Integrated Strategic Environmental Assesment of the Northern Province of Sri Lanka (ISEA - North)

LESSONS LEARNT REPORT

Integrated Strategic Environment Assessment for the Northern Province (ISEA-North) Lessons Learnt Report

Contents

List of Tables

List of Figures

List of Acronyms

ADB	Asian Development Bank
AusAID	Australian Agency for International Development
CEA	Central Environmental Assessment
DIA	Disaster Impact Assessment
DMC	Disaster Management Centre
DWLC	Department of Wild Life Conservation
EIA	Environmental Impact Assessment
ESDR	Environment Sustainability and Disaster Resilience
GIS	Geographic Information System
GSMB	Geological Survey and Mines Bureau
IDP	Internally displaced persons
ISEA	Integrated Strategic Environmental Assessment
IUCN	International Union for Conservation of Nature
JICA	Japan International Cooperation Agency
LLRC	Lessons Learnt and Reconcilation Commission
NCP	North Central Province
NEA	National Environmental Act
NWS&DB	National Water Supply and Drainage Board
PTF	Presidential Task Force
SCDP	Strategic Cities Development Project
SDG	Sustainable Development Goals
SEA	Strategic Environmental Assessment
SEO	Strategic Environment Objectives
UDA	Urban Development Authority
UNDP	United Nations Development Programme
UN Environment	United Nations Environment Programme
UNHCR	United Nations High Commissioner for Refugees
WB/IFC	World Bank/International Finance Corporation
WRMP	Western Region Megapolis Planning

Preface

Integration of environmental sustainability and disaster resilience, including climate concerns, is an important and challenging aspect in post-conflict or post-disaster development and reconstruction towards "building back better." Such opportunities also provide Governments and development partners options to adopt systematic multi-sector and multi-stakeholder inclusive approaches based on informed planning tools to ensure the protection of natural, cultural and heritage resources during the reconstruction phase. In parallel, such approaches can be used to incorporate climate and disaster risk considerations more effectively.

This was the post-conflict and post-disaster challenge faced by the Government of Sri Lanka, at the end of a 30-year long protracted armed conflict that devastated the Northern Province of Sri Lanka. Over 330,000 displaced people had to be resettled. The coastal belt of the Northern Province had also been heavily impacted previously by the 2004 Indian Ocean Tsunami.

UN Development Programme and UN Environment joined forces with several Government Ministries/Agencies to develop a framework for the sustainable and resilient reconstruction of the Northern Province. This approach was named the "Integrated Strategic Environment Assessment for the Northern Province of Sri Lanka" (ISEA-North).

The ISEA-North started in the latter part of 2009 was completed in 2012 while the final report was released in 2014. The maps, data and recommendations were made available to agencies from the inception as an when the materials were ready, to help the reconstruction process in the Northern Province.

Five years after the implementation of the ISEA-North in Sri Lanka, UN Environment is implementing a new project with the support of IUCN Sri Lanka to learn from the ISEA process in the country, where it originated.

The aim is to share the ISEA experience within Sri Lanka so that the full use of ISEA-North could be realized. At the same time the project is planning to strengthen national capacities to implement ISEAs in two other countries: Cote d'Ivoire and Nepal.

Funded through the UN Development Account as a two-year south-south cooperation, this initiative, "Enabling sustainable and resilient development planning in post-crisis countries by mainstreaming environment and risk reduction into development planning (2015-2017)", was developed with the objective to share best practices and challenges faced when applying ISEAs among the three countries and in two regions, Africa and Asia.

This report summarises the material collected by IUCN Sri Lanka on the ISEA experience in Sri Lanka in the form of a case study. Initial findings were shared and validated at national and district levels. The material presented needs to be referenced along with the Final ISEA-North Report (https://goo.gl/kJRV5N) and the "Map Compendium " that comprises of a full set of maps related to the ISEA-North process (https://goo.gl/YcwFbq).

Executive Summary

This report discusses the lessons that emerged during the development and implementation of the "Integrated Strategic Environment Assessment for the Northern Province (ISEA-North)", which was developed as a planning tool to mainstream environment sustainability and disaster resilience in the post-conflict development of the Northern Province in Sri Lanka. The active participation of key stakeholder agencies provided the "integration" ability.

The ISEA-North, which started in November 2009 was completed in 2014, to support the "building back better" process by saying "yes" to development, but with adequate environmental "safeguards." The multi-sector and multi-stakeholder approach used in the ISEA-North was considered as a replicable model for post-conflict/disaster recovery programmes by the United Nations. In 2015, the UN Development Account allocated funds to UN Environment and IUCN to document the ISEA-North experience, several years later. In Sri Lanka, the context it is revisiting the ISEA-North implementation experience is to improve future actions and designs of any new efforts.

Among the key findings, it was clear that the joint leadership provided by the Central Environment Authority (CEA) and the Disaster Management Centre (DMC) made it possible to combine environment management and disaster resilience in the Northern development and to access the support from UNDP and UNEP.

The systematic approach was well received in the country during the ISEA-North formulation, and covered three phases: (i) the baseline phase (generating and combining old and new information); (ii) the development phase (compiling proposed development plans,

reviewing potential conflicts between development and conservation, adding disaster potentials including climate change) and; (iii) the assessment phase (agencies together prioritizing land uses, discussing constraints on different options and agreeing on optimal land uses). It is a unique and a challenging approach after a massive disturbance. The "Opportunity Map", one of the key products of ISEA-North is an effective tool for decision making and project approvals.

The ISEA frequently competed with the notion to rebuild fast and resettle the affected. As such, ISEA process continuously engaged decision makers to explain the value and progress. It worked well at the national level including the endorsement by the Presidential Task Force (PTF) for rebuilding North.

ISEA-North information was used extensively at the national level in declaring archaeological sites, national parks, location of resettlements and cities, etc. This success led to the adoption of the ISEA approach to one of the largest developments, namely, the "Western Region Megapolis Planning."

Mainstreaming of ISEA – North findings and recommendation at district and provincial levels was less than expected, partly due to the inability to legalize the ISEA-North recommendations. Targeted advocacy and engagement of senior Government officials and policy makers on ISEA and staff capacity building were two key factors contributed for less adoption of ISEA. Continued training and capacity development may have improved the success of ISEA-North. Nevertheless, even in year 2016, the ISEA-North materials are considered useful by district level officials. They recognize the value of ISEA outputs in the post conflict period to ensure sustainability and resilience of affected populations.

1. Introduction

In May 2009, following the cessation of over 30 years of conflict in Sri Lanka, there was significant need and political pressure to jump-start the reconstruction and development process in the Northern Province of the country and to deliver immediate development benefits to the affected communities. Along with the urgency of reconstruction, including resettlement of displaced populations, it was recognized that reconstruction and new development should not cause negative environmental impacts and jeopardize the long-term sustainability of development in the Northern Province. Moreover, new development offered an opportunity to incorporate nature-based solutions and disaster resilience considerations in planning.

The proposed rapid resettlement and development included investments in infrastructure, roads, railways, tele-communications, among others, as well as restoring public administration and planning systems to stimulate investment and growth.

Figure 1: At the end of 30 years of armed conflict

This rapid development also brought new challenges to natural resource availability, its priority uses and long-term sustainability. For example, the provisioning of sufficient volumes of ground- and surface water for industry and resettlements as well as sourcing of building materials required a high level of attention towards the protection of ecosystem services and nature, culture and heritage upon which livelihoods in this region are based.

This situation also demanded rapid decision-making in the context of post-conflict reconstruction. At the same time, there was a need for a technically sound, multi-sectoral and multi-stakeholder approach to facilitate implementation of the proposed projects without compromising environmental sustainability and resilience. The Integrated Strategic Environment Assessment for the Northern Province (ISEA-North) provided an approach to address these challenges.

1.1. Government Initiative

Immediately after the end of the war in 2009, the Government of Sri Lanka initiated an accelerated development programme to support reconstruction in the Northern Province, which was referred to as the 'Northern Spring' (*'Uthuru Wasanthaya'* in Sinhala and *'Wadakkin Wasantham'* in Tamil). An influential Presidential Task Force (PTF) was appointed to coordinate the reconstruction and development work under the leadership of the Hon. Minister of Economic Development.

