiation process, if adequately done, can enhance not only material, but also relational and subjective wellbeing, among affected communities.

4. Gendered livelihoods and relations in coastal communities

This section outlines the livelihood system within coastal communities in the two study districts focusing on the gender division of labour and social relations within the context of family, community, market and state, analysing changes that have occurred in the livelihood system as a result of rapid infrastructure development. The livelihood system is primarily based on fishing, farming and micro-small enterprises within the informal sector. The overall labour force participation rate at 45% in Trincomalee district and at 47.3% in Batticaloa district was lower than the national average of 52.3% in 2019 (DCS 2020a). The female labour force participation rates of 25.4% in Batticaloa district and 20% in Trincomalee district in 2019 are among the lowest in Sri Lanka, the average of which is 34.5% (DCS 2020a). Conversely, the male labour participation rates in these two districts at 72.6% and 73.5% respectively in 2019, are close to the average of 73% overall in Sri Lanka (DSC 2020a). However, national level statistics often do not capture the invisible and undercounted labour of marginal groups, especially women. In the households of research participants in the five study locations, around half of the adult women indicated at least one income generating (productive) activity. While both men and women were engaged in micro-small enterprises, fishing and farming related activities, more women tended to participate in the service sector, and focused on micro-small enterprise. This is broadly consistent with district-level employment statistics in which 52% of employment in Batticaloa district and 47.4% in Trincomalee district in 2020 respectively were in the service sector (DCS 2020b). Trincomalee district had a larger proportion of the employed in the agricultural sector (29.8%) relative to Batticaloa district (22.1%), while Batticaloa district had a somewhat larger proportion employed in the industrial sector (26%) relative to Trincomalee district (22.7%) in 2020 (DCS 2020b).

The district-level statistics indicate a shift of livelihoods from agricultural and fisheries to the service sector in both districts. This shift is however not as apparent from the interviews of research participants in coastal communities. The livelihood system appears to have largely remained unchanged despite infrastructure development. Households have increased production or the scale of their enterprise to meet increased demand and some have adopted new income generating activities within the informal service sector, including tourism. A minority of households have found employment in the formal sector, in industries and tourism. Men

have found formal employment in tourist hotels, resorts and industries, such as cement, while women have found employment in garment factories and in some cases, in tourist hotels. Women are constrained in accessing formal employment opportunities mostly due to underlying gender norms, values and practices, which prescribed that women's primary role was within the family.

In Muhathuvaram and Venkarai in the Batticaloa district, the main livelihood activities in households of the research participants before the implementation of infrastructure projects were fishing and fish processing. While the predominantly Tamil Hindu research participants in Venkarai were also engaged in farming, most persons interviewed in mostly Muslim Muhathuvaram engaged in micro-enterprises, including fish trading and processing. While men primarily engaged in fishing, fish processing was equally distributed among the wife and husband. Farming was mainly carried out by the husband, while livestock was handled by the wives.

In contrast to study communities in Batticaloa, in Kadalveli, Aalaiyur, and Karaipuram in Trincomalee district, most households of research participants were engaged in farming and livestock rearing before the implementation of infrastructure projects. Farming and livestock rearing were practiced by more households of interviewees in Kadalveli and Karaipuram than in Aalaiyur. Farming was predominantly carried out by men, compared to women. Fish and fish processing was another important livelihood, as in Batticaloa district study locations. In Trincomalee district, around a third of research participants were engaged in daily wage labour, and this was most common among Muslim males in Aalaiyur.

There were changes in the livelihoods of around half of research participants and family members in Batticaloa district and about a third of those in Trincomalee district, following the implementation of infrastructure projects in study communities. The most notable change in both districts was the expansion of previous livelihoods (livestock rearing, micro-enterprises). A minority of research participants or household members were able to shift to new employment such as in hotels, industries or in the transport sector (three-wheelers), or started new micro/small enterprises. While fishing was continued in both districts at around the same levels, there appeared to be a considerable decline in fish processing and farming among households interviewed in the Trincomalee study locations.

In the households of research participants in Batticaloa district, fishing and fish processing continued to be the main livelihood activities, with more Muhathuvaram interviewees and families increasing involvement in these activities as a result of the fisheries harbour development, relative to those in Venkarai.

It [fisheries harbour project] hasn't much impact on my current and previous livelihood. Now there is big competition because we can get the fish very close to us and the people engaging in fish trading have greatly increased. (Male fish trader, 61, Muhathuvaram, Batticaloa district)

Due to the development of the project, I brought a boat and because of this project, I sell dried fish, and transport fresh fish to Colombo and Kandy fish markets. (Male boat owner, 44, Muhathuvaram, Batticaloa district)

In contrast to before, women seem to have increased engagement in fish processing activities relative to men after implementation of the harbour and related infrastructure. One reason for this according to a research participant is the increased demand for dried fish.

I do fish processing; I mean I get the fish during a glut in the catch and dry this for the purpose of selling - which has a big demand. (Female grocery store owner, 48, Muhathuvaram, Batticaloa district)

Furthermore, men's participation in daily wage labour had increased to some extent. However, engagement in daily wage labour is not seen as a positive outcome of infrastructure projects, as this often implied a loss of their traditional livelihoods.

As I mentioned previously, I left my previous job [fishing] because of reduced accessibility to the beach at Pasikudah and started a wage labourer job. (Male mason, 53, Venkarai, Batticaloa district)

We had many cattle and livestock before the infrastructure projects. However, government officials and the PHI [public health inspector] ordered us not to graze cattle near the tourist area, so we had difficulties in feeding the cattle and we sold it to the people in the next village. (Male hotel worker, 50, Venkarai, Batticaloa district)

However, some research participants in Muhathuvaram had increased livestock rearing and were contemplating going into rice cultivation. This could be due to additional labour provided by grown sons, daughters and other relatives, and also due to easier access to resources, such as water.

Now I have an idea to cultivate in my own paddy field because it is easy for me to irrigate. The water does not cost much now due to the renovation and construction of irrigation channels and small bridges. (Male agricultural wage labourer, 51, Muhathuvaram, Batticaloa district)

In Venkarai, around half of the research participants or their household members had shifted to tourism related work, such as employment in hotels, three-wheeler transport and sale of homemade food.

I'm working here in a hotel because of the tourism project. Otherwise it is very difficult to find a job here in Batticaloa. There are more job opportunities [here] than we see in the Western province. (Female hotel accountant/receptionist, 35, Venkarai, Batticaloa district)

I have my own three-wheeler; I transport local people and tourists on holidays.” (Male hotel worker, 50, Venkarai, Batticaloa district)

Engagement in new micro/small enterprises, although a livelihood strategy pursued by a minority of research participants, was visible in both Muhathuvaram and Venkarai, and many of these start-ups were by women.

I'm running this business and it's fully dependent on tourism. I have guests during the season and off-season. During the season the guest house gets fully booked by foreigners and during the off-season by the local Sinhalese. (Female guest house owner, 39, Venkarai, Batticaloa district)

This grocery store is close to the Pasikudah beach. This shop mainly focuses on tourists. During the tourist season, we earn more income than usual days. There is no shop close to the beach except our shop. But in the off-season, local tourist and hotel workers purchase things. So

my livelihood is fully dependent on the tourism project. (Female grocery store owner, 30, Venkarai, Batticaloa district)

I did not get any direct job in the project [harbour development] but it paved the way to develop my work. As I mentioned before I am engaged in two to three businesses now. I see it as an advantage for me and my family to get a decent income out of the businesses. (Female food seller, 51, Muhathuvaram, Batticaloa district)

In Trincomalee district, many research participants remained in fishing and farming, but livelihoods in farming crops had reduced considerably as those in fish processing. Livestock rearing had increased among interviewee households, especially in Kadalveli, with more grown sons, daughters, and other relatives becoming involved. The decrease in fishing-related activities appeared to be the result of restricted beach access due to tourism.

Even though the government did not restrict us, private owners did not allow us to go fishing from particular areas in front of their beach hotels. This happened not only in Kadalveli, but also in Nilaveli and Irakkakandy. So, I moved to a tourism-related job to support my family. (Female guest house worker, 55, Kadalveli, Trincomalee district)

A minority of research participants and family members in study locations in Trincomalee district found new employment in eateries, ports, tourism, garment factories and the private-sector in general.

Yes, now I am working as a helper in an eatery. I study the nature of business and I feel that I can invest in running an eatery. I have come to that decision due to infrastructure development in our area. (Male eatery worker, 26, Aalaiyur, Trincomalee district)

Previously, I did daily wage labour and also went fishing. Now I am working in the fishing harbour as a night watcher. The fisheries society gives me a salary and fishermen give me fish. (Male night watcher, 47, Karaipuram, Trincomalee district)

In my previous job, I was unable to generate sufficient income. Therefore I switched to this self-employment [guest house]. Here I can manage my needs and wants. (Male guest house owner, 40, Kadalveli, Trincomalee district)

While engagement in daily wage labour remained almost the same after infrastructure projects among interviewees and families in study locations in Trincomalee district, a minority were able to start new micro-enterprises. As in Batticaloa district, many micro-entrepreneurs who started or expanded businesses were women, including some who operated on-line.

I am a tailor, making clothes and selling them, and now I have also started an online business. The online business is a success for me... I am able to get the materials quickly and I can easily go to the post-office to send off the items. And we have a courier service. (Female tailor, 27, Aalaiyur, Trincomalee district)

After the infrastructure project, I have started cooking for the people working in the water supply project and the officers working in the water purification plant. My husband is supporting me and I also sew clothes and sell them to the textile shops in our town. (Female tailor/food seller, 47, Aalaiyur, Trincomalee district)

The overall analysis of the five study locations showed that women interviewees were engaged in less income generating activities compared to men, while almost all women were engaged in reproductive and household activities. In terms of reproductive activities such as cooking, cleaning and childcare, the majority of female research participants were engaged in these tasks along with their daughters and female relatives in all communities, irrespective of ethnicity/religion. While these tasks remained unchanged in households of interviewees in study locations in Batticaloa district, there appeared to be a slight reduction in women's engagement in these tasks, following infrastructure development in study locations in Trincomalee district. This change could be due to women taking on new income generating activities and/or having the support of grown children for these tasks.

Research participants and family members also engaged in reproductive activities, such as fetching water and firewood, gathering greens, fruit and medicinal plants, for which they depended on natural resources available in their environment. These were performed by wives in the majority of cases, followed by daughters and a few other female relatives in Batticaloa study locations. While tasks such as collecting water, greens/fruits, and medicinal plants were done mainly by women collectively, gathering firewood was a task predominantly carried out by wives. In the minority of cases where men participated in these tasks, they were all from Tamil Hindu households. In contrast in Trincomalee district, more male than female members of households interviewed were involved in all these reproductive activities conducted outside the house, irrespective of ethnicity/religion. The only exception was fetching water, which was done by mostly by women. However, where men engaged in this task, they were from Tamil Hindu households.

In study locations in both districts, there were changes in these reproductive tasks, following the implementation of infrastructure projects. Among research participants in the Batticaloa district, those collecting water remained unchanged, while those collecting firewood decreased substantially and those collecting medicinal plants reduced somewhat. On the other hand, those collecting greens/fruits increased somewhat, after infrastructure development. The decrease in two of these tasks could be due to interviewee households gaining access to services, such as gas cylinders and healthcare. In contrast, in study locations in Trincomalee district, collecting firewood by research participants remained unchanged, while those collecting water decreased substantially and the small minority collecting medicinal plants ceased this activity altogether. As in Batticaloa district, collecting greens/fruit increased somewhat in the Trincomalee study locations, following infrastructure development. The decrease in collection of water and medicinal plants could be due to better access to pipe borne water (as in the case of Aalaiyur) and healthcare.

Thus, some households no longer engaged in collecting water or firewood in study locations in the two districts, as they were connected to a water supply scheme or were able to switch to the use of gas for cooking. This, however, was considered an additional cost burden by some district key informants, although the households perceived this as an improvement of their standard of living and reduced burden for women. It is noteworthy that research participants continue to engage in gathering greens/fruit despite development and thus reveal their dependence on natural resources within the coastal environment.

5. Impacts of infrastructure development and community responses

This section analyses the benefits and costs of infrastructure development on coastal communities and ecosystems in the study locations, and the responses of research participants to negative impacts. Overall, key informants in Batticaloa district perceived greater benefits than costs to coastal communities from infrastructure development while those in Trincomalee district perceived a mix of benefits and costs. Research participants from three study communities, Muhathuvaram in Batticaloa district, and Aalaiyur and Kadalveli in Trincomalee emphasised benefits over costs. The majority from Venkarai in Batticaloa district indicated both benefits and costs. All interviewees from Karaipuram in Trincomalee mentioned more costs over benefits. Costs identified by community research participants were mainly relational and linked to tourism or industrial development, especially where no consultation process with affected people had taken place. Unlike in Venkarai in Batticaloa district, where investments were made through the state-supported Pasikudah tourism development zone, which favoured larger external investors over local people, the growth of tourism in Kadalveli in Trincomalee district was an organic process driven by local people as much as by outside investors, some of whom became business partners. While perceptions of costs in terms of socio-cultural issues were similar in both locations, these were expressed by more research participants in Venkarai, compared to Kadalveli. Moreover, livelihood benefits were perceived as higher in Kadalveli, where both larger hotels and smaller guesthouses had access to the beach, and local people had more opportunities for employment within the formal sector, as well as for self-employment to provide tourists with services and earn higher returns. In considering the large infrastructure development projects in both districts, i.e., the fisheries harbour in Muhathuvaram and the water treatment plant in Aalaiyur, accompanied by road expansion and drainage systems, the benefits were perceived to far outweigh the costs.

In both districts, key informants indicated a range of negative impacts on coastal ecosystems. Key informants from CSOs were largely critical of waste management and pollution control by local authorities, while those from the government sector maintained that adequate waste management systems were in place, but were constrained by lack of awareness among communities and non-compliance by some project implementors. Research participants from communities were less aware of

the issues around destruction of ecosystems, waste management and pollution, and did not articulate these as negative impacts of infrastructure development to the extent indicated by key informants. The response to negative impacts were relatively low among community members, although several national NGOs had taken action against the construction of major infrastructure that would cause harm to the environment in both districts.

5.1 Impacts of infrastructure development on coastal communities: Benefits and costs

Batticaloa district

In Batticaloa district, positive impacts of infrastructure development on coastal communities were emphasized over negative impacts by key informants. While this was consistent with research participants in Muhathuvaram, those from Venkarai indicated a mix of benefits and costs. All key informants indicated material benefits, such as improved access to transport and markets, employment opportunities, improved education, access to electricity and water supply. Key informants from the non-governmental sector pointed to material and relational costs to communities, such as tourism development being controlled by external contractors and investment, loss of livelihoods and production of local people and influence of negative behaviour of tourists (e.g. alcohol and drug consumption) on children in local, rural communities. Key informants also pointed to increased monetary costs due to electricity and water connections, as well as the use of gas for cooking, rather than firewood, which was accessed as a free resource previously. No loss of land due to infrastructure development in the post-war period was reported, although people had been displaced and resettled in new housing schemes, following the creation of a coastal buffer zone after the Tsunami of 2004. While most government key informants did not perceive any loss of access to livelihood resources, CSO representatives pointed to the loss of access to the beach for fishing and livestock grazing, as well as loss of livelihoods, such as small businesses located on land (owned by the state or a large private landholder) allocated for hotels in the tourism development zone in Pasikudah. Key informants from the government sector in this district did not perceive that benefits of infrastructure development, such as access to roads, electricity, water and street lights, were different for women or men, although some pointed out that entertainment costs for women had increased as better road connectivity increased visits by relatives

and friends. Some CSO representatives pointed out that particular types of development such as garment factories and tourism provided more employment opportunities for women. In garment industries, women transitioned from the informal to formal sector with better pay and more employment security. On the other hand, it was pointed out that women had to follow a stricter labour regimen and lacked the flexibility of the informal sector, thus experiencing relational costs. Additionally, key informants from CSOs said women were not often consulted or engaged in decision-making related to development projects, as were male leaders of communities.

In Muhathuvaram, research participants emphasized a range of material benefits from the expansion of the fisheries harbour and roads, as well as some relational benefits. Both women and men indicated positive impacts in fisheries-related livelihoods across the value chain, such as fishing, fish processing and trading. Fish processing was a value chain function especially beneficial to women, although many men were engaged in this livelihood as well in Muhathuvaram.

The fishing harbour development has created job opportunities for a cross section of the people who do the fishing business. Their livelihoods have improved and access to getting the fish for their business has improved. (Male carpenter, 37, Muhathuvaram, Batticaloa district)

I have been doing a small business of selling dried fish, for which the expansion of our fishing harbour has been a great thing. Now as far as I know, many people benefitted and got employment opportunities though this fishing harbour like me. Now we can quickly go to the fishing harbour to get the fish due to infrastructure development, such as roads and transport. In earlier days, we had to repair our bicycles and motor bicycles daily because of the poor condition of the roads but now they are very smooth and in good condition. I think more than 300 day-boats are coming daily to the fisheries harbour and hundreds and hundreds of people are coming to get fish which is very useful for us to get fish to dry. In our area, there is a big demand for dried fish. (Male fish trader, 61, Muhathuvaram, Batticaloa district)

I would like to tell you about what I know about the fishing harbour development, which helps most of the people in our area. The harbour

created a considerable number of jobs. Most of our people benefitted by this project directly and indirectly. I can see that people from other areas and other districts come and collect the fish caught at the fishing harbour. I can personally tell you that I have benefitted from this project - that is, I get the fish during excess catches and process, dry and sell the fish. Due to the development of the tourist hotels in Pasikudah, most people [local tourists] come here and they sometimes visit our places and get dried fish, through which our income has increased. I don't know the people who are working there [in the hotels] but I do business with the visitors. (Female food seller, 51, Muhathuvaram, Batticaloa district)

There was increased investment in fishing boats by local entrepreneurs resulting in increased employment for fish workers, as well as auxiliary occupations, such as drivers of fish trucks transporting fish to larger urban centres.

A certain number of people like I bought new boats and invested in the fishing industry. We have given jobs to at least 10 people, which include a driver and two helpers to transport the fish to Colombo and elsewhere. Local fish traders have work daily, they come to the harbour and get the fish on priority basis and sell them daily. (Male boat owner, 44, Muhathuvaram, Batticaloa district)

In addition, women and men engaged in farming and trading of agricultural products also benefitted through the improvement of the road network, rehabilitation of irrigation canals and construction of bridges.

As I am a female head of a household, the development of the road networks paved way for a lot of good things that happened in our areas. I collect paddy and process paddy for my rice business to educate my children. The development of the roads gives quick access to get the paddy and it is easy for me to process the paddy and transport to my home. (Female grocery store owner, 48, Muhathuvaram, Batticaloa district)

Due to the construction and renovation of the irrigation channels and small bridges, the farmers get a smooth flow of water to the paddy fields. If there is a smooth flow of water, the farmers benefit and can get

good yields and harvests. Due to the construction and renovation of the small bridges, the excess water goes through the bridges through which the paddy fields are safe from flooding. Due to the construction of the roads, it is easy for us to transport our agricultural crops and inputs. (Male agricultural labourer, 51, Muhathuvaram, Batticaloa district)

Among women, the improved connectivity was a boon to a range of micro-small businesses, such as sellers of vegetables, fruits and cooked food, as well as producers of reed crafts among women. These enterprises cater to local producers, local and external traders and tourists from other parts of the country.

Some people sell their harvests from their gates because the people travel to the interior to get vegetables, banana, pumpkin, keerai [greens], avaraikai, papaya, and even some reed products such as plates and mats. The local tourists who come to our areas buy them and the people in our areas also come and collect them...I sell string hoppers [type of rice noodles] to the fishermen and fish traders for breakfast. Due to this project, I am getting enough income to fulfil my basic requirements as I am a widow who has placed my trust in the fishing people. (Female food seller, 45, Muhathuvaram, Batticaloa district)

Men who are owners or employees of eateries, tea shops, boat and engine repair workshops, as well as skilled craftsmen, such as carpenters have found gainful employment and increased their incomes.

The people coming from other areas have increased through which business has also increased. Before the COVID 19 outbreak, we entertained so many people daily at our eatery. Many people from other areas come here to get the fish. We opened our place at 4.00am to cater the business for fish traders and fishermen. Before 6.00am in the morning, our business is very good. Due to the development of the fishery harbour, our local boat owners and local fishermen have benefitted and due to the arrival of the local tourists the restaurant business has also improved. Some days, we cook food two or even three times a day. We purchase the food items and vegetables at our local market through which their income and businesses have also developed. So many people have generally benefitted. (Male cook, 41, Muhathuvaram, Batticaloa district)

Due to this project, not only the fishermen have benefitted but also small business people running tea shops do good business and their incomes have also increased. They open their tea shops very early in the morning targeting the people who come to collect the fish. For all of these, the development of road and transport I would say, are the main reason. (Female grocery store owner, 48, Muhathuvaram, Batticaloa district)

When I talk about this fishing harbour, I can say that the location has a lot of potential and is suitable for the harbour because a lagoon connects with the sea through which the repairing of fishing nets, boats and motors can be carried out at this location. With the development of this fishing harbour, many people do some side businesses like selling breakfast, running tea shops, retailing fish. Motor mechanics work here, the kerosene oil business has increased, carpenters have jobs, experts in repairing fishing nets have got jobs, daily paid labourers have got jobs. (Male boat owner, 44, Muhathuvaram, Batticaloa district)

Our occupation, that of doing carpentry, has also developed due to the development of the infrastructure. I feel comfortable doing our work. It is very easy now to transport timber and sell our products. Sometimes, local people who visit our areas purchase our products. (Male carpenter, 37, Muhathuvaram, Batticaloa district)

They also indicated benefits from a new drainage system that accompanied road construction, preventing flooding in coastal neighbourhoods, and enabling cultivation of home gardens, with crops for subsistence and sale.

In our areas the road were constructed with drainage facilities which in my understanding avoid flooding and those who do home gardening are free from plants withering every year. The loss is avoided and the size of the harvest is almost profitable. (Female food seller, 45, Muhathuvaram, Batticaloa district)

Most importantly, I would say that when they built the roads, they constructed the drainage, which saved our home gardens during the rainy season. No flood was experienced, the excess water drained through the drainage, which is the other benefit for us. Otherwise, we

would have lost our home garden and the income out of this. (Male nut seller, 56, Muhathuvaram, Batticaloa district)

Easy access to school for children and hospital for patients was mentioned by some women and men.

Before the project was implemented in our areas, we had untold difficulties. During the rainy season, it flooded - roads seemed not in motorable condition, it was even very difficult for patients to get to hospital, people to travel to work, children to go to school and to get our basic needs. But now we are happy. (Agricultural wage labourer, 51, Muhathuvaram, Batticaloa district)

The road construction and drainage construction benefits people in numerous ways. Now the access is easy, we have received all facilities such as streetlamps, electricity and quick transport services and our children go to school without any difficulties. (Female tailor, 35, Muhathuvaram, Batticaloa district)

Relational benefits were less apparent but a male boat owner indicated that the harbour had become a common or shared space for local fishers and fish traders, with increased use by small-scale nearshore fishers using day boats (fibre-reinforced plastic boats with outboard engines, OFRP) whereas in the past, the harbour was mostly confined to use by deep-sea fishers, using larger vessels (multi-day boats).

In my understanding, it [harbour] is a common space for all the people, I mean, all the fisheries people. Our village people get more benefits than outsiders comparatively but when selling the fish... When you looked at the fishing in Muhathuvaram some years back, the people who benefitted were only those who went deep sea fishing. But now the situation has totally changed, now the fishermen who go near-shore fishing have also benefitted from this project. (Male boat owner 44, Muhathuvaram, Batticaloa district)

At the same time, priority in trading was demanded by and given to local fish traders. Thus, the harbour appears to have increased social inclusion within the local fisheries sector. Moreover, links between local fishers/traders and external

traders increased, enabling increased production, and better storage and transport of fish.

Large quantities of fish (catches) are sold to outsiders because they come here and buy the fish and some bosses [local traders] have connections with wholesale fish traders. They [local traders] send the fish to them, they [wholesalers] have given them facilities such as coolers [freezers] and arrange transport facilities too. Our local fish traders also get the fish and sell this. They have been given priority when selling the fish.
(Male boat owner 44, Muhathuvaram, Batticaloa district)

Several women mentioned the subjective benefit of having traders deliver household goods right at their doorstep.

Due to the development of the road network and improved transport, we are able to get the items which we want at our doorstep and most of the items are available in our village. We don't need to go to town unnecessarily to get the items. Every day so many companies come to our place to deliver their items. (Female grocery store owner, 48, Muhathuvaram, Batticaloa district)

One female research participant pointed to the material benefit of being able to repay loans leading to the subjective benefit of not feeling burdened by loans.

The fishing people and fish traders have benefitted. Even my husband is engaged in fish processing and drying fish, by which we have settled our loans and now live without the burden of a loan. (Female tailor, 35, Muhathuvaram, Batticaloa district)

The negative impacts of the infrastructure development in Muhathuvaram indicated by a few men and women were mostly relational. This was identified as competition between traders, especially local and external fish traders for access to fish by both female and male research participants. Some remarked that large and/or external entrepreneurs benefitted more from the development than fishers or micro/small fish traders. This could also lead to inadequate supplies for local consumption.