Most of the areas were severely land-mined, and the security threat was considered high. Military presence in the province had been prominent. Field work for any data generation required the permission of the Government and needed to be undertaken with extreme care due to land mines. With the exception of the Jaffna District, the Provincial Government Administrative System and social support structure were not functioning well. A decision was taken by the Government to resettle over 330,000 Internally Displaced Persons (IDPs), as soon as possible, partly due to the international pressure to move people out of camps.

Entry to the ISEA-North formulation was based on the Government's 180-day plan to address post-conflict needs. In the plan, the Central Environmental Authority (CEA) proposed a Strategic Environmental Assessment (SEA) for the Northern Province to ensure sustainability of development, while the Disaster Management Centre (DMC) of the Ministry of Disaster Management proposed a Disaster Impact Assessment to be undertaken in the North. Both proposals were integrated in the work of these two agencies conducted in the "Manik Farm", the camp that held over 330,000 IDPs, following the last battle in the North. UN Development Programme (UNDP) played a key

role in supporting the IDP management in the Manik Farm by providing management support to the UN High Commissioner for Refugees (UNHCR) on drainage, sewage and waste management. UNDP was also interested in supporting the resettlement process of IDPs, as its core development mandate.

In this context, the Environment, Energy and Disaster Risk Management Programme of UNDP Sri Lanka agreed to work with the CEA and DMC and highlighted the need to mobilize development and conservation agencies towards a consultative process that was also sensitive to the post-conflict landscape in the Northern Province.

Discussions with the Ministry of Economic Development (then Ministry of Nation Building), Presidential Task Force for the Northern Province and the UN Environment Asia-Pacific Office resulted in the joint UNDP-UN Environmental technical assistance to support the ISEA process in the Northern Province, in collaboration with the Government of Sri Lanka. The CEA, DMC and the Urban Development Authority served as lead Government Agencies in the ISEA process.

1.2. Modifying the SEA Approach

Strategic Environmental Assessments (SEAs) refer to the environmental assessment of plans, programmes and other strategic actions, which help determine where and how individual projects can take place. The SEA is a systematic process of predicting and evaluating the likely environmental effects of a proposed policy, plan or a programme. It seeks to address environmental sustainability and disaster resilience concerns at the earliest stages of development planning, to support sound land-use and investment decision-making, in tandem with economic, social and other considerations.

The SEA employs a range of "analytical and participatory approaches to integrate environmental considerations into policies, plans and programmes and to evaluate the inter-linkages with economic and social considerations"[1]. A good SEA is adapted and tailor-made to the context in which it is applied. SEA processes are often based on available baseline data.

In the case of the Northern Province, the data availability, after a 30-year conflict, was considered inadequate. Moreover, there was intense political pressure to re-start reconstruction and facilitate development dividends to affected communities. A modification to the SEA approach was therefore warranted, which led to the development of an *Integrated* Strategic Environmental Assessment (ISEA) approach, which was tailored to the post-conflict context and reconstruction needs of the Northern Province. The ISEA process involved data integration, data gap filling and stakeholder co-ordination, working to systematically assess different plans and strategies in a specific area.

The purpose of the ISEA for the Northern Province was to bring key stakeholder entities together, consolidate both environmental baseline and development information, and introduce a sound basis for participatory, scientific and informed decision-making on land and natural resource uses. The aim of the ISEA was to ensure that the rebuilding process was sustainable and resilient to disasters and climate risks.

1.3. ISEA in the Post-Conflict Context

In a post-conflict situation, it can be crucial to provide assurance that robust environmental assessments are in place—so that new developments can be facilitated as quickly as possible. Consideration of environmental effects at early stages of development/ reconstruction planning through an ISEA process can help minimize negative environmental impacts from development activities. By assessing the higher-level environmental impacts of multiple development plans/programmes in a given area, the ISEA can also help prioritize when Environmental Impact Assessments (EIAs) for individual projects may be needed, thus increasing the efficiency of the EIA process. It should be noted that the impacts arising from proposed individual projects are also likely to be reduced because they have the benefit of being already directed towards the most sustainable areas in the first place, as a result of the ISEA information.

While EIAs and SEAs protect the environment by ensuring that projects and plans are informed by environmental baseline information and consensual decision-making, ISEAs may be distinguished based on its time-bound element. Typically undertaken in a post-crisis context, the process of preparing the ISEA baseline and proposed development maps itself, over a short period, creates the conditions for multi-stakeholder dialogue and decision-making.
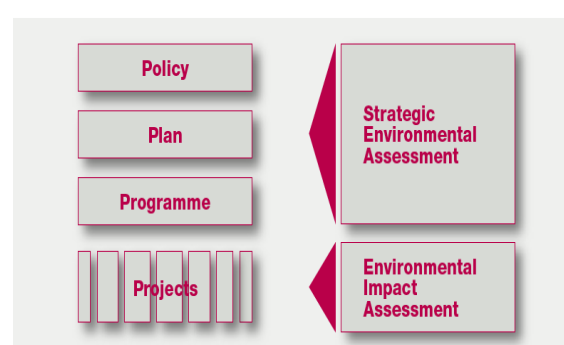
Figure 2: EIA and SEA processes

---

[1] OECD (2006): Applying Strategic Environmental Assessment – Good Practice Guidance for Development Cooperation. 160 pp. Organization for Economic Cooperation and Development, France.

1.4. Legislative Context

The National Environmental Act (NEA) No. 47 of 1980 defines the regulatory framework for environmental conservation and protection in the country, with the Central Environmental Authority (CEA) as the regulatory and enforcement agency. This act was amended in 1988 (Act No. 56) and in 2000 (Act No. 53). Under provisions of Part IV C of the NEA No. 47 of 1980 as stipulated in Gazette (Extra Ordinary) No 722/22 dated June 24, 1993, the Government of Sri Lanka made the Environmental Impact Assessment (EIA) a legal requirement for a range of development projects. In addition, the Gazette notification (the above and the subsequently amended lists) includes a list of line Ministries and Agencies that are designated as Project Approving Agencies. In addition, the Coast Conservation Act of 1981 also specifies an EIA procedure for projects in the coastal zone of the country.

In 2006, a decision was taken by the Cabinet of Ministers to direct all Government Agencies to develop SEAs for all policies, plans and programmes prior to implementation. Thus, the CEA carried out SEAs for the Trincomalee Development Plan and Greater Hambantota Development Plan. In addition, the Sri Lanka Tourism Development Authority had completed two SEAs for Tourism Development in the Deduwa Lake Area and the Kalpitiya Area.

Therefore, by the time the team started the ISEA-North, there had been "readiness" from the Government, with legislation and technical capacity within the country.
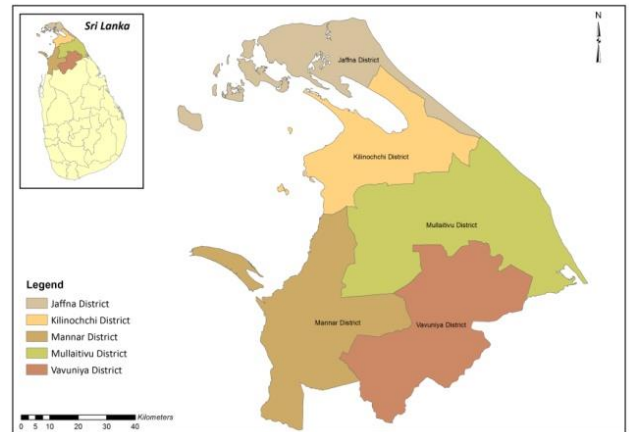
Figure 3: Five districts of Northern Province

1.5. Northern Province in Brief

Comprising about 13% of the total land area of Sri Lanka, the Northern Province (8,884 sq. km.) consists of five administrative districts, namely: Jaffna, Kilinochchi, Mannar, Mullaitivu and Vavuniya. These five districts comprise 33 Divisional Secretariat Divisions, 931 Grama Niladhari (Lowest Govt. Administrative level) and 3,235 villages. The Northern Province landscape is characterized by its high variability in terms of natural resources as well as natural hazard probability.

2. ISEA-North Process

2.1. Initiation

Based on a preliminary literature review, UNDP Sri Lanka's Environment Sustainability and Disaster Resilience (ESDR) team learned UN Environment has experience on post-conflict environmental assessments. A joint collaboration was established between UNDP Sri Lanka and UN Environment to provide technical assistance to the Government of Sri Lanka.

2.2. Initial Fact-Finding Mission

A fact-finding or scoping mission to the Northern Province in November 2009 comprised of UNDP, an expert from UN Environment, and representatives from the CEA and DMC. This trip marked the first overland UN mission to the Northern Province. At that time, buildings were bullet-ridden, and the infrastructure, including roads, were completely damaged. There were multiple military check points, and land mines were marked by yellow coloured signs.

The Presidential Task Force (PTF) for coordinating the Northern Province development gave authorization for this first scoping mission. The Sri Lanka Army assisted the team to travel to the Northern Point of the Peninsula and then south via the Eastern Coast, which was heavily land-mined, but very rich in scenic beauty.

2.3. Findings of the First Visit

The team met with the District Secretaries of Jaffna, Kilinochchi, Mannar, Mullaitivu, and Vavuniya and the key Government District staff were present at the meetings as well. The District Secretary's office of the Mullaitivu

Figure 4: First fact finding mission in November 2009

District was functioning in Vavuniya, as infrastructure in Mullaitivu was badly damaged.

Discussions indicated the need to fill several data gaps, including the need to conduct field studies on the current status of natural resources. Capacity development needs of District Government offices (including the District planning units) were also identified.

As most of the Northern Province population, at the time of the first visit, lived in the Manik Farm IDP camp, it was not possible to speak with community members during the mission. In addition, some of the Government sector agencies were not fully present in the districts. For example, the Wildlife Department functioned from an office in Vavuniya.

The fact-finding tour enabled the team to assess the current situation before post-conflict resettlement and development process was initiated. All five districts led by District Secretariats endorsed the need to carry out an information-based planned management approach for the re-development and reconstruction of the Northern Province.

Findings of the mission were summarised by UNDP and reported to the Government Agencies in Colombo, including the PTF and UN agencies. The Government and UN system fully endorsed the rationale of the ISEA process.

2.4. ISEA development

Relevant key sector agencies to participate in the assessment were identified, at the outset of the initiative. Government Agencies were broadly categorized into three main groups:

(i) Conservation agencies
(ii) Investment and development agencies, and
(iii) Policy-level institutions

The first planning meeting was held at the Construction and Training Institute in Battaramulla in February, 2010. A number of key decisions were taken, which included the following:

1. Carry-out several studies to fill data gaps;
2. Use the GIS platform of the Urban Development Authority (UDA) to compile the data.

The multi-stakeholder team developed a three-stage process to carry out the ISEA-North:

(a) Baseline phase
(b) Development phase, and
(c) Assessment phase

Baseline and Field Information *Status of natural resource base*	Development and Investment Group *Status of natural resource base*
01. Archaeology Department	01. Airport and Aviation Services Limited
02. Central Environmental Authority	02. Board of Investment
03. Department of Forest	03. Ceylon Electricity Board
04. Department of Wildlife Conservation	04. Coast Conservation Department
05. Disaster Management Centre	05. Department of Agrarian Services
06. Geological Survey and Mines Bureau	06. Department of Irrigation
07. National Aquatic Resources Research and Development Agency	07. Department of Agriculture
08. Urban Development Authority	08. Mahaweli Authority
09. Water Resource Board	09. Ministry of Economic Development
	10. National Planning department
	11. Department of Fisheries
	12. Marine Pollution Prevention Authority
	13. Ministry of Industry and Commerce
	14. National Water Supply and Drainage Board
	15. Road Development Authority
	16. Sri Lanka Tourism Development Authority
	17. Telecommunication Regulation Commission
	18. Tourism development Authority

Assessment Group
Analysis of resource optimization to meet development needs

Figure 5: ISEA-North agency structure

2.5. Baseline Phase

Primary and secondary baseline data were collected, compiled and translated into a Geographic Information System (GIS) managed by the UDA. Environmental resource mapping was initiated, and available information on the natural resource base in the Northern Province was transferred to the UDA.

A stakeholder consultation process identified data gaps, which were addressed through field surveys and on-site studies involving key Government technical agencies with financial assistance through UNDP. Co-operation amongst Government Agencies in sharing data was remarkable and completely different from the standard practice. Such a change in institutional behaviour is attributed to the multi-stakeholder process established by the ISEA.

Baseline information included:

- Extraction capacity of ground water and availability of surface water (Water Resources Board in association with the National Water Supply and Drainage Board, Irrigation Department and Department of Agrarian Development);
- Identification of sensitive forests, wildlife and cultural areas and the present condition of the resources (Forest Department, Department Wildlife Conservation, and Archaeology Department);
- Identification of sites to provide sand and building materials (Geological Survey and Mines Bureau);
- Optimum use of marine and coastal resources (National Aquatic Resources Research and Development Agency);
- Management of solid and liquid waste (Central Environment Authority and Ministry of Local Government).