It [fishing harbour] has created big competition among fishermen, fish traders and even fisher women. Not only that, the people from other areas also come here to get the fish for their curry and dishes. (Male fish trader, 51, Muhathuvaram, Batticaloa district)

The competition among the fish traders has been mounting daily. I have noticed that nowadays, there is great competition among them to get more fish and some bosses [large traders] have advanced money for their catches. Sometimes the fishermen get less fish and only the bosses get benefits, as they sell the fish at high prices. The development of the fishing harbour is for the benefit of the fishing-related business people. (Male carpenter, 37, Muhathuvaram, Batticaloa district)

The harbour is where most of the big fish traders give money to fishermen, get their catch and export the fish to Colombo and other areas and get more profit than selling this fish in the local markets. We are the people finding difficulties in getting the fish for our cooking sometimes. (Female tailor, 35, Muhathuvaram, Batticaloa district)

A female rice trader also indicated competition among micro-entrepreneurs in general over prices, as there was an increase in trading due to better road access. Similarly a male carpenter indicated that there was a reduction of income due to competition and options available to clients to look elsewhere.

If I tell the truth, small business people like me have got affected because there is big competition between the small business people in fixing the prices. Due to road development, people go directly to the town areas to get their needs. (Female grocery store owner, 48, Muhathuvaram, Batticaloa district)

The income has increased but the profit is less now because the people can come and see our products. If they are not satisfied, they go to another place because of the quick access. Those days before the roads and other facilities were provided, we demanded our price for our products but now the situation is not the same as before. For all jobs, there is great competition. (Male carpenter, 37, Muhathuvaram, Batticaloa district)

In Venkarai, both female and male research participants indicated a mix of positive and negative impacts from the Pasikudah tourism development zone.

Positive and negative impacts have occurred because of the implemented project. Many village people's income level has increased and also unemployment reduced. On the other hand, many young people have become addicted to alcohol and cigarettes. (Female grocery store owner, 39, Venkarai, Batticaloa district)

There are positive and negative impacts that have occurred because of the project. Many people from our village got new job opportunities, as well as some people becoming addicted to unwanted habits such as smoking and alcohol. (Male hotel worker, 50, Venkarai, Batticaloa district)

The benefits were mostly material and related to better access through road construction that accompanied tourism development, increased employment opportunities in hotels as service workers (e.g. waiters, cooks, front office staff, gardeners, security guards), as well as self-employment as three-wheeler and other vehicle drivers, and boat operators. It was noted that people earned higher incomes than in their previous occupations. Housing stock in the villages was perceived to have improved.

Boat and transport facilities have increased gradually. Sand and gravel roads became carpeted roads. They help villagers to access the hospital, school, church easily. Irregular public transport facilities have been regularized. We can get the public bus according to the time schedule. (Female grocery store owner, 30, Venkarai, Batticaloa district)

There are lots of job opportunities available for local people such as waiters, cooks, chefs, receptionists, managers, front office staff, gardening staff, security guards and much more...Homestays and homemade food became established because of the tourism project; it became an income generation source for many villagers. (Male hotel worker, 50, Venkarai, Batticaloa district)

Tourists hire vehicles for their trip. It may be a three-wheeler, van or car. Through this, local vehicle owners earn money for their daily needs. (Female rug and mat trader, 47, Venkarai, Batticaloa district)

More job opportunities in our village have helped to reduce unemployment. Most people started new businesses. Brick houses and two-storey houses were built by the people who lived in huts before tourism. Most people switched their work towards tourism-based industries since they could not earn enough money for their day-to-day expenses in their previous work. (Male farmer, 46, Venkarai, Batticaloa district)

Formal employment in tourist hotels have brought about increased incomes, especially for widows and youth.

Many women got employment opportunities in hotels and restaurants. Students who dropped out of schools also got work. These are the advantages that villagers got. (Male mason, 53, Venkarai, Batticaloa district)

According to my knowledge, more than 30 women-headed families are working here in the hotels. Not only that, youngsters who dropped out of school also work in the hotels and restaurants. (Female hotel accountant/receptionist, 35, Venkarai, Batticaloa district)

Moreover, increased demand for seafood at the hotels enabled fishers to earn additional incomes by supplying fresh fish, as well as command increased prices.

At least 200-300kg fish are required for all hotels and restaurants here. It is a great advantage for the fishermen - they do not go to the market or village to sell fish but they sell it to the hotels immediately after fishing. (Female hotel accountant/ receptionist, 35, Venkarai, Batticaloa district)

There are lots of job opportunities that have arisen – with higher demand, even the fisheries community could sell fish and other seafood to the hotels and restaurants. Another advantage is that as tourists prefer to have fresh seafood, we can raise prices of seafood. We feel

that we receive the right price for our effort. (Male fisher, 29, Venkarai, Batticaloa district)

Increased property values and incomes made through sale of beachfront property was also indicated by a few research participants as a benefit.

Property and land values were very low near the beach before the project implementation. After project implementation, villagers who lived on the beach front, sold their land and properties for millions and crores. (Female guest house owner, 39, Venkarai, Batticaloa district)

A subjective benefit indicated by many women and men was the fame their village had garnered as a tourist destination, while one female respondent also pointed to the benefit of acquiring English language skills as a result of tourism.

Our village has developed and many people do know the place called Venkarai. In Sri Lanka, it has become a famous tourist location, especially for beach and luxury hotels. (Male mason, 53, Venkarai, Batticaloa district)

Another advantage is language proficiency. Even hotel labourers and three-wheeler drivers can manage the English language. (Female hotel accountant/receptionist, 35, Venkarai, Batticaloa district)

One male research participant indicated a relational benefit linked to better opportunities and reduced unemployment as leading to better social relations within the family.

There are lots of opportunities brought by the project as we all know. As I stated before, fishermen and vehicle owners got the opportunity to sell their products and services to the tourist who arrives here. Apart from that, before the project was implemented, villagers suffered unemployment. After that [project] they got job opportunities and their family life is also so much better now. (Male fisher, 52, Venkarai, Batticaloa district)

However this perception was contradicted by the majority of research participants in Venkarai. Both women and men consistently referred to relational costs of tourism, especially the opening of bars, spas and massage parlours for tourists but which attracted local clientele. In addition to increasing alcoholism, they also indicated that household money was spent on unnecessary expenses which resulted in reduction of money for basic needs and conflicts within the family.

Spas, massage centres, bars are all over our village. Our local people from the community consume alcohol more heavily than the foreigners; therefore a lot of problems occur in families and their personal life. Some issues end up with divorce. In earlier days, we could find some peace and harmony in families, now it has become worse because of their alcohol addiction. Instead of spending money on their family and the children's education, husbands are spending on alcohol consumption and other unnecessary pleasures. (Female grocery store owner, 39, Venkarai, Batticaloa district)

Moreover, these establishments while being considered necessary for tourism, were perceived as culturally inappropriate and a source of disharmony within the community, revealing both subjective and relational costs for women and men.

Bars, spas, massage centres are common in tourist locations all over the world. However our local community also wants to obtain services from these service centres, which are not affordable and relevant to our culture. Having a small amount of income from their occupations, local villagers also go for this. Later their families suffer trying to fulfil even their basic daily needs. It is a root cause for the huge disputes within families. (Male fisher, 29, Venkarai, Batticaloa district)

We have to admit that our culture has collapsed due to the arrival of foreigners and increased alcohol consumption, spas and massage centres, which are disadvantageous for the local people. (Female rug and mat trader, 47, Venkarai, Batticaloa district)

Several women and men also indicated that there was an increase in school dropouts, as youth preferred to work in the hotels, rather than continue in school,

or were not motivated to go to school due to addictions, such as alcoholism and smoking.

Many children drop out of school and work in hotels and many of them learn unwanted habits, such as consuming alcohol. (Female rug and mat trader, 47, Venkarai, Batticaloa district)

There is a negative impact also, such as students dropping out of their education and starting to work in the hotels and tourism-based restaurants as waiters and assistants. Because they get extra money as tips. (Male fisher, 29, Venkarai, Batticaloa district)

We have bars, spas, massage centres here, some youngsters visit these to get experience, such as what is going on there and they become used to it. But these are very important to attract tourists in the tourism industry. (Female hotel accountant/receptionist, 35, Venkarai, Batticaloa district)

Development of the tourism zone by external private investors and contractors, the hiring of workers from other districts to work in hotels and arrival of external entrepreneurs running boat service or massage parlours emerged as material and relational costs of tourism for members of the community as well.

After the war, many private contractors visited our village and started to build hotels and restaurants. Our people's old small shops were removed because of their unhygienic conditions. (Male farmer, 46, Venkarai, Batticaloa district)

Many three-wheel owners and boat owners came to this place from various parts of Sri Lanka to do business with tourists...There is an issue in our village because of the massage centre. Massage centres are established by people from outside areas, such as Hikkaduwa. Our local people also become customers; those people spend more money on the massage centres instead of spending on their families. Some of our village people also work over there. It is a cultural and social issue for our community. (Male hotel worker, 50, Venkarai, Batticaloa district)

In comparison to research participants in Muhathuvaram who were positively affected by harbour development, those in Venkarai indicated considerably more costs from tourism development. In both study communities while benefits were predominantly material, costs were relational and subjective.

Trincomalee district

In Trincomalee district both positive and negative impacts of infrastructure development on coastal communities were equally emphasized and were primarily material in nature. This was generally confirmed by research participants in the three study locations, which indicated a range of impacts – from mostly positive to mixed to mostly negative. The main benefits indicated by key informants was the access to new employment opportunities, followed by better living standards. Employment opportunities reported were in industries such as cement, flour and garments, as well as in tourism. Some of these industries are relatively old and preceded the post-war period but expanded or were revived following the end of the war. Tourism especially gained a new impetus in the post-war period. Tourism development in Trincomalee was perceived as benefitting local people and undertaken by external investors in partnership with local land owners, in contrast to the tourism development zone in Pasikudah, Batticaloa. Negative impacts on coastal communities mentioned by both CSO and government key informants were relational and material, such as restrictions in access to fishing due to both industrial and tourism infrastructure, although some attempts were made to provide alternative access to or landing sites on the beach to fishers. Scarcity of fish, changes in boat ownership patterns, loss of employment for fisheries workers, transition into other livelihoods as workers rather than as owners/employers were some of the changes that took place due to reduced access to and viability of fisheries. Another frequently mentioned material cost by CSO representatives was the harmful effects of cement dust on health of communities. In addition, partiality in selection of locations for infrastructure development and distribution of benefits based on ethnicity, emerged as an important relational cost of infrastructure development in Trincomalee district. Loss of livelihood opportunities other than fishing, such as woodcutting and local industries, was also indicated. No recent loss of land due to infrastructure development was indicated, although some key informants indicated that there was uncertainty in coastal communities about potential acquisition of land for industrial development. Moreover, land acquisition for military, religious and archaeological purposes, some of which included

infrastructure development supported by the state, was indicated as resulting in exclusion of local people from their livelihood resources. In Trincomalee district, some key informants from both government and CSOs did not perceive differential benefits and costs to women and men from infrastructure development. However, others indicated better opportunities for men in some industries, such as the cement factory, and for women in the tourism sector. At the same time, they pointed out that women were often workers in tourism or confined to the informal sector, while men were owners and managers of hotels. Some cultural constraints for women to work in the tourism sector were also indicated. Lack of equality at community level leading to exclusion of women in participation and decision-making relation to infrastructure development was mentioned by some CSO representatives.

In Kadalveli, research participants perceived the organic development of tourism within this community in close proximity to an older resort town, as bringing about a mix of positive and negative impacts, but the positive was emphasised somewhat over the negative impacts.

There are many positive outcomes that our people got such as employment opportunities, new business opportunities, new roads were built and so on. There are some drawbacks too, such as school children selling their home-made products during the season by skipping school. (Female grocery store owner, 43, Kadalveli, Trincomalee district)

We have mostly benefited from this project. There are many opportunities, such as tourist guide services, boat trip services, three-wheeler transport services, generated by this project. Village people can sell their products and services to the foreigners through this. New hotels and guest houses were built by investors. It has all brought income benefits to village people. (Male guest house owner, 40, Kadalveli, Trincomalee district)

Compared to Venkarai, the material benefits from self-employment appeared to be higher – both women and men were engaged in running small businesses catering to tourists, such as restaurants, guesthouses, homestays, boat trips and crafts. Increased incomes and reduced unemployment were indicated by both women and men.

We could fulfil our daily needs by tourism-related jobs. Not only that, tourism-based new job opportunities, such as cooking, cleaning, gardening, tourist pick-up and drop-off services were generated, so we could earn money from this sector. New tourist hotels and restaurants were built. Many job opportunities were created by this project - which brought more income to village people. (Female guest house worker, 55, Kadalveli, Trincomalee district)

New job opportunities became available. People started their own businesses instead of doing employment - selling food packages, selling clothes and materials to the tourists. (Male fisher, 45, Kadalveli, Trincomalee district)

Our village people got many employment opportunities and their income levels have increased as they do small businesses, providing transport and boat trips to the tourists. (Female grocery store owner, 43, Kadalveli, Trincomalee district)

Farming households sold fruit to tourists or hotels, crafts households sold woven palm (palmyra) items and fishing households supplied fresh seafood to hotels. Both unskilled and skilled employment opportunities were indicated as having risen.