The process of data identification, compilation and sharing provided the needed information to undertake baseline mapping, but also strengthened data availability and capacity of Government Agencies for data collection, processing and reporting. Hence, this was an added value to the ISEA process.
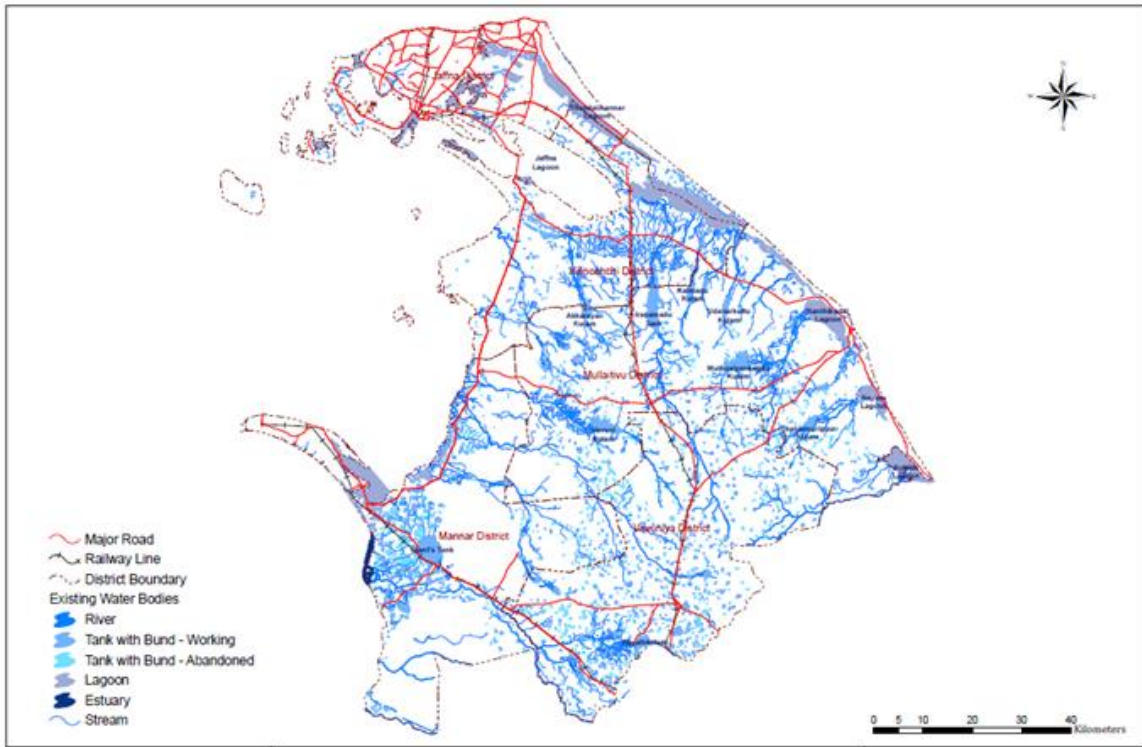
Figure 6 : Water bodies
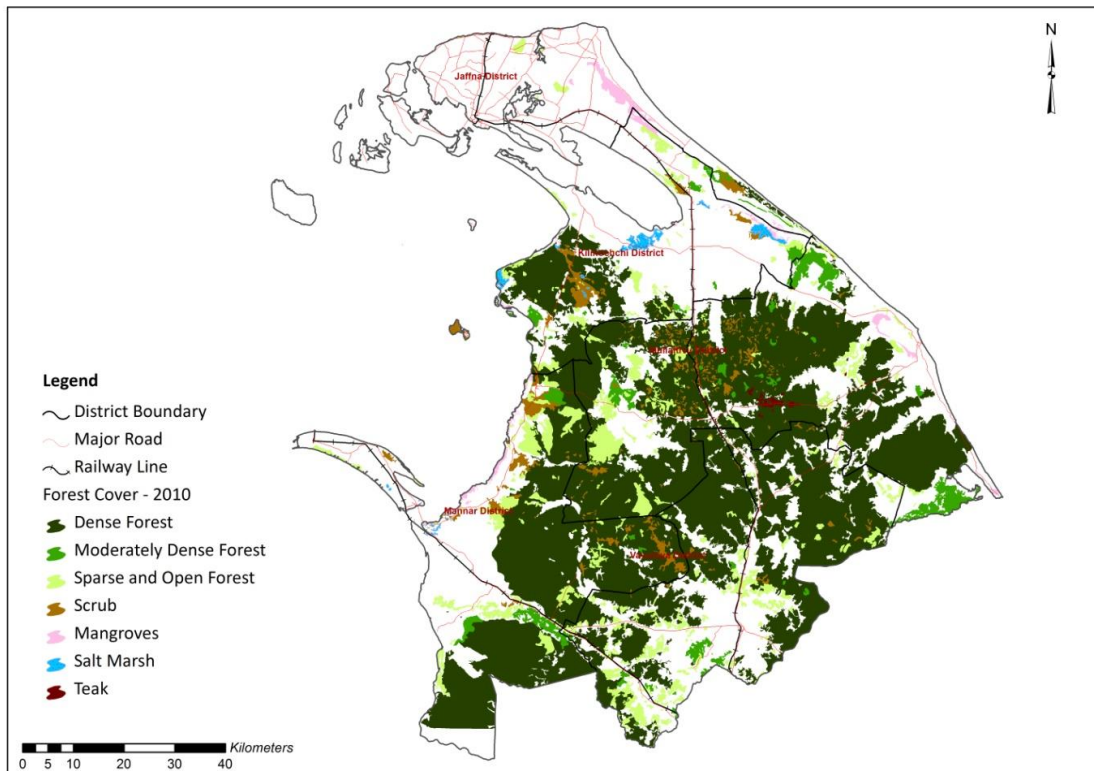
Figure 7: Forest cover
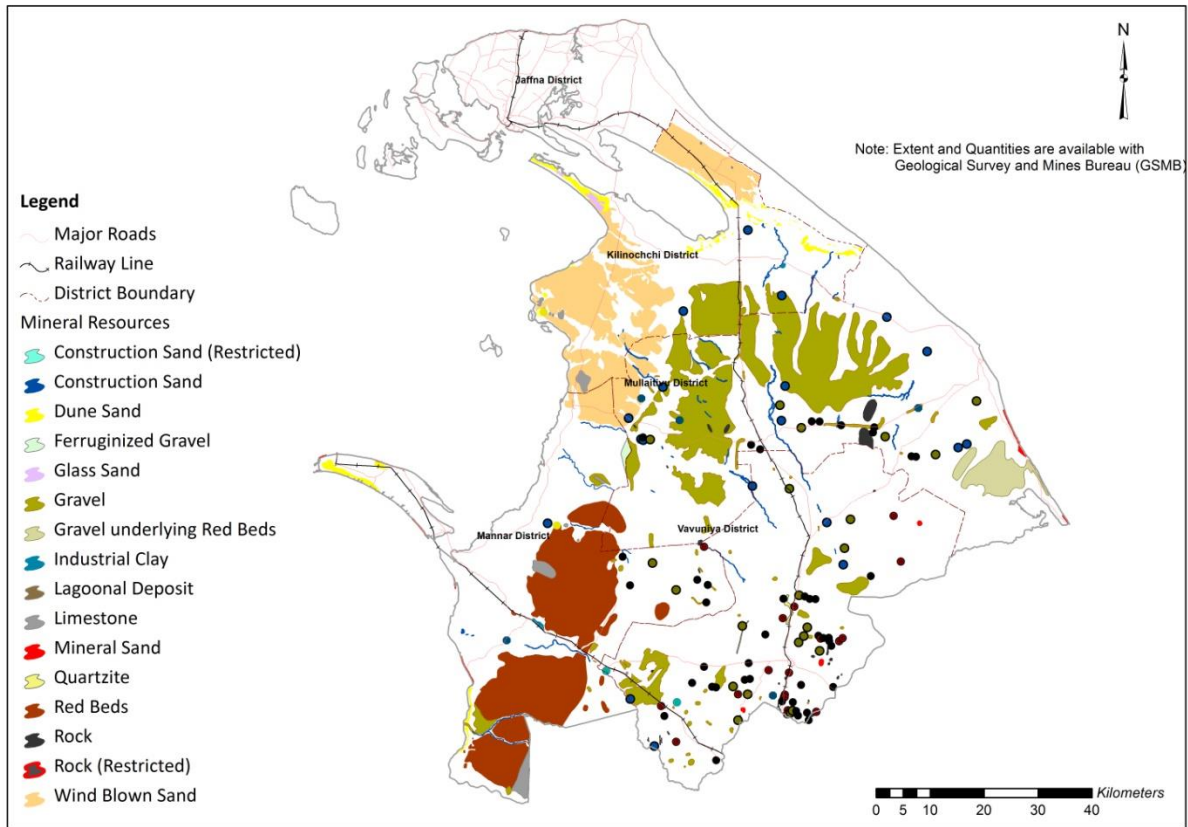
Figure 8: Minerals
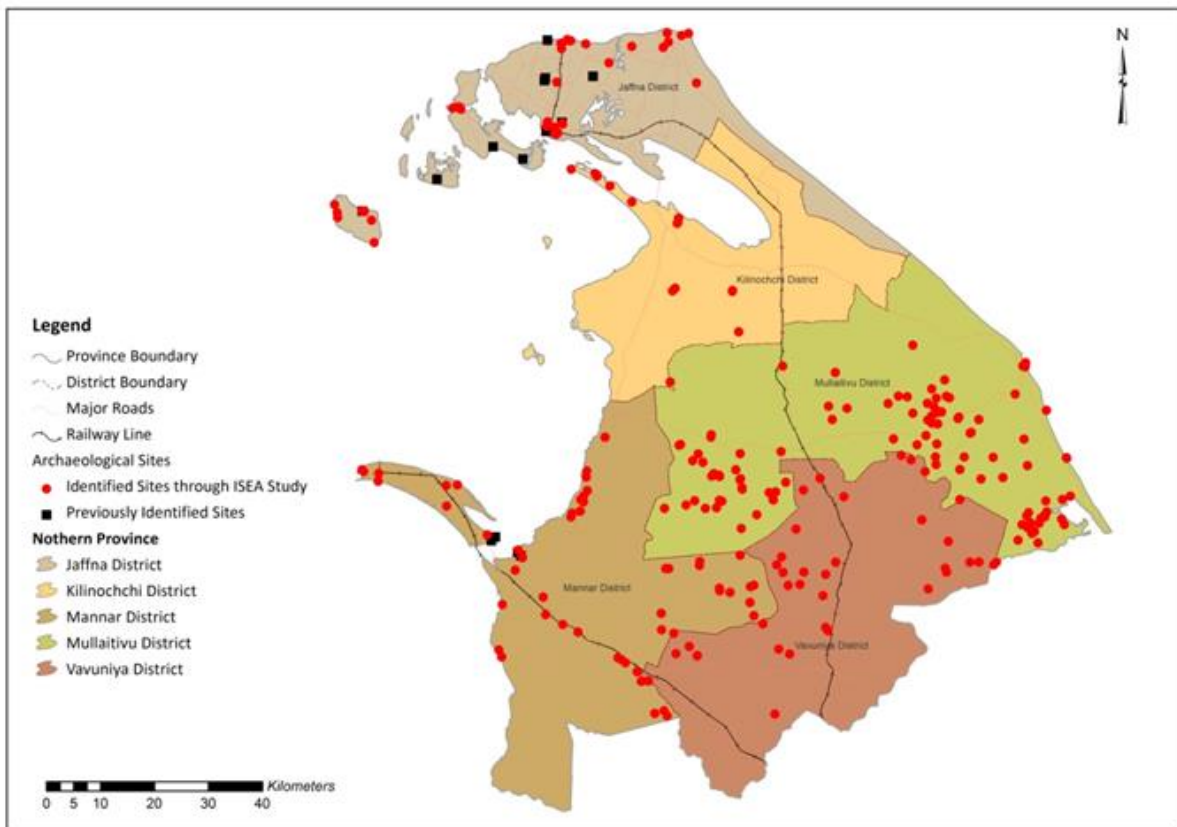
Figure 9: Archaeological sites

New information combined with past data, which were already compiled in the UDA database, were used to generate the baseline maps. These baseline maps then provided the basis for screening the proposed development projects.