We sometimes sell the fruits from our home gardens to the hotels or directly to foreigners, such as mango and guava. Village people have mostly benefited a lot. We can sell our home-made products without transport expenses. Many people sell palmyra products, such as hats, key tags and other things. Many people sell natural fruits, fresh fish and other food items, like [boiled] corn. (Female food seller, 52, Kadalveli, Trincomalee district)

Tourism has created skilled and unskilled employment. Seafood traders, food vendors and retailers have come up within the community since they know that tourists need their services. (Female owner of food court, 40, Kadalveli, Trincomalee district)

Relational benefits indicated was the ability to work within the village, rather than travel outside for work.

There are many positive outcomes that we obtained from the project. Before project implementation, our people were going outside our village as wage labourers. Now, we have got job opportunities within our village in tourist hotels. (Male farmer, 53, Kadalveli, Trincomalee district)

Subjective benefits perceived was the fame of their village as a tourist destination, and as a less 'wild' and 'backward' place.

After the war, many infrastructure development activities, such as roads, were carried out by the government and private parties in order to develop the tourism sector. Before that, this village seemed like a forest. (Male farmer, 53, Kadalveli, Trincomalee district)

Tourism made our village more famous in Trinco - because before this, our village was very backward. (Female agricultural wage labourer, 40, Kadalveli, Trincomalee district)

As in Venkarai, costs indicated were mostly relational and linked to a discourse of bars and spas. These were perceived to inculcate addictions, such as alcoholism and smoking, and to challenge local cultural values. However the prevalence of or antipathy towards these services were not expressed as frequently as in Venkarai, suggesting that these were not as widespread or of the same magnitude of concern.

I personally feel that our cultural values are diminishing because of this project - such as spas and bars have been established. Even the local community consumes these products and services. (Male farmer, 53, Kadalveli, Trincomalee district)

School children are mostly affected, such as some students have become addicted to alcohol and some of them are not going to school regularly. (Female owner of food court, 40, Kadalveli, Trincomalee district)

It was noteworthy that women expressed concern over decreased interest in education and irregular school attendance among children within the community, and did not attribute these necessarily to bars or spas, as in Venkarai. Some of these negative impacts on education were ascribed instead to the actions of parents.

Tourists visit during vacation time; school children do business close to the tourist locations and near the beach. These kinds of business activities negatively impact students' education. And also some students learn habits, such as smoking and drinking alcohol. (Female grocery store owner, 43, Kadalveli, Trincomalee district)

People send their children to sell their products during the [tourist] season which affects their education. The month of August is a school holiday for children in Sri Lanka but the season continues until November. So the children continue after their holidays are over. (Female food seller, 52, Kadalveli, Trincomalee district)

Meanwhile, men were more disturbed by the general loss of culture and values, and adoption of new behaviour in relation to clothes and appearance within the community.

There is some negative impact, such as losing cultural values and traditions, being a disadvantage to our village. (Male fisher, 35, Kadalveli, Trincomalee district)

The dress culture has changed - many men wear jeans in our village now. Before the growth of tourism, the men in our village used to wear saram (sarong). Women also wear different clothes and use cosmetics to become whiter by looking at the white people. These create problems within the family economically since they need more money to buy these things. (Male fisher/construction worker, 50, Kadalveli, Trincomalee district)

In Aalaiyur, the majority of research participants emphasised the material benefits from construction of roads, bridges, drainage and a water treatment plant, resulting in increasing economic opportunities, improved livelihoods and increased land values, which seemed to have outweighed negative impacts.

In the name of Allah, I would say that our village got basic facilities, followed by infrastructure facilities, such as water supply, electricity, toilet facilities. The farmers got easy access to transport their inputs to the paddy field, our fishing community benefited by sending their

catches to outside areas very quickly. Now people started opening new shops and supermarkets, our land value has increased. (Female tailor/food seller, 47, Aalaiyur, Trincomalee district)

I wish to say that the infrastructure development such as roads, bridges, and water purification plant built in Muttur are remarkable developments in our area. The construction of the roads and the bridges is very useful for our people who had been suffering a lot and spent lot of time travelling by ferry and on dilapidated roads. (Male electrician, 39, Aalaiyur, Trincomalee district)

For a community dependent on using an irregular ferry service previously, the availability of a new road and bridge network increased connectivity to markets, schools and hospitals, as indicated by both women and men.

The people in Muttur [area] faced untold difficulties particularly in transport services. They used the ferry and ships to travel to other places. During the windy period, travel by ferry or ship was very difficult and consumed a considerable amount of time. We had had to wait until the ferry started to move. During the time when the sea is rough, it took nearly two hours to reach from Muttur jetty to Trinco Harbour. After the construction of the roads and bridges in our area, the travelling seems very easy and we have quick access to anywhere in the country. (Male eatery worker, 26, Aalaiyur, Trincomalee district)

Those days, we found difficulties in taking patients to hospital during the night because if we have to go to Trincomalee hospital or Kinniya hospital we have to get the ferry service. The ferry service was not available in the night but now the situation has changed. The construction of bridges benefitted our people in a practical way. (Housewife, 30, Aalaiyur, Trincomalee district)

Business in the shops has increased, people in more interior areas have been coming into town to purchase their needs. The Muttur bazar has a better look now than before. Fifty per cent of the ordinary people have benefitted by getting their basic facilities and requirements such as electricity, water supply. The education level in Muttur generally and

Aalaiyur particularly has improved. (Male agricultural wage labourer, 60, Aalaiyur, Trincomalee district)

The development of roads also brought more local tourists, increasing income generating opportunities, such as eateries, tea shops and roadside stands selling drinks, snacks, vegetables and fruit. Transporting and selling agricultural crops and fish catches became easier.

Due to the construction of the roads and bridges, the marketing opportunities of our products have increased, the visit of local tourists to our areas have increased, and our catches (fish) are being transported without delay. (Male electrician, 39, Aalaiyur, Trincomalee district)

I want to tell you that the construction of the roads and bridges have supported me to develop my livelihood and now in our area, we can see lots of buildings which are being constructed and new restaurants [eateries] have opened, people have started selling their harvests along the roads - their target is the local tourists passing our areas. (Female tailor, 27, Aalaiyur, Trincomalee district)

The road surface itself is used to dry rice, saving on previous cost of tarpaulins.

The farmers have benefitted by transporting their harvest easily and use the road as their drying spaces for their harvest instead of getting tarpaulins to dry the harvest. (Male mason, 25, Aalaiyur, Trincomalee district)

The material benefit from the water treatment plant was a reliable supply of potable water, which had positive health impacts, in addition to reducing time spent on fetching water. It also had the subjective benefit of creating a more aesthetically pleasing environment through home gardens and flowering plants around houses.

The other milestone development is the water purification plant placed in our village. In those days when I was a school-going child, our mothers, fathers, sisters and brothers travelled 500m or 750m to fetch potable water. Taking potable water was one of our duties. We all had to wait at least 30 minutes or an hour to get the water because there was a huge

crowd at the place where we got water. Now, we have got individual pipe lines and get the chlorinated water to drink and for other purposes. (Male eatery worker, 26, Aalaiyur, Trincomalee district)

Our mothers had to go and had to wait in line to get the water for drinking purposes, which has now eased. Our people have now started growing home gardens and flower plants in our houses to beautify our houses because of provision of the water supply. (Female tailor, 27, Aalaiyur, Trincomalee district)

The relational benefits of connectivity included more social interactions with the external world and creation of new networks, despite market competition, which was not necessarily perceived negatively.

Now due to the construction of the roads and bridges the people from other areas are coming to our areas, and they buy our products and our harvest. They really spend time with us and they inquire about our wellbeing. (Female tailor/food seller, 47, Aalaiyur, Trincomalee district)

The infrastructure development in our area has created a lot of competition among business people, particularly the fish traders who immediately send the fish to the big cities without delay. Local people also find ways to capitalise on the opportunity of collecting and drying the fish and sending these to Colombo and Kandy. On both sides, their businesses and their business networks have developed. (Male agricultural wage labourer, 60, Aalaiyur, Trincomalee district)

The in-migration of people from the nearby Muttur town due to availability of facilities, such as road access, transport, electricity and water supply was seen positively.

Due to the development of roads and bridges, the land value in our areas has increased. The people settled in Muttur town area which is very congested are coming to our areas to settle down because we have proper access, water supply, electricity now, and some of them have started home gardens after they settled here. (Male agricultural wage labourer, 60, Aalaiyur, Trincomalee district)

A few men and women also mentioned the subjective and relational benefits of connectivity - not feeling isolated or that there was a gulf between their community and the world outside, and lack of fear in traveling in the night. This new sense of security was linked to improved social relations.

We had the feeling before the roads and bridges were constructed that we were isolated from the main mode of transport services. The connectivity with others and other districts seemed not easy for us. There seemed to be a gulf but now the situation after the construction of the roads and bridges seems quite satisfactory and our people are free from inconvenience caused during their travelling and engaging in their livelihood activities. (Male electrician, 39, Aalaiyur, Trincomalee district)

The fear of people in travelling during the night has decreased. The social relationships, social interaction and social cohesion have improved. (Male agricultural wage labourer, 60, Aalaiyur, Trincomalee district)

A material cost indicated by a few women and men was the filling of paddy lands due to the increase in land values, loss of paddy lands and construction of houses and other buildings on these lands.

One thing I must say that due to the development of the infrastructure, the land values have increased and the people who bought paddy lands close to the main roads, filled the land and constructed houses. A certain percentage of the paddy land has been lost. As the land value has increased, poor people suffer in trying to get land for their children. (Housewife, 30, Aalaiyur, Trincomalee district)

A relational cost indicated by some women and men was that a proportion of the population of the village did not get water connections from the new treatment plant and were still negotiating with the authorities to access this service.

In Aalaiyur, the installation of the water purification plant helps us immensely. Now we have got individual pipe borne treated water. In some areas, the situation seems the same as before. The National Water Supply and Drainage Board has only laid the pipeline but not provided

the water supply for them. They still go to the wells which are away from their dwelling places. The same suffering continues. Most of the people in Aalaiyur are very poor people and they don't have permanent incomes. If they want to get a water line they need to pay for it but those people still anticipate assistance to get the water connection. (Housewife, 30, Aalaiyur, Trincomalee district)

One male research participant maintained that most benefits of infrastructure development went to local tourists and better-off groups in their community rather than the poor, although there were general benefits as well.

The water purification plant in our area is the other development wanted from a long time ago. Now the people get drinking water without any difficulties compared to before. I have noticed that the provision of the drinking water has not been fully met. In some places, the pipe laying is underway. It is my observation that the benefits enjoyed from these developments are not by our poor people but by local tourists, middlemen and big owners of businesses. But all of these developments have reduced the amount of inconveniences faced by our people particularly in terms of transport and drinking water facilities. (Male electrician, 39, Aalaiyur, Trincomalee district)

One woman also observed material and relational costs to agricultural workers who lost work due to the increased use of mechanical harvesters that accompanied better road access.

The daily wage labourers are affected due to the arrival of the harvesting machines. Almost 45% of the people are dependent on agriculture and related farming work; they work in the paddy fields as labourers. (Female tailor/food seller, 47, Aalaiyur, Trincomalee district)

Karaipuram stood out from the other four study locations in that both female and male research participants perceived very little positive impacts from the development of the industrial zone, which included construction of roads, bridges, water tank, hospital, housing, hotels, port and elephant fence. Some of these projects had not been completed on schedule, had been halted or were still ongoing. Research participants alleged that the inadequate development was due to political factors.

In our area, there are many development activities taking place. Some of the activities have been implemented and some of them have been stopped. Of these development activities, most of them commenced during the good governance tenure [previous regime]. They did not complete them. This government has taken on some of them and stopped some of them. Trincomalee is one district in the country with much potential to gain more earnings. If the development activities have been planned in a proper way, it would be fine but here it is noticeable that there is no proper planning of the activities, which make us feel bad about it. There are Divisional Secretariat staff and District Secretariat staff. But even when they are there, the activities have been taken over by a politician who studied only up to Grade 5 - which saddens us. (Male three-wheeler driver, 41, Karaipuram, Trincomalee district)

Road construction that accompanied the industrial zone was perceived as a material benefit but it was then remarked that this was not well planned or implemented. This was attributed to interference by incompetent politicians, revealing relational costs in infrastructure development within this community.

The development activities whether good or bad are not the problem but the interference by local politicians is intolerable. They are thinking of their economic stability rather than development for the people. There are roads which need to be built but they build the roads where one or two people live. What is the benefits to the village by this? Not only that, they have to discuss with us what should come first and how, but nothing of this sort happens. (Male night watcher, 47, Karaipuram, Trincomalee district)

They are doing what they want. As far as I know, I do not see that the projects are for the people. Roads are being constructed but not maintained properly. They are broken within one or two months. They manage to get their commissions properly. (Female food seller, 71, Karaipuram, Trincomalee district)

Similarly the water tank had been started many years ago but was not yet completed, and thus its potential material benefits were unclear to research participants.

The construction of this water tank started years ago and it is continuing for a long time. They started during the election period and then stopped. What is this, appah! (Female food seller, 71, Karaipuram, Trincomalee district)

The water tank is being built for a long time. I don't know as to when they are going to complete the project. If the project is completed, I feel that there may be some benefits to the people. (Female garment factory worker 41, Karaipuram, Trincomalee district)

Research participants indicated that they were hoping that there would be material benefits such as employment opportunities in factories and hotels. However they had misgivings of these developments, some of which were relational and subjective costs, such as related to social relations and cultural values.

The projects are going on now, so we don't know their benefits yet. In future, there could be benefits. I have heard that some people are going to work at Kappalthurai garment factory, X [ayurvedic medicine] company and ice cream companies from here. (Housewife, 43, Karaipuram, Trincomalee district)

There is talk of developing the tourism in this area. If it happens, there will be ways of getting or earning money but nothing else. But the culture will be ruined in our areas for sure. The development work has been executed without a proper plan. (Female garment factory worker 41, Karaipuram, Trincomalee district)

While work on the industrial zone was still on-going, several factories were operational. However, a woman who worked in one factory revealed that as it was too little pay for too much work, and that supervisors did not treat workers properly, indicating relational costs in industrial development.

I have gone to the garment factory in Kappalthurai for a certain period of time. They get a lot of work from us and give very little salary. The supervisors do not approach the people in a decent manner. They threaten the people. I don't like to live with only having money; their aim is to earn money. (Female garment factory worker 41, Karaipuram, Trincomalee district)

Hotels were still in the construction phase and were considered to be under undue political influence as well. Local people had initially been hired for construction work but it was reported that external workers were being hired for current construction, revealing relational costs in tourism development.

But we have no benefits still from tourism. Some people have got jobs in the industrial zone. Some people used to work at the hotel constructions sites. Now they are bringing in workers from other areas. (Male fisherman, 39, Karaipuram, Trincomalee district)

Hotels are being constructed but none of them have been completed fully and all of them have been politicised. The interference by local political factions is intolerable. They [the political factions] have threatened people saying that there is a land issue in this area and so on, and then get money from some of them. (Male night watcher, 47, Karaipuram, Trincomalee district)

Moreover, there were relational and subjective costs linked to the insecurity created over land acquisition by the state for port development, with officers demarcating land claimed by villagers.

Our biggest issue is that the X Authority people are visiting us often. They show us various boundaries of the land and claim the lands are state owned. That has created a fearful situation for us. (Female farmer, 59, Karaipuram, Trincomalee district)

There was also uncertainty surrounding land acquisition for roads leading to the hotels under construction. No new construction was permitted within the village until the demarcations were confirmed and land deeds issued to villagers. However, research participants revealed that there was contestation over the rights to both private and communal lands in this coastal community.

They are planning to build roads for the new hotels. This might result in many of us losing lands. They are not permitting us to build even a fence for the mosque. They are not granting us deeds. These are the issues we face because of development. They didn't ask our opinions. The X Authority officials come here and show us new boundaries of land. We

have a fear of what's happening. We fear that we might lose our lands in the future. We don't know whose lands will be grabbed. (Female private hospital worker, 24, Karaipuram, Trincomalee district)

We don't have a Muslim cemetery. The X Authority is blocking us from getting a piece of land for the cemetery. They are marking boundaries in public lands claiming rights to them. (Male construction worker, 46, Karaipuram, Trincomalee district)

Thus, research participants indicated relational costs in terms of available employment and land acquisition without any material benefits, as well as subjective costs linked to feelings of uncertainty, insecurity, fear and injustice of land acquisition.

In addition, the combination of tourism, industrial and port development earmarked in this area was perceived to have material costs in access to natural resources, especially fish and forest products.

People who go to gather things from the area are not able to do so now. They have put boundaries for fishing areas which have affected our traditional job, fishing. Honey collectors have lost their access to the forest. (Female grocery store owner, 39, Karaipuram, Trincomalee district)

We believe that most of these projects will cause big impacts in our life. For example, tourism related projects will cause a big impact. Hotels are being built in the area where we had been fishing for many years. We are not allowed to fish in the area... They are marking boundaries in public lands claiming rights to them. People who make a living from the forest are not able to do so now. As they have put boundaries for the fishing area, traditional fishing activities are affected. Honey gatherers have lost access to honey and many more. (Male construction worker, 46, Karaipuram, Trincomalee district)

The interviews with research participants in Trincomalee district revealed three different typologies of coastal communities affected by infrastructure development – Aalaiyur which experienced mostly positive impacts, Kadalveli with mixed positive

and negative impacts and Karaipuram with overwhelmingly negative impacts. In all three communities, material benefits predominated, although relational and subjective benefits were indicated by research participants in Aalaiyur and Kadalveli as well. All three communities revealed relational and subjective costs, with research participants in Karaipuram reporting the most costs, including material ones.

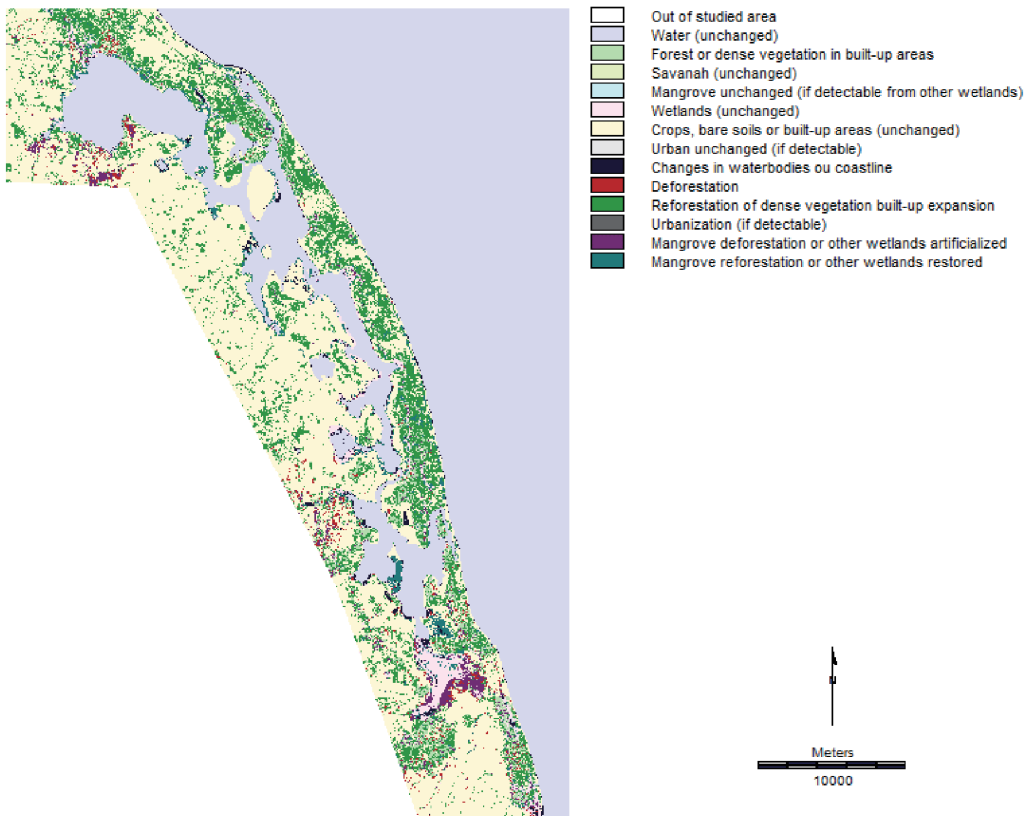
5.2 Impacts of infrastructure development on coastal ecosystems

In contrast to the generally positive impact of infrastructure development on communities voiced, most key informants in Batticaloa district indicated negative impacts on coastal eco-systems, such as increased sand-mining, destruction of mangroves, salt water intrusion and filling up of paddy-fields for construction. A few mentioned positive impacts on coastal ecosystems, such as control of salt water intrusion. Most key informants said that an adequate waste management system operated by local authorities was in place, although not always completely effective. On the other hand, some CSO representatives said that the waste management system was completely inadequate, particularly in terms of waste disposal, relative to waste removal, and that discharge of waste took place into rivers, lagoons and sea, including by the hotels. Increased plastic waste was indicated as causing destruction of marine species.

In Trincomalee district too, most key informants indicated negative impacts on coastal eco-systems from development of factories, constructed prior to the post-war period, as well as tourism development. These included air pollution, discharge of waste into rivers and the sea, water pollution, construction waste left after road development, tree cutting to make way for road expansion, destruction of mangroves, extinction of fish species and improper garbage disposal by people, due to lack of awareness. Positive impacts perceived were construction of rock barriers to prevent sea erosion. Unlike in Batticaloa, there was a clear distinction between perceptions of government and CSO key informants on waste management. CSO representatives were very critical of the lack of an effective waste removal and disposal system, the lack of effort by contractors to remove waste after construction and the lack of concern by local authorities on waste disposal, resulting in discharge of pollutants into the sea and destruction of marine species. Government key informants on the other hand, maintained that a waste management system was in

place but faced constraints of non-compliance by project implementers and a lack of awareness of communities.

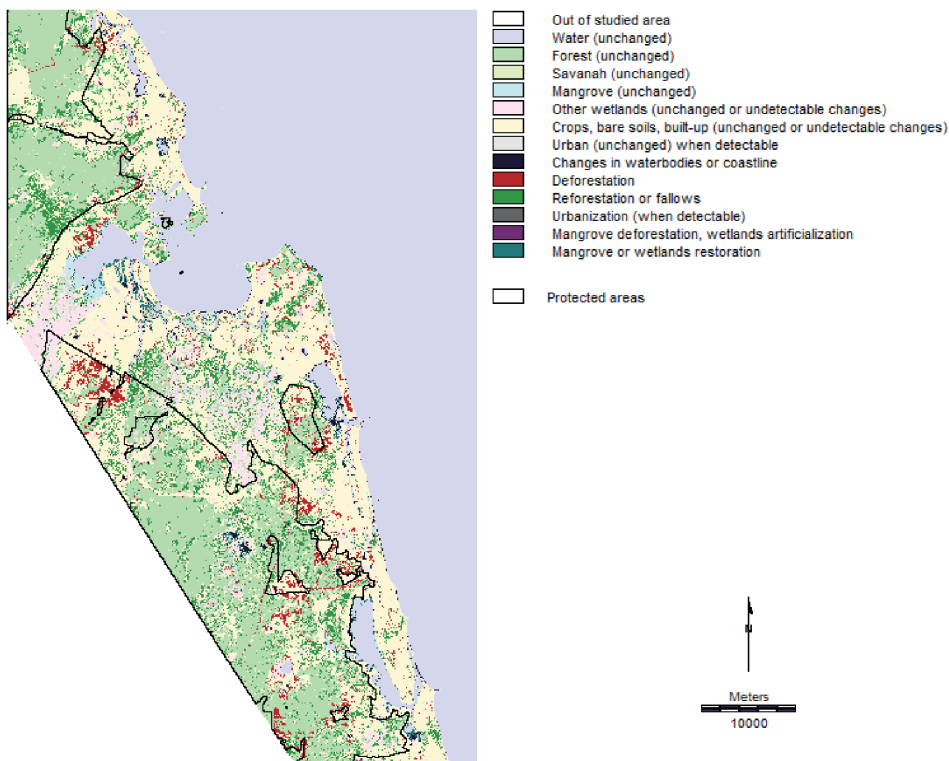
Apart from research participants in Karaipuram who reported the reduced access to forest resources and in Muhathuvaram who informed of illegal sand mining, those from the other study locations did not indicate the destruction of forests or mangroves, or other damage to ecological systems. This is broadly confirmed by the changes in land use as revealed in remote sensing maps of the two districts (SEDRIC 2021). The maps show patches of deforestation between 1994-2019 in the vicinity of the Kappalthurai Industrial Zone. However, mangroves and forests near the other study locations have remained largely intact, and has potentially come under new tree cover.



Map 5.1: Land cover changes in coastal Batticaloa district between 1994 and 2019

According to the maps, the Batticaloa coastal zone has been fairly stable (71%) in its land use, with changes largely dominated by the increase in wooded cover. These are found especially on the coastal strip between the lagoons and the ocean. The interior is largely dominated by agriculture and appears to be very stable. On the coastal strip, it is likely that the increase in wooded areas combined two processes: the extension of tree crops, most likely cashew trees, and the creation of new sparsely built and densely wooded areas under the impetus of the tourist economy. Some wetlands seem to have been degraded in the south of the lagoon, but this would require further analysis (Map 5.1).

The Trincomalee coastal zone has been the most stable (83% of the area has not changed in terms of land cover categories) of the five coastal districts studied under the SEDRIC project, probably because it includes large protected areas. Among the changes, as in the case of Batticaloa, it is the greening/reforestation dynamics which have been dominant (Map 5.2).