2.6. Development Phase

Figure 10: Periodic consultations at District Level Jaffna, 2010

The next step of the ISEA process was to invite the Development Agencies to present their proposed plans, programmes and projects in the Northern Province. These proposed plans, programmes, projects were then mapped by the UDA GIS team.

To facilitate discussions between the Development and Conservation Agencies, the UDA GIS team prepared several maps overlaying the proposed developments on the baseline maps (e.g. maps of natural resources, past resettlement areas, disaster potential, etc.). A comprehensive presentation of maps illustrating landscape conditions, resources, development projects, disaster potential, etc. was developed by the UDA.

A consultative process was then initiated in Colombo to examine the baseline and development/investment maps. Consultations between Government Agencies at the district level highlighted several conflicts between the environmental baseline information and proposed development and investments, but the process also confirmed that a range of proposed development activities can move ahead.

Consultations were conducted at the district level to validate discussion outcomes at the national level. Representatives from key Ministries travelled to the five districts of the Northern Province for a series of consultation meetings. The district-level consultations obtained regional level inputs to land-use prioritization and validate some of the recommendations. The five District Secretariats and sector agencies in the Northern Province were consulted to receive their inputs on the availability and status of natural resources, proposed developments and foreseeable challenges.

During these consultation visits to the districts, the ISEA project team met with community groups at different locations and obtained their feedback. By the time, the district level consultations were held, security situation in the Northern Province had improved significantly, with less debris and military check points along roads. The Mullaitivu District Secretariat, for example, was fully functional.
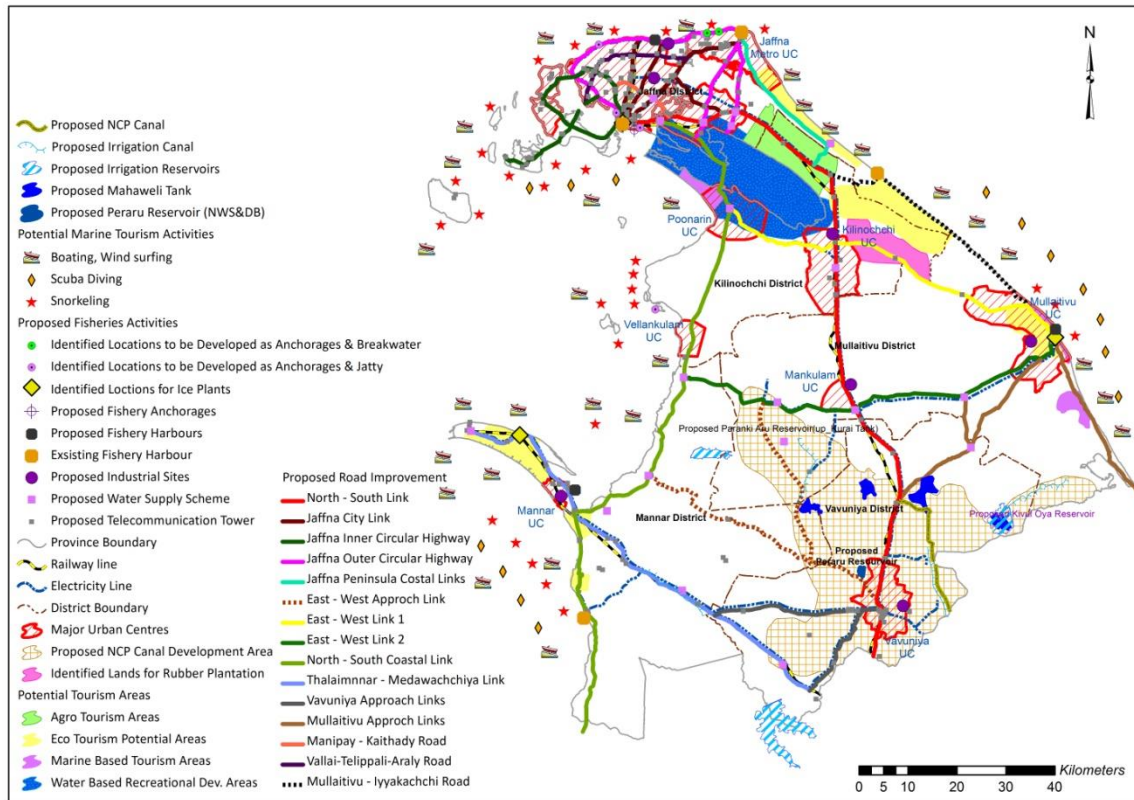
Figure 11: Proposed development initiatives

The visit to the District offices by National Government Ministries was in fact the first time they had visited the Northern Province. The visit allowed Ministry/Agency representatives to interact and freely exchange views on complicated (often contested) land-use priorities. They discussed sensitive issues related to urban development, wildlife protection, the provision of gravel, sand and water for resettlements, and infrastructure development.

The conducive environment during this field trip, which lasted over a week, marked one of the most productive inputs to the ISEA-North process. For example, the maps developed by the project and others in the Map Compendium were results of these intensive stakeholder discussions. Further, these discussions enabled especially National Government Agencies to understand the practical issues and current

situation in the Northern Province and to reflect on the comments/inputs provided by District and Provincial Government staff and communities.

2.7. Assessment Phase

The Assessment Phase commenced during district-level consultations, which were then taken forward by the Government Agencies once they were back in Colombo. Discussions moved towards identification of potential development scenarios for the Northern Province, and mitigation measures to address potential environment and natural resource conflicts with proposed development and investments. The analysis focused on providing a framework within which long-term development of the Province could be undertaken.

The Assessment Phase involved prioritization of the environmental baseline maps by the respective Government Agencies. For example, the Forest Department prioritized the type of forests, which required conservation and those that could be used for development. The criteria for selecting the most important forest areas to be conserved were developed in consultation with key Government Sector Agencies. For example, the Geological and Mines Bureau prioritized which mining areas could be used for the sourcing of building materials (i.e. sand, gravel and minerals).

The available data/information (both ecological and socio-economic) were evaluated using the criteria developed to classify the targeted land-use categories. These categories were: (i) very high priority, (ii) high priority, (iii) moderate priority and (iv) low priority.

For example, in the case of forest resources, the high priority areas included the following areas:

- Dense natural forest;
- Forest reserves (35 reserves gazetted under Forest Ordinance);
- Proposed reserves;
- Forest areas having high biodiversity;
- Mangroves;
- Water catchments of reservoirs, tanks, rivers and streams;
- Riverine forests;
- Roosting and feeding grounds of migratory birds/inhabitant birds;
- Wildlife habitats/Proposed National Parks and Sanctuaries;
- Forest areas, which have archaeological sites.
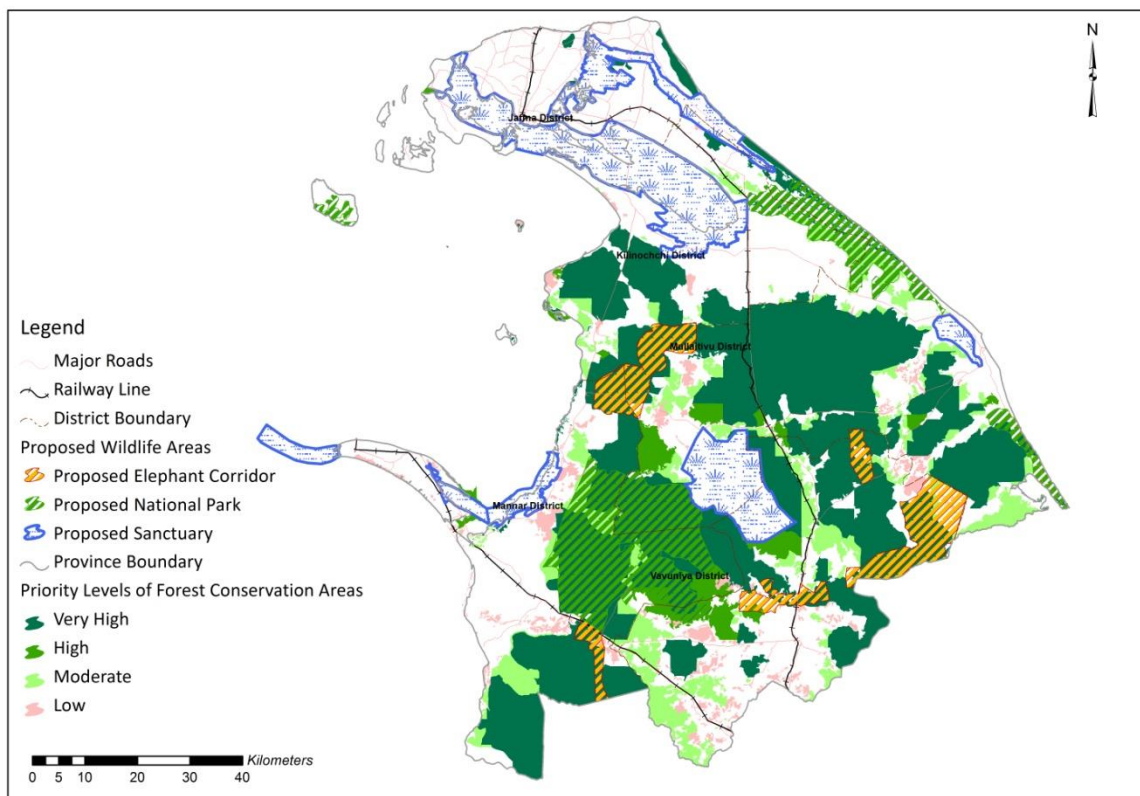
Figure 12: Proposed combined forest and wildlife conservation areas

Figure 12 is a result of Government Agency collaborations, which prioritized forest areas; enhancements to the wildlife corridors were proposed and areas to be conserved were clearly identified, while releasing some of the forest lands for development (i.e. low and moderately prioritized forest lands).

In the case of mineral deposits, the mapping process clearly indicated the potential conflicts with the environment if mining activities continued without a proper strategy. Mineable quantities of minerals identified in all investigated locations were assessed. In each of these identified locations, mineable depths, widths, and lengths of mineral/rock commodities were identified/estimated based on the field relations of each identified mineral/rock body. The mineable quantities of mineral/rock commodities at each location were indicated in the final report of the Geological Survey and Mines Bureau (GSMB). The two-phased plan for extraction of mineral deposits are illustrated in Figure 13 providing

minimum damage to ecosystems, while supporting proposed development actions in the country.

The prioritization process required significant levels of trust and understanding amongst the Government Agencies and the ability to work collaboratively. The ISEA-North process, which emphasized an inclusive and consultative approach contributed immensely towards a more effective and expedient decision-making process. Special attention was given to minimize the fragmentation of forest/wildlife corridors, which was important to address human- elephant conflicts. The active participation of the two main stakeholder agencies in conservation, namely the Forest Department and Wildlife Department, helped to develop an effective strategy which prioritized the conservation areas (especially the forests) so that development in the Northern Province could move ahead while minimizing the potential environmental damage.
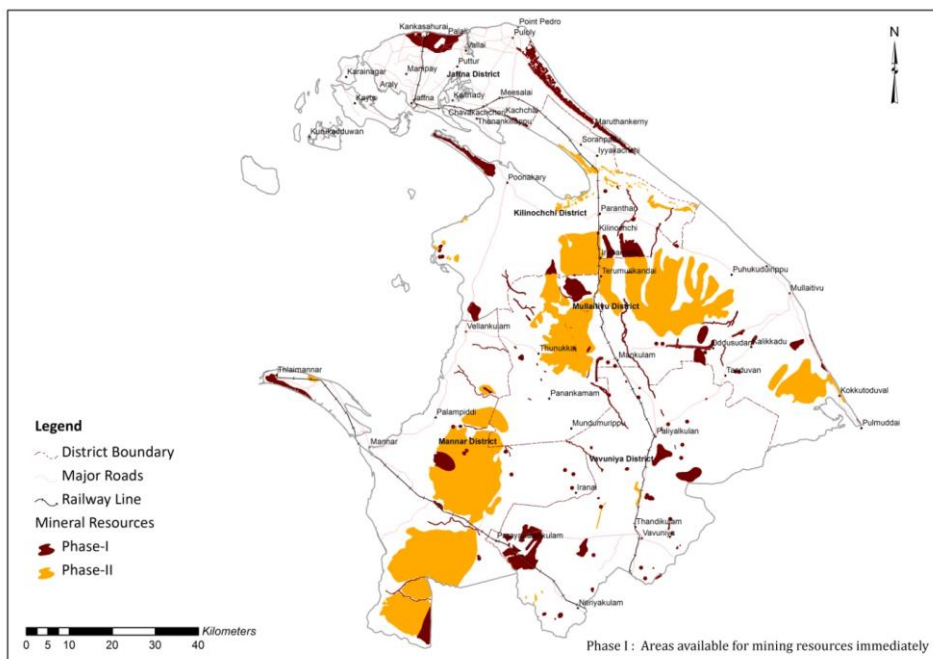
Figure 13: Prioritized mineral extraction

A number of decisions were taken at these early stages of development planning as a result of the ISEA-North process. For example, acknowledging the conflicts between water availability, wildlife and the proposed urban development for Mankulam City (to accommodate resettlement), the UDA agreed to reduce the size of Mankulam City and remove one of the proposed roads, which had the potential to disturb an important elephant corridor (discussed further in Section 4).

Proposed projects and the potential impacts of the natural disasters (floods, climate change induced sea level rise and cyclones etc.) were factored in to the discussions as well.
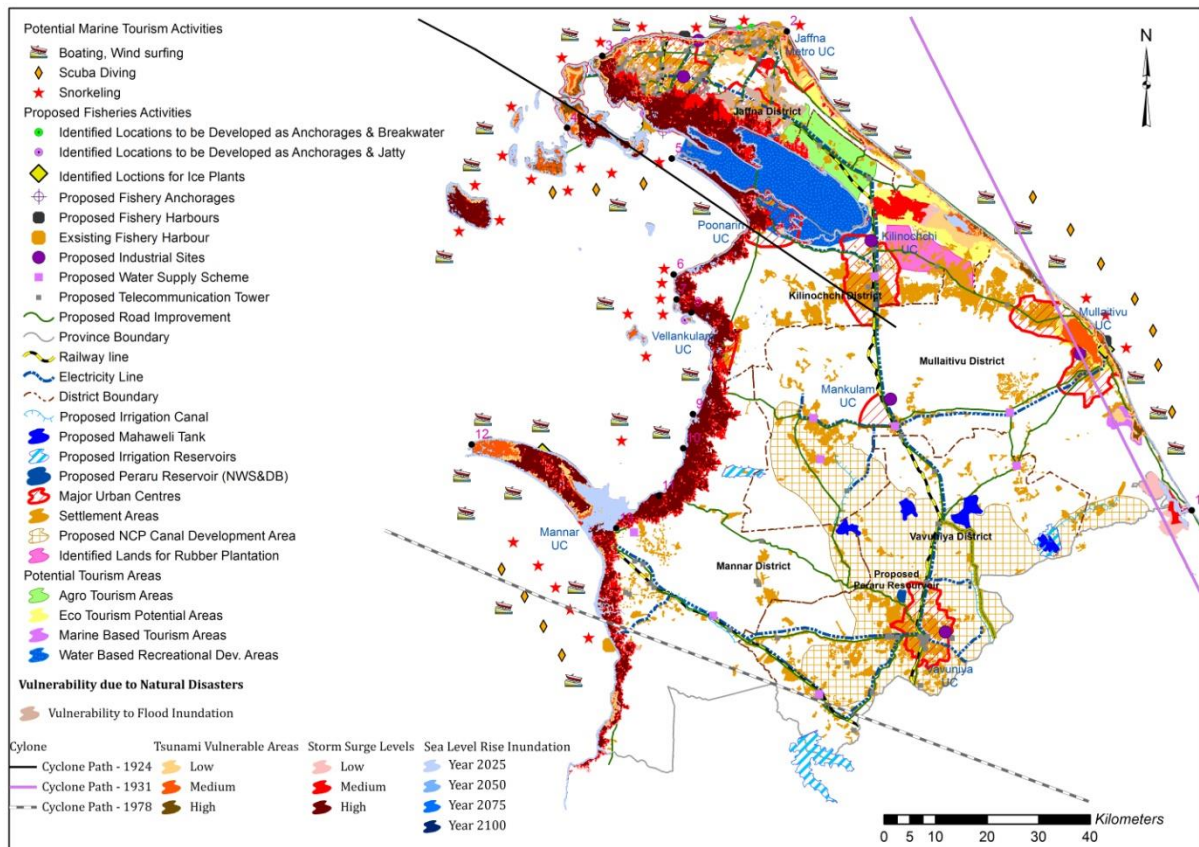
Figure 14: Disaster potentials including climate change on development projects

3. Opportunity Map

The exciting and final step of the Assessment Phase was the development of the "Opportunity Map." The map is a two-color map that indicates the potential areas for development, after considering ecological sensitivities. To develop the Opportunity Map, the team overlaid maps with the identified high value areas for wildlife, forests, mineral sites, surface water bodies and archaeological sites, together with proposed development projects. The remaining areas where there were no or minimal conflicts between environmental sensitivities and proposed developments, were designated under the Opportunity Map. These were essential areas for potential development, which had reduced or no environmental concerns.

As such, the Opportunity Map (Figure 15) is the summary and synthesis of all of baseline and proposed development information and mapping outputs. It was developed to give an easily understood and a handy reference for policymakers and investors. The brown areas in Figure 15 are the areas to direct development/investment initiatives as those areas have the minimum environmental sensitivities and constraints including:

1. Very high prioritized wildlife areas;
2. Very high prioritized forest areas;
3. All mineral sites;
4. All surface water bodies;
5. All archaeological sites.

As the "Opportunity Map" identified areas for development, based on more environmentally-sustainable and risk-informed decision-making, the map will help in Environment approvals such as Environmental Impact Assessments (EIAs).
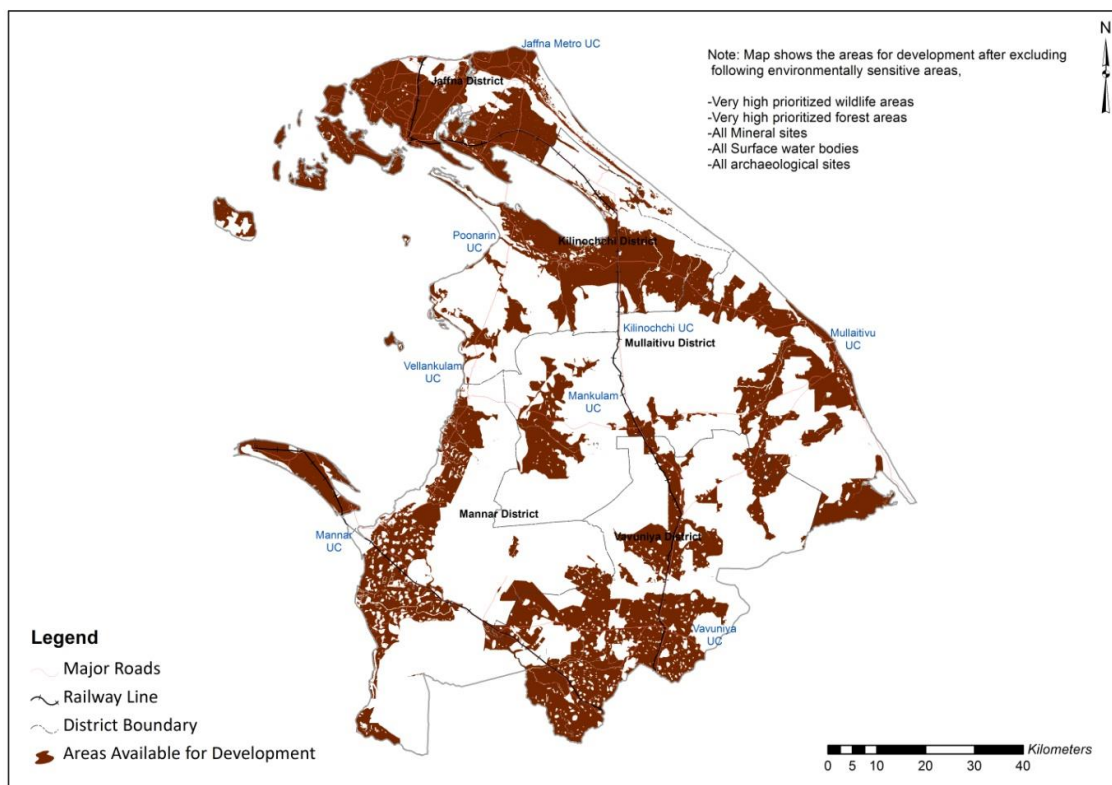
Figure 15: Opportunity Map of areas with Minimum Environment Concerns

Table 1: Key ISEA related statistics in the Northern Province Districts

	Jaffna	Kilinochchi	Mullaitivu	Mannar	Vavuniya
Total Area (sq. km.)	1,025	1,237	2,617	2,002	1,967
Percentage Area of the Province	11.58	14.98	29.58	22.63	22.33
Surface Water (sq. km)	19.67	44	144.03	132.79	130.66
Population in 2011 ('000)	583	112	90	99	171
Urban Area (sq. km.)	63.2	133.35	829.96	9.94	22.2
Agriculture Land (sq. km)	36.29	61.61	57.57	33.33	78.00
Forest Area (sq. km)	179.91	456.08	1781.15	1336.53	1278.83
Wildlife Area (sq. km)	60.16	50.30	101.90	221.63	263.77
Very High and High Forests and Wildlife (sq. km)	218	400	1,650	1,055	897
Opportunity Area w/o Constraints (sq. km)	762.4	568.44	608.41	684.93	912.01
Percent Opportunity Area in the Districts	74.4%	46%	23%	34%	46%
Forest and Wildlife Conservation Area	218	400	1,650	1,055	897
Percent Green Area (%) without Water	21.27	32.34	63.05	52.70	45.60
Percent Water (%)	1.92	3.56	5.50	6.63	6.64
Green and Blue Conserved (%)	23.19	35.89	68.55	59.33	52.25
Percentage Area Developable with Management (%)	2.43	18.15	8.20	6.46	1.39

The percent of "opportunity areas" between districts varied: Jaffna (74%), Kilinochchi and Vavuniya (approximately 46% each), Mannar (34%) and Mullaitivu (23%), indicating different levels of intensity for potential development.

The areas identified as sensitive also could be used for development with appropriate safeguards. For example, there were several conservation areas in Mannar and Mullaitivu Districts favourable for co-management of natural resources, green development and ecotourism type activities.

Developments in sensitive areas require strong environmental management (or further environmental impact assessments) in order to allow development investments to take place. This also present with an opportunity to establish improved natural resource management and promote green development. In these areas, carefully designed mitigation measures based on Environment Impact Assessments (EIAs) were recommended.

3.1. Development Scenarios

ISEA process (i.e. the proposed development and conservation information) developed three management/development scenarios for land use management. They are a) Business-as-usual; b) Conservation concerns incorporated in development; and c) Conservation and mitigation practices adopted in development.

The first scenario was "business-as-usual", which assumed that existing settlements would be populated without much conservation interventions.

The second scenario was developed giving priority to environmental conservation areas over proposed development. The proposed conservation areas were identified based on the environmental sensitivities established during the baseline mapping phase.

The third scenario involved planned development with environment management and mitigation measures in place. Thus, the

ISEA-North highlighted those areas that required more attention based on several key sectors.

For each development scenario, a common set of Strategic Environmental Indicators (SEI) were developed to represent the key sectors, identified as important by stakeholder agencies. Key sectors included Surface Water (quality and quantity), Marine, Forests, Biodiversity (Terrestrial and Marine), Cultural aspects, Geology, Agriculture and Disaster.

After identifying the key SEIs, the type of potential environmental issues for each proposed development sector were ranked according to four categories and colour coded.

1. Intervention is likely to improve the environment as noted by the indicator (No Colour);

2. The action may conflict with status of Indictors (SEIs) and unlikely to be mitigated, therefore needing special attention (Red);

3. Potential conflict with status of SEIs and likely to be mitigated with management (Yellow);

4. No likely interaction with status of SEIs (Green);

This analysis helped to better understand the type of proposed activities (by district) that had potential issues or needed mitigation actions.