Map 5.2. Land cover changes in coastal Trincomalee district between 1994 and 2019

The same process of new tourism-related built-up areas with significant tree cover is also observed (Map 5.2). However, in Trincomalee district, unlike Batticaloa, most of the coast remains agricultural with little land cover change. Here the main patches of regreening/reforestation are located inland, in the protected areas so better conservation efforts or natural dynamics are probably involved but further explanation would have needed more detailed analysis in the field.

In contrast to key informants who reported destruction of coastal ecosystems in the two districts, most research participants from communities expressed very little knowledge or awareness on negative impacts on coastal ecosystems. In Muhathuvaram, one man indicated illegal sand mining following the construction of the fisheries harbour.

After the development of the fishing harbour, I know that sand mining took place. (Male carpenter, 37, Muhathuvaram, Batticaloa district)

Several research participants in Muhathuvaram also referred to hearsay of potential pollution from the harbour in the future but were not able to specify how or why that would take place.

I can say this without hiding, that some people say - please do ask them who say this - that the development of the fishing harbour will pollute the environment in future. Now you cannot understand the harm caused by the harbour but you will realise it in the future. (Female tailor, 35, Muhathuvaram, Batticaloa district)

In Aalaiyur, several men and women indicated that filling up of paddy lands had taken place due to the rise in land values following development, and construction of new houses and buildings on these reclaimed lands.

But the negative impacts are filling of paddy lands on both sides of the main access roads. They bought the land and filled the land, they built houses and other buildings. (Male electrician, 39, Aalaiyur, Trincomalee district)

Several women and men also referred to the threat from wild elephants in both Aalaiyur and Karaipuram. They wondered whether infrastructure development

had resulted in the intrusion of elephants into their lands, especially filling up of paddy lands.

At the same time, we are afraid of wild elephants coming to our areas and destroying our coconut trees, our fences. I don't know whether this is happening due to the development of our areas or not. (Female tea shop owner, 58, Aalaiyur, Trincomalee district)

After the infrastructure development in our area and the resettlement, we have been facing two issues and challenges - one is that the wild elephants come to our area and destroy coconut trees and demolish small huts. This is because of the unavailability of electric fences and filling up of paddy lands. (Male agricultural wage labourer, 60, Aalaiyur, Trincomalee district)

Almost all research participants in the five study communities perceived no major problems with solid waste collection, disposal or pollution. They considered that the municipal or other local government authorities were doing a good job in handling waste in their communities.

We can see proper disposal methods which are followed by the Urban Councils and Divisional Secretariat office regularly. Therefore waste does not affect livelihoods and the quality of life in our village. (Female grocery store owner, 39, Venkarai, Batticaloa district)

The waste is removed properly by the Pradeshiya Sabha. The drainage was built, through which the excess water flows smoothly. I do not see anything wrong. (Female grocery store owner, 48, Muhathuvaram, Batticaloa district)

We have our own cleaners in our hotels and restaurants. And also we dispose waste through the Municipal Council tractors. We are not having any issues (Male guest house owner, 40, Kadalveli, Trincomalee district).

Some pointed out that while the situation had been poor previously with the development of tourism, garbage collection had greatly improved, although compliance by local people was not always forthcoming.

Since I work close to the beachfront and the tourist area, in the earlier period, waste disposal and pollution affected our livelihood activities. However, government officials appointed people to clean up the area. Now it is regularised and we can see a tidy beach area. Apart from that garbage bins are placed everywhere near the beach. Most of the tourists use these garbage bins, even though some local people refrain from using these. (Female grocery store owner, Venkarai, Batticaloa district)

After tourism development, the waste management system is followed better. Now our village seems much cleaner than in the past. (Male fisher/construction worker, 50, Kadalveli, Trincomalee district)

Only a few research participants interviewed, expressed the view that waste disposal was irregular or inadequate.

The waste is collected by the Pradhesiya Sabha, not in a regular manner but they collect the waste. (Female tailor/food seller, 47, Aalaiyur, Trincomalee district)

We have difficulties during the [high tourist] season to dispose garbage. We have a lot of waste each day and it should be removed every day but the appointed team will come only twice a week. During the off-season, waste disposal and everything is manageable. (Female hotel accountant/receptionist, Venkarai, Batticaloa district)

Waste disposal is done by the Divisional Secretariat office. However, we see garbage such as plastic bottles, empty food packets on the beach. Tourists feel uncomfortable when they see that. So I hope they will not decide not to visit again if waste disposal management does not function properly. (Male farmer, 53, Kadalveli, Trincomalee district)

The waste is removed by the Pradeshiya Sabha. I am of the understanding that they have to improve waste collection and they have to regularise waste disposal. (Male eatery worker, 26, Aalaiyur, Trincomalee district)

One case of improper waste disposal was reported due to inadequacies in the development of infrastructure.

My understanding is that in the project particularly the drainage and internal road construction have been carried out not focusing on future requirements. Due to the improper construction of the drainage, it has become a dumping place for waste. (Male mason, 25, Aalaiyur, Trincomalee district)

Overall, while research participants were concerned about waste removal from their own communities, very little interest or knowledge was expressed on where the waste was eventually disposed and potential pollution of water sources or the land due to inappropriate waste disposal practices.

5.3 Responses of communities to negative impacts

According to district key informants in both the Batticaloa and Trincomalee districts, communities have responded to negative impacts of infrastructure development by writing to authorities and have become aware of the negative impacts of infrastructure development through personal experience and civil society awareness raising programs. Social media is the primary outlet for the general public, particularly the youth, to voice their concerns in both districts. Communities in Batticaloa have protested against an ilmenite factory. Communities in Trincomalee have engaged in strikes and demonstrations. However, there has been no response from authorities and no positive outcomes in both districts.

Based on the responses from government officers, communities in Trincomalee district seem to have better access to and communication with government officers whereby they take their problems directly to them. There seems to be an effort made by government officers to connect with communities to raise awareness about development projects and environmental concerns. On the other hand, in Batticaloa, government officers expressed a lack of understanding of the benefits of infrastructure development and poor coordination between government and

development partners as the reason for protests. Most of the state officers in the Batticaloa district believed that infrastructure development benefited communities.

The majority of research participants from Karaipuram and Kadalveli in Trincomalee districts and Venkarai in Batticaloa district identified some negative impacts from infrastructure development close to their villages. Among those who did, most of these negative impacts related to potential land acquisition in Karaipuram and tourism development in Kadalveli and Venkarai, and most said that these issues were not taken up with any authorities.

In the case of tourism this was perceived as futile due to the nature of the business and people's own choices to engage in livelihood activities catering to tourists, as well as consequences being considered to be experienced at the personal level.

Villagers did not respond to this [bars] and we cannot avoid having liquor bars in a tourist location. (Female grocery store owner, 30, Venkarai, Batticaloa district)

Our people send their own children to sell products based on their own choice, so they do not have any issues with that. (Female food seller, 56, Kadalveli, Trincomalee district)

No reactions were shown because people see these things as their personal issues. (Male farmer, Kadalveli, Trincomalee district)

A research participant mentioned that a protest by a few community members had taken place in Venkarai in relation to an industry manufacturing alcohol in the vicinity of the Pasikudah tourism development zone but there had been no response either from the state or the industry. This was also the case for a protest against the loss of local cultural values in Venkarai.

Now, the people worry about the company called Y going to start a factory in Passikudah, Batticaloa. Actually this is an alcohol manufacturing company. As a women's society we have discussed this matter on a regular basis... A small number of participants carried out a protest. It was organised at village level. There was no response from

government or the industry. (Female grocery store owner, 39, Venkarai, Batticaloa district)

A protest was carried out by the village people, but there was no proper response from government or the industry. Collective action was taken at the village level by holding placards on local cultural issues. I think these kinds of massage centres, spas and bars are required to welcome foreigners to our county. (Male hotel worker, 50, Venkarai, Batticaloa district)

A minority of interviewees in Muhathuvaram and Aalaiyur indicated some negative impacts of infrastructure development as well. An exception in mobilising collective action successfully was in relation to fish trading in Muhathuvaram (Batticaloa district) where community members were concerned that outsiders were gaining control of fishing and fish trading at the expanded harbour and appealed with a petition to the fisheries harbour authorities and the local Member of Parliament to provide priority to local fishers and fish traders. According to these research participants, the authorities committed to the prioritisation of local fishers and fish traders, following this appeal.

In the initial period, there was a complaint that the local fish traders have been affected when selling fish. They made a complaint and brought the issue to the politicians, and they invited us and had a discussion and we requested that they give priority to local people. My understanding is that now there are no such issues. I think it was organized at the divisional level because, the officers from Divisional Secretariat came for the discussion. As I mentioned, now when selling fish, the priority is given to local people; outsiders can buy the fish from them. (Male boat owner, 44, Muhathuvaram, Batticaloa district)

However, one research participant said that this was not entirely effective and a large proportion of fish continued to be taken to Colombo by external traders.

I heard that the local fish traders have made a complaint to our Member of Parliament about giving priority to local business people. I don't know as to how it was organized but I know that they made the complaint to our MP. I heard that it was discussed and then they decided to give

priority to local people but again they say that all the fish is being sent to Colombo. I also know that many coolers [freezer trucks] come here and get fish and go. (Female food seller, 45, Muhathuvaram, Batticaloa district)

Another complaint made by community members in Mahathuvaram was to the police against sand mining, and it was reported that police took action to stop this practice.

We made complaints to the police. At the village level, we discussed and then made the complaint to the police and I heard that the people met our politicians and complained. They promised to take action against this act. Now we do not see sand mining. (Male carpenter, 37, Muhathuvaram, Batticaloa district)

In Aalaiyur, several research participants indicated that a proportion of households excluded from receiving water connections had made representations to the authorities concerned and had been promised to be added to the new water supply system.

Those village people who did not get individual water connections have made the request through our Pradeshiya Sabha member to the Divisional Secretary to provide them water lines at a concessionary rate. I heard that the Divisional Secretary promised to do it after discussing with the relevant authorities. (Housewife, 30, Aalaiyur, Trincomalee district)

In Aalaiyur, a research participant indicated that they had taken collective action in relation to destruction caused by elephants to their crops, by addressing local politicians and government officers.

We have made the request collectively to our Member of Parliament and Divisional Secretary to put up an electric fence to block the arrival of elephants. This was organized at our village level. They - our Member of Parliament and Divisional Secretary - have promised to take action. (Male agricultural wage labourer, Aalaiyur, Trincomalee district)

It is noteworthy that whatever collective action taken came largely from study communities where research respondents indicated benefits over costs, and where a consultation process had taken place. Thus, providing information to affected communities and consulting people also seems to strengthen their capacity to voice grievances. This is in contrast to Karaipuram, which has so far experienced only costs from infrastructure development but where no collective action has been taken, despite community concerns over land tenure issues. However, low levels of response to costs of infrastructure development needs to be understood within the political-ecological context. As national and district level key informants pointed out, coastal communities in these two districts have only recently emerged from a civil war, and thus their priorities are often to make ends meet, rather than engage in collective action. Additionally, members of communities in these two districts are vulnerable in the face of a political environment of surveillance and intelligence gathering, especially as they are not necessarily linked to larger national organisations or social movements.

6. Gender and wellbeing in coastal communities

This section explores notions of wellbeing among district-level key informants and of a good life among research participants, underlying their livelihood strategies, the satisfactions and dissatisfactions in their lives, and the aspirations they hold for their children and themselves in the future. In assessing gender and overall wellbeing in coastal communities in Batticaloa and Trincomalee districts, both women and men appear to have gained material benefits from infrastructure development. These were primarily in the areas of access to employment, increased incomes, education and health. At the same time, these benefits were accompanied by material costs in terms of the deterioration of the environment and access to natural resources of coastal communities, especially fish resources. Infrastructure development has also led to relational and subjective costs, especially linked with tourism.

In understanding wellbeing, there was a general discrepancy between district level key informants and research participants from communities. The perceptions of wellbeing of national key informants from CSOs were more holistic and closer to that of community participants.

In both districts, key informants prioritized the material aspects of wellbeing and described it in terms of access to education and access to employment. In Trincomalee, wellbeing was also defined in relational terms and the need for equal distribution of the benefits of development and a sense of safety and freedom was emphasised by key informants from CSOs. The wellbeing of women was also described in material terms. Government sector key informants in Batticaloa indicated an increase in women's access to education and employment while women heads of households were perceived to have benefited from development projects whereby they are able to be self-employed in Trincomalee district. Women from fishing communities were noted as being unemployed and having poor access to vocational training programs.

In Batticaloa district, key informants indicated that urban areas have seen improvement in access to education due to peace in the post war context allowing children to continue their education. Better access to internet facilities have also enabled children to engage in E-learning and some have been able to obtain a university education as well. However, access to education is still a problem in

rural areas where there is less internet connectivity and less access to secondary education in local schools. This has resulted in school dropouts, early marriage, as well as alcohol and drug abuse among youth. Infrastructure development in terms of roads, streetlights and access to water has also improved quality of life.