These three levels of environmental management were discussed among stakeholder agencies during the ISEA-North related agency training conducted by Dr. Connor, UN Environment Consultant. The training discussed development scenarios in detail and analysed the potential impacts of the development and resettlement process. The potential environmental impacts, including the disaster potentials were evaluated against specific strategic environmental indicators, per District. The ISEA report further analyzed the SEIs and sector impacts.

Tables 2 to 4 provides a quick analysis on environmental impacts of different project ideas under different management including business as usual and level of impacts under conservation management. As such, the Table 4 indicates that in most locations the development is possible with adequate environmental management and in a number of cases the management is not enough to mitigate the adverse effects, therefore the proposal needs to be significantly modified or abandoned.

Table 2: Likely effects of Business as Usual Scenario on the SEIs

Legend:
- **Green** = Likely to **Improve** status of SEIs
- **Red** = Probable **Conflict** with status of SEIs - unlikely to be mitigated, therefore needing special attention
- **Orange** = Potential **Conflict** with status of SEIs - likely to be mitigated
- **Light Green** = **No Likely** interaction with status of SEIs

SCENARIO 1: BUSINESS AS USUAL — Likely Effects on Strategic Environmental Indicators

Category	Item	Water Supply	Water Quality	Marine Water	Forestry	Terrestrial Biodiversity	Marine Biodiversity	Cultural Heritage	Mineral Assets	Soil & Agriculture	Disaster Prone
FEATURES	Urban Expansion [Jaffna]	Red	Orange	Orange	Green	Green	Orange	Red	Orange	Red	Orange
	Rural Housing	Orange	Red	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
	Agricultural Intensification	Red	Red	Orange	Orange	Red	Orange	Orange	Orange	Orange	Orange
	Industrial and Commercial Intensification	Red	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
	Dispersed Infrastructure	Orange	Orange	Orange	Red	Red	Orange	Orange	Red	Orange	Orange
	Un-coordinated Mineral Extraction	Red	Red	Red	Red	Red	Red	Red	Orange	Red	Red
LOCATIONS	Jaffna	Red	Orange	Green	Green	Green	Green	Orange	Orange	Orange	Orange
	Kilinochchi	Orange	Orange	Red	Orange	Orange	Orange	Red	Green	Green	Green
	Mannar	Red	Red	Orange	Green	Green	Orange	Orange	Green	Green	Green
	Vavuniya	Green	Orange	Green	Green	Orange	Orange	Orange	Orange	Green	Green
	Mullaitivu	Green	Green	Orange	Orange	Red	Red	Orange	Orange	Green	Red
RESOURCE REQUIREMENTS	Land	Orange	Orange	Orange	Red	Red	Orange	Red	Red	Orange	Red
	Water	Red	Red	Orange	Red	Red	Orange	Orange	Red	Orange	Orange
	Minerals	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
LIKELY ACTIVITIES	Dispersed Agriculture	Green	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
	Sea Fisheries	Orange	Orange	Orange	Orange	Orange	Red	Orange	Orange	Orange	Green
	Rural Settlement	Orange	Orange	Orange	Red	Red	Orange	Orange	Orange	Red	Red
	Urban Expansion	Red	Red	Green	Orange	Orange	Orange	Orange	Green	Green	Orange
	Large-scale Coastal Tourism Developments	Red	Red	Red	Orange	Orange	Orange	Orange	Orange	Red	Red
	Large-scale Commercial Agriculture	Red	Orange	Orange	Red	Red	Orange	Orange	Orange	Red	Orange
	Large-scale Commerce and Industry	Red	Red	Orange	Orange	Orange	Orange	Orange	Red	Orange	Orange

Table 3: Likely effect of Conservation Scenario

SCENARIO 2: CONSERVATION (as envisaged by conservation agencies)		Likely Effects on Strategic Environmental Indicators									
		Water Supply	Water Quality	Marine Water	Forestry	Terrestrial Biodiversity	Marine Biodiversity	Cultural Heritage	Mineral Assets	Soil & Agriculture	Disaster Prone
FEATURES	Dispersed Rural Housing	Green	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Green	Orange
	Agricultural re-settlement	Green	Orange	Orange	Green	Orange	Orange	Orange	Orange	Orange	Orange
	Concentrated Infrastructure	Green	Green	Green	Green	Green	Green	Green	Orange	Orange	Orange
	Controlled Extraction	Orange	Green	Green	Green	Green	Green	Green	Green	Green	Green
LOCATIONS	Jaffna	Red	Orange	Orange	Green	Green	Green	Green	Orange	Green	Orange
	Kilinochchi	Orange	Orange	Red	Orange	Orange	Red	Green	Green	Green	Green
	Mannar	Red	Red	Red	Green	Green	Red	Green	Orange	Green	Green
	Vavuniya	Green	Green	Green	Green	Green	Orange	Green	Green	Green	Green
	Mullaitivu										
RESOURCE REQUIREMENTS	Land	Green	Green	Green	Green	Green	Green	Orange	Orange	Green	Green
	Water	Green	Green	Green	Green	Green	Green	Orange	Orange	Green	Green
	Minerals										
LIKELY ACTIVITIES	Dispersed Agriculture	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
	Sea Fisheries	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
	Rural Settlement	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
	Urban Expansion	Red	Red	Orange	Red	Red	Orange	Orange	Orange	Red	Orange

Likely to **Improve** status of SEIs	Probable **Conflict** with status of SEIs - unlikely to be mitigated, therefore needing special	Potential **Conflict** with status of SEIs - likely to be mitigated	**No Likely** interaction with status of SEIs

Table 4: Likely effect of Development Scenario with Management

Scenario 3 – PLANNED DEVELOPMENT WITH PRECAUTIONS AS ENVISIONED BY GOVERNMENT AGENCIES (based on the information collected)		Likely Effects on Strategic Environmental Indicators									
		Water Supply	Water Quality	Marine Water	Forestry	Terrestrial Biodiversity	Marine Biodiversity	Cultural Heritage	Mineral Assets	Soil & Agriculture	Disaster Prone
MEGA CITIES											
Jaffna Metro Urban City	Note: this assessment assumed that these settlements will be developed in accordance with subsidiary plans that are subject to SEA and EIA (as per national regulations) and serviced by sustainable water supplies and that effluent and wastes will be properly treated and disposed	orange	green	green	green	green	green	green	green	green	yellow
Poonaryn Urban City		green	green	green	green	green	green	green	green	green	green
Vellankulam Urban City		green	green	green	green	green	green	green	green	green	green
Mannar Urban City,		green	green	green	green	green	green	green	green	green	green
Kilinochchi Urban City		green	green	green	green	green	green	green	green	green	green
Mankulam Urban City		green	green	green	green	green	green	green	green	green	green
Mullaitivu Urban City		green	green	green	green	green	green	green	green	green	green
Vavuniya Urban City		green	green	green	green	green	green	green	green	green	green
FEATURES	Dispersed Rural Housing	green	orange	orange	orange	orange	green	orange	green	orange	orange
	Agricultural re-settlement	green	orange	orange	orange	orange	orange	orange	orange	orange	orange
	Concentrated Infrastructure	green	green	green	green	green	green	orange	orange	green	orange
	Controlled Extraction	orange	green	green	green	green	green	green	green	green	green
LOCATIONS	Jaffna	red	orange	orange	green	green	green	green	orange	orange	orange
	Kilinochchi	orange	orange	red	orange	orange	red	orange	orange	green	green
	Mannar	red	red	red	green	green	red	green	green	orange	orange
	Vavuniya	green	green	green	green	green	green	orange	orange	orange	green
	Mullaitivu										
RESOURCE REQUIREMENTS	Land	green	green	green	green	green	green	orange	orange	orange	green
	Water	green	green	green	green	green	green	green	green	green	green
	Minerals										
LIKELY ACTIVITIES	Dispersed Agriculture	orange	orange	orange	orange	orange	orange	orange	orange	orange	orange
	Sea Fisheries	orange	orange	orange	orange	orange	orange	orange	orange	orange	orange
	Rural Settlement	orange	orange	orange	orange	orange	orange	orange	orange	orange	orange
	Urban Expansion	red	red	orange	red	red	orange	orange	orange	red	orange

Likely