In Trincomalee district, most key informants from the state sector said that people's education levels had increased, and they had better access to employment opportunities and vocational training. However, representatives of CSOs noted a lack of access to education and unemployment in rural areas. Fishing communities were identified as affected by development projects. Key informants from CSOs observed that the benefits of development initiatives are distributed unequally and that minority communities do not benefit. The presence of the military in Muttur and Sampur has also created a sense of fear and people do not feel free to engage in their activities, they said.

In discussing their understanding of a good life in their communities, the majority of female and male research participants from three communities emphasised relational wellbeing as the most significant dimension, while those from two communities combined material and relational dimensions. Perceptions of most interviewees from Muhathuvaram, Kadalveli and Karaipuram clustered around good relations within the family and/or community, unity, harmony and spending time with loved ones. The majority of research participants in Venkarai and Aalaiyur were concerned with both material and relational wellbeing dimensions, articulated in terms of basic needs being met, lack of indebtedness, stable employment and income, and/or good health, often in combination with good relations within the family. In addition, subjective notions of wellbeing, such as a peaceful life, independence, living with nature and protecting the environment were also indicated by some women and men interviewed in Kadalveli and Karaipuram.

Notions of a good life

In Batticaloa district, the majority of female and male research participants in Muhathuvaram emphasised the relational aspects, such as good relationships with family and/or neighbours as important for a good life in their village.

I am living peacefully which is a good life for me. My children are my world now. I am living for them. (Female grocery store owner, 48, Muhathuvaram, Batticaloa district)

I live with my neighbours and relatives peacefully with mutual understanding here which I think is good life in my village. (Female grocery store owner, 54, Muhathuvaram, Batticaloa district)

Some male interviewees additionally indicated material dimensions of wellbeing, such as employment, income, as well as relational dimensions, such as helping others.

I have employment near me, and I am living peacefully with my family. (Male boat owner, 44, Muhathuvaram, Batticaloa district)

I engage in service and in supporting people who are in need through our sports club, RDS and mosque. (Male carpenter, 37, Muhathuvaram, Batticaloa district)

In Venkarai, the majority of female and male interviewees combined material and relational aspects, in articulating their notions of wellbeing. Adequate income, stable employment, lack of indebtedness together with a good family life were mentioned most often. Subjective dimensions, such as happiness and peace of mind were also mentioned.

It is very difficult to live in this world without money. Though we have money, it [a good life] depends on the hearts of people. Harmony and peace in life are more important than money. I do not like to be rich in this world. However, an adequate amount of money should be there to fulfil our needs and wants. We need to have some savings to cover emergency expenditure, such as for hospitals, accidents and so on. (Rug and mat trader, 47, Venkarai, Batticaloa district)

Having a permanent job along with a stable salary would be a good life. Happiness, joy and peace of mind are important but we need to have money to fulfil needs and wants. (Male mason, 53, Venkarai, Batticaloa district)

Several women and men considered health as important, while a few male interviewees also referred to good behaviour and living without harming others or nature.

[A good life is] having a life with enough income and luxuries. I think life without any sickness or disease is also important. (Female guesthouse owner, 39, Venkarai, Batticaloa district)

Apart from money, people must have good habits and behaviour. A good life is having a happy life with enough income and a good family. (Male hotel worker, 50, Venkarai, Batticaloa district)

In Trincomalee district, the majority of research participants in Kadalveli and Karaipuram emphasised relational dimensions of wellbeing, such as good relations within the family and community. Some women and men also extended this to relations with nature and responsibility towards future generations. One male research participant mentioned social status in terms of a good reputation as important for a good life. The material dimension of health was also indicated by several women and men interviewed.

Having a healthy life and unity among the villagers lead to a good life. We should interact with people without any partiality. I have my own caring family and I know people from this community very well. (Male guest house owner, 40, Kadalveli, Trincomalee district)

We live together, every evening I come home. That is much happiness for us. (Female garment factory worker, Karaipuram, Trincomalee district)

I believe that a good life is living life with nature, preserving natural resources for future generations and having a life without sickness. (Female grocery shop owner, 43, Kadalveli, Trincomalee district)

In my view, a good life is living a life with prestige without ruining the family name. Maybe we are poor, but we have a good name within our village. (Male fisher/construction worker, 50, Kadalveli, Trincomalee district)

Subjective dimensions of wellbeing emerged as especially important in Karaipuram. These included a peaceful and healthy natural environment, lack of noise and independence. The material dimension of a good education for their children was mentioned as an aspect of the good life by several female and male research participants.

We have a really good life now. It is a beautiful village, having all the facilities. There is sea, forest, farming lands and good air. (Female farmer, 59, Karaipuram, Trincomalee district)

[A good life is] an independent and healthy life without anyone's interference. (Male construction worker, 46, Karaipuram, Trincomalee district)

I want a life where I can give good education to my children. A peaceful life without impacts from the surrounding environment and troubles. A life with a reduced cost of living. A peaceful environment without vehicle traffic or noise. We should be able to sleep peacefully at night. We should live happily with relatives and friends. (Female worker at private hospital, 24, Karaipuram, Trincomalee district)

In Aalaiyur, as in Venkarai in Batticaloa district, most female and male research participants placed equal emphasis on relational and material dimensions of wellbeing. They considered good employment, assets, adequate income and good education for children, along with good relationships within the family and community as important. The relational dimension of wellbeing in engaging in community social activities was indicated by several men interviewed in this study location.

I have our own house, I am getting a reasonable income. My wife has a job, I am living in my own village with my family and friends, so I think I have a good life in my village. (Male eatery worker, 26, Aalaiyur, Trincomalee district)

I live with my family and relatives in my birthplace and now I have some little earnings to maintain my family. (Female tailor/food seller, 47, Aalaiyur, Trincomalee district)

I am a fortunate person because I have a job in my area and am living with the family happily. I am also doing some social activities. (Male electrician, 39, Aalaiyur, Trincomalee district)

Satisfaction and dissatisfaction with their own life

In Muhathuvaram in Batticaloa district and Aalaiyur in Trincomalee district, all research participants indicated that they considered their life as good. The majority of those interviewed in Kadalveli and Venkarai also considered themselves as having a good life, with a minority (larger in Venkarai) indicating that they did not have a good life. In Karaipuram, the majority of research participants provided tentative responses, revealing that their life was good to some extent but that it was not adequate.

Of those who said their life was good, all research participants in Kadalveli, the majority of women and men in Aalaiyur, and the majority of men in Muhathuvaram and Venkarai expressed satisfaction with the relational dimension of wellbeing – good relations within the family. Most women interviewed in Muhathuvaram were satisfied with the material dimensions of wellbeing, including the education of their children, employment and income. Male research participants expressed satisfaction with the relational dimension of religious practice (i.e. attending mosque and reciting prayers) and engaging in social work, in addition to a supportive family life. Female research participants in Venkarai were divided between the relational aspect of good family life, material aspects of adequate income, lack of indebtedness and good education for children, and subjective aspects of being generally contented with what they already had. Apart from good relations within the family indicated by most men interviewed in Venkarai, two men indicated subjective dimensions of wellbeing, one referring to his motorcycle as contributing to his satisfaction, while another indicated that he was contented with all what he had in life. In addition to a supportive family life emphasised by most research participants in Aalaiyur, a female and male interviewee indicated that they were satisfied with the material aspect of a good livelihood, two men referred to relational aspects of their community engagement and religious practice as providing them with satisfaction in life, while one woman mentioned the subjective aspect of being content with living with what she had. In Karaipuram, the subjective dimension of a peaceful environment was indicated most often by both female and male research participants as contributing to their satisfaction. The relational dimension of a

good family life, and the material and relational dimension of having employment close to home were also mentioned by both women and men.

Material dimensions of wellbeing overwhelmingly dominated perceptions of dissatisfaction about their lives for the majority of research participants in all five study locations. Lack of adequate income and employment, lack of means to educate children, and the negative consequences of the COVID-19 pandemic for their livelihoods emerged as the most frequently indicated aspects of dissatisfaction for both women and men. COVID-19, as a material and subjective cost, emerged most noticeably in Kadalveli, where it was linked with lack of tourist arrivals, and to some extent in Karaipuram, both in the Trincomalee district. Female research participants in Muhathuvaram mentioned frequent illness of family members as resulting in their dissatisfaction, as did a male interviewee in Venkarai on his disability due to an injury. Relational dimensions in relation to distrust within the family or among friends were cited by two men and a woman, while death of a spouse as contributing to their sadness was indicated by two female interviewees in Muhathuvaram and Venkarai respectively, as well as a male interviewee in Venkarai.

While some of the dissatisfaction expressed by research participants in relation to their material wellbeing in Muhathuvaram, Venkarai, Kadalveli and Aalaiyur could be attributed to inadequate implementation of infrastructure projects, the current economic situation within the country, including the COVID-19 factor, could be considered to account for these as well. However, in Karaipuram dissatisfaction in the relational dimensions of wellbeing appeared to be directly related to negative impacts of development of the industrial zone and accompanying infrastructure. Poor governance in relation to infrastructure development, land tenure issues and the accompanying subjective dimension of anxiety and fear of the potential loss of lands were predominant in articulations of dissatisfaction among both women and men interviewed in Karaipuram. Several female and male research participants also referred to material dimensions, such as lack of income and employment, as well as issues of food security.

I have worries of thinking of the political situation in the country. There is no proper planning in development, the political factions do whatever they want. I have worries about the prevalence of COVID 19. Most people face difficulties without food and [issues of] food security. There

is no work at this time. What to do? We have to manage this situation.
(Male three-wheeler driver, 41, Karaipuram, Trincomalee)

We have fear that the new developments will cause turbulences or distress in our lives. Also we fear that we might lose our lands. (Female grocery store owner, 39, Karaipuram Trincomalee)

Aspirations for their children and their own future

In discussing aspirations in the study locations, the majority of research participants, both women and men, most frequently expressed aspirations of better education and better employment for their children. In Venkarai, several interviewees indicated that they wished their children to improve upon the lives of their parents. In the Tamil Hindu communities of Venkarai and Kadalveli, a good family life was also considered an important aspiration for children. Good citizenship and good character (integrity, helping others, leadership), and to a lesser extent religious devotion, were emphasised in the Muslim communities of Muhathuvaram and Aalaiyur. In Karaipuram, the majority of male and female research participants emphasised a peaceful environment, and one without fear, as an aspiration for their children. Several men in this community also referred to be a better political situation and ethno-religious harmony, while several women aspired for independence for their children. Both men and women also desired that their children would not be exposed to unplanned development in the future.

In considering their own aspirations for their life in 10 years' time, the majority of female and male research participants emphasised improving their livelihoods or expanding their businesses. While the material dimension of generating more income and improving their standard of living was important, the subjective dimension of owning a bigger or better business, and the sense of success in achieving their goals in life also emerged as significant. A good family life was indicated as an aspiration by both women and men interviewed in Kadalveli. In Venkarai, most men interviewed said that they could not predict the future as their life was in the hands of God, and one mentioned that he wanted to pursue a spiritual path leaving behind his life as a householder in 10 years' time. A few research participants (in Venkarai, Kadalveli and Aalaiyur) indicated that good health was an aspiration and a few also wanted to help others by engaging in community activities. In Karaipuram, the majority of research participants aspired to a better

economic situation in the future, with several Sinhala Buddhist men interviewed emphasising the need for a 'developed' village. In addition, both female and male research participants from Sinhala Buddhist households aspired to a change in the political situation and ethno-religious harmony in the future. Both women and men interviewed from Muslims households desired to maintain their current natural environment around them into the future.

In assessing perceptions of wellbeing overall, all three dimensions of wellbeing emerged as important in study locations. The majority emphasised relational dimensions of wellbeing or combined material and relational dimensions in their understandings of a good life within their communities. At the same time, the majority appeared to be satisfied with the relational dimension of wellbeing in expressing their satisfaction with life, whereas most were dissatisfied with the material dimension of wellbeing. Gender differences were apparent in Muhathuvaram, where women were satisfied with material dimensions of wellbeing, in contrast with men who were satisfied with relational and subjective dimensions of wellbeing. Most research participants in expressing their aspirations for their children emphasised material dimensions, with relational and subjective dimensions being evident in Venkarai, Kadalveli, and Muhathuvaram. Future aspirations of research participants for themselves constituted both material and subjective dimensions. Karaipuram stood out among study locations in that notions of wellbeing among research participants were centred around subjective dimensions of a peaceful environment, and both satisfaction and dissatisfaction were articulated within relational and subjective dimensions of wellbeing. Aspirations for children and themselves were holistic, referring to all three dimensions of wellbeing. Karaipuram reveals a political ecological context of failures in development planning and consultation of affected communities, and absence of material benefits combined with presence of relational and subjective costs to wellbeing. These include reduced access to fisheries and forest resources, contestation over land tenure and fear of the potential loss of lands.

7. Conclusion: Policy Implications

The analysis of infrastructure development projects in five study locations in Batticaloa and Trincomalee districts reveals several issues and challenges in relation to impacts on coastal communities and ecosystems. First, given the fragile coastal environment, decisions on constructing infrastructure needs to take into account the appropriateness of the type of infrastructure physically, economically and socially. Thus, the fisheries harbour and coastal tourism projects are more aligned with the coastal zone physically and fits into the livelihood patterns of coastal people, dependent on fishing, farming and micro-small enterprise, even if these can generate some negative environmental and social impacts. The water treatment plant meets social, economic and health needs and has a relatively small footprint. However, the construction of a 50-acre industrial zone alongside a picturesque bay can be questioned both in terms of more viable investments, such as tourism, that could bring higher returns, as well as on the grounds of negative environmental impacts, such as industrial pollution and waste. In this case, it appeared that the industrial development zone as an infrastructure project was not well planned and has not attracted the envisaged investment or brought economic benefits of any consequence to nearby communities. However, it has resulted in clearing of forests and construction of roads that do not appear to serve any purpose except political patronage, and an environment of insecurity and fear in relation to land acquisition among affected people.

Second, Sri Lanka has an Environmental Impact Assessment (EIA) process that requires the consultation of state and non-state stakeholders, including affected people. In three of the study locations, the EIA process appears to have not been conducted or adequately conducted. In two of the study locations, projects funded by a multi-lateral bank went through an EIA process, including consultations with affected people based on the bank's social safeguards policy, which includes identifying development priorities and appropriate locations, minimising harm and providing compensation to those who are displaced or suffer losses. While this process might not be ideal, benefits to communities outweighed costs in these two infrastructure projects (fisheries harbour expansion and water treatment plant), where such a consultation process was followed. Both women and men had been informed and/or had participated in meetings as part of this process. In the three locations where no consultation took place, research participants indicated mixed impacts or only costs, leading to inadequate wellbeing outcomes and frustration

among them. At the minimum level, a consultation process consistent with social safeguards policies to identify development priorities and locations, to minimise harm and provide compensation for losses, needs to be implemented. However, a process that takes into account the identities, cultures, sense of place and long-term aspirations of coastal communities, as advocated by several national-level key informants, is recommended.

Third, the state policy orientation of infrastructure development projects under broad-scale programmes, such as Neganahira Navodaya, is based on achieving goals of material wellbeing for local communities, through a trickle-down approach from better connectivity to markets and services. District level key informants of both the government sector and from civil society organisations largely subscribe to this approach in their understandings of development and wellbeing. However, the findings of this study show that research participants held more holistic notions of wellbeing, combining relational and subjective dimensions with the material dimension. Some communities and individuals indeed emphasised the relational or subjective dimension over the material dimension. Tourism-related projects need to pay heed to relational and subjective costs linked with resource access and cultural change. While impacts and perceptions on infrastructure development and wellbeing articulated by women and men in the study locations were similar to a great extent, there were nuanced gender differences that need to be taken into account. Women were able to start or expand micro-small enterprises or employment in the formal sector and obtain greater wellbeing outcomes from infrastructure development, especially when projects were well planned and consulted both women and men from affected communities. Moreover, some social groups or sections of the population were excluded from receiving material benefits or suffered undue relational or subjective costs in the implementation of infrastructure projects in study locations in the two districts. Thus, infrastructure projects need to be implemented with a holistic understanding of wellbeing as an outcome of development, as well as with an inclusive and equitable approach to sharing of benefits among social groups.

Fourth, the attention to impacts of infrastructure development on coastal ecosystems was inadequate as revealed by incidences of sand mining, destruction of forests and mangroves, and filling of wetlands, reported by district level key informants and some research participants. In contrast to the impacts on coastal communities, findings show relatively low awareness and knowledge of

impacts of infrastructure development on the structure and dynamics of coastal ecosystems. Thus, preventing environmental destruction, pollution and waste through awareness creation and better implementation of regulations on coastal conservation among all stakeholders is a priority.

Overall, the underlying motivations in the pursuit of wellbeing by affected women and men within the political ecological context of infrastructure development need to be better understood for a more transformative approach to policies in relation to coastal development and conservation.

References

- ADB [Asian Development Bank] (2016) *Sri Lanka: Secondary Towns and Rural Community-based Water Supply and Sanitation Project: Completion Report*. Manila: ADB.
- ADB [Asian Development Bank] (2012) *Sri Lanka North East Coastal Community Development Project: Completion Report*. Manila: ADB.
- Allison, E.H., Kurien, J., Ota, Y. (Lead authors), Adhuri, D.S., Bavinck, J.M., Cisneros-Montemayor, A., Fabinyi, M., Jentoft, S., Lau, S., Mallory, T.G., Olukoju, A., van Putten, I., Stacey, N., Voyer, M. and Weeratunge, N. (Contributing authors) (2020) *The human relationship with our ocean planet*. Blue Paper Series. Washington, D.C.: World Resources Institute.
<https://www.oceanpanel.org/blue-papers/HumanRelationshipwithOurOceanPlanet>
- Armitage, D., Bene, C., Charles, A.T., Johnson, D. and Allison, E.H. (2012) The interplay of well-being and resilience in applying a social-ecological perspective. *Ecology and Society*, 17:4: 15.
- Bastian, S. (2013) *The Political Economy of Post-War Sri Lanka*. ICES Research Paper 7. Colombo: ICES.
<http://ices.lk/wp-content/uploads/2013/10/The-Political-Economy-PDF.pdf>
- Bavinck, M., Pelligrini, L. and E. Mostert (2014) 'Introduction', in M. Bavinck, L. Pelligrini and E. Mostert (eds), *Conflicts over natural resources in the Global South: Conceptual approaches*, pp. 1–11. London: Francis and Taylor Group.
- Bennett, N.J. (2019) In political seas: Engaging with political ecology in the ocean and coastal environment. *Coastal Management*, 1–21. DOI: 10.1080/08920753.2019.1540905
- Berg, B.L. (2009) *Qualitative research methods for the social sciences. Seventh edition*. Boston: Allyn & Bacon.
- Buthpitiya, V. (2013) *Reconciling rights, responsibilities and disjunctures: An assessment of Sri Lanka's post-war development drive*. Colombo: Law and Society Trust.

- Coulthard, S., Johnson, D. and McGregor, A. (2011) Poverty, sustainability and human wellbeing: a social wellbeing approach to the global fisheries crisis. *Global Environmental Change*, 21:2: 453-463.
- DCS [Department of Census and Statistics] (2015) *Census of Population and Housing – 2012 Sri Lanka: Population Tables*. Colombo: DCS.
<http://www.statistics.gov.lk/PopHouSat/CPH2011/index.php?fileName=P2&gp=Activities&tpl=3>
- DCS [Department of Census and Statistics] (2017) *Poverty Indicators. Household Income and Expenditure Survey – 2016*. Colombo: DCS.
- DCS [Department of Census and Statistics] (2018) *Household Income and Expenditure Survey 2016. HIES Final Report 2016*. Colombo: DCS.
- DCS [Department of Census and Statistics] (2020a) *Sri Lanka Labour Force Survey: Annual Report - 2019*. Colombo: DCS.
- DCS [Department of Census and Statistics] (2020b) *Sri Lanka Labour Force Survey: Annual Bulletin - 2020*. Colombo: DCS.
- EFL [Environmental Foundation Limited] (2016) Halting the coal power plant in Sampur
<https://efl.lk/portfolio/halting-the-coal-power-plant-in-sampur/>
- Fabinyi, M., Foale, S. and M. MacIntyre (2015) Managing inequality or managing stocks? An ethnographic perspective on the governance of small-scale fisheries. *Fish and Fisheries*, 16: 471– 485.
- FHB [Family Health Bureau, Ministry of Health] (2016) National Maternal Mortality Reviews -2016. Presentation. Colombo: FHB.
- Fonseka, B. and Raheem, M. (2008) *A brief profile of the Trincomalee High Security Zone and other land issues in Trincomalee district*. Colombo: Centre for Policy Alternatives.
- Frerks, G., Dietz, T. and P. Van der Zaag (2014) 'Conflict and cooperation in natural resources: Justifying the CoCooN Programme', in M. Bavinck, L. Pelligrini and E. Mostert (eds), *Conflicts over natural resources in the Global South: Conceptual approaches*, pp. 1–11. London: Francis and Taylor Group.

- Glaser, B.G. (Ed.) (1993) *Examples of grounded theory: A reader*. Mill Valley, USA: Sociology Press.
- Glaser, B.G. (2001) Doing grounded theory. *Grounded Theory Review*, 2:1-18.
- Godamune, N. (2019) Understanding women's livelihood outcomes and economic empowerment in the Eastern Province of Sri Lanka. Colombo: International Centre for Ethnic Studies.
- Invest.lk News (2018) <https://www.invest.lk/development-trinco-industrial-zone-phase-iii-kick-off/>
- Johnson, D., Acott, T., Stacey, N. and Urquhart, J. (Eds) (2018) *Social wellbeing and the values of small-scale fisheries*. Cham: Springer International Publishing.
- Kabeer, N. (1999a) 'From feminist insights to an analytical framework: An institutional perspective on gender inequality', in N. Kabeer and R. Subramanian (eds), *Institutions, relations and outcomes*, p. 3-48. New Delhi: Kali.
- Kabeer, N. (1999b) Resources, agency, achievements: reflections of the measurement of women's empowerment. *World Development*, 30: 435-64.
- Keerawella, G. (2013) *Post-War Sri Lanka: Is Peace a Hostage of the Military Victory? Dilemmas of Reconciliation, Ethnic Cohesion and Peace-Building*. ICES Research Paper 8. Colombo: ICES.
<http://ices.lk/wp-content/uploads/2013/11/Gamini-Keerawella-book.pdf>
- Kelegama, S. (2011) Socio-economic challenges of post-conflict reconstruction in Sri Lanka. Presentation. Colombo: Institute for Policy Studies.
- McGregor, A. (2008) *Well-being, poverty and conflict*. Briefing Paper 1/08, ESRC Research Group on Well-being in Developing Countries. Bath: University of Bath.
- Perera, P. (2014) The political economy of post-war economic development in Sri Lanka. *International Journal of Business and Social Research*, 4:12: 43-62.
<http://www.thejournalofbusiness.org/index.php/site>
- SEDRIC [Social-ecological Dynamics in Rapid Economic Development: Infrastructure and Coastal Change in Southeastern Sri Lanka] (2021) Annexe no° 1 au rapport technique de fin du projet. Colombo: Ambassade de France à Sri Lanka et aux Maldives.

- Strauss, A. L. and Corbin, J. (1998) *Basics of qualitative research: Techniques and procedures for developing grounded theory. Second Edition*. London: Sage.
- Vithanagama, R. (2020) *Factors Associated with Female Labour Force Participation in Sri Lanka's Eastern Province*. Colombo: ICES.
<http://ices.lk/wp-content/uploads/2021/01/Factors-Associated-with-Female-Labour-Force-Participation.pdf>
- Weeratunge, N., Bene, C., Siriwardane, R., Charles, A., Johnson, D., Allison, E., Nayak, P. and Badjeck, M-C. (2014) Small-scale fisheries through the wellbeing lens. *Fish and Fisheries*,15:2:255-279.
<http://onlinelibrary.wiley.com/doi/10.1111/faf.12016/abstract>
- White, S.C. 2008. *But what is wellbeing? A framework for analysis in social and development policy and practice*. WeD Working Paper No. 43, Wellbeing in Developing Countries ESRC Research Group. Bath: University of Bath.

Impacts of Infrastructure Development on Gender and Wellbeing in Coastal Communities: A Comparative Analysis of Batticaloa and Trincomalee Districts in Sri Lanka

**Nireka Weeratunge, Viyanga Gunasekera,
Nadine Vanniasinkam**

In the aftermath of Sri Lanka's civil war (1983-2009), the main strategy pursued by the state to drive economic recovery and growth in the war-torn northern and eastern regions of the country was infrastructure development. While this was accompanied by livelihood development programmes, centred on micro-credit and micro-enterprise to address poverty to some extent, the primary thrust in Batticaloa and Trincomalee districts of the Eastern Province remained focused on increasing connectivity and trade with the rest of the island by demining, developing roads, railways, transport, electricity and water supply. The state also supported private sector investment in industrial and tourism development. How did this economic strategy affect local coastal communities and their environment? Based on a literature review and qualitative fieldwork conducted in five coastal communities in Batticaloa and Trincomalee districts in 2021, this study provides insights on local perceptions of the impacts of post-war changes. Using gendered social wellbeing and political ecology approaches, it delves into the material, relational and subjective dimensions of the lives of women and men, their responses to changing livelihood systems, and how these are linked to the sustainability of their natural resource base. The study also outlines policy implications in relation to the appropriateness of infrastructure provided, the need for adequate consultations with local communities, a holistic understanding of wellbeing in development interventions to ensure equitable benefits to all social groups, and better awareness creation on environmental sustainability.



INTERNATIONAL
CENTRE FOR
ETHNIC STUDIES

ISBN: 978-624-5502-29-5



9 786245 502295

Printed by Horizon Printing (Pvt) Ltd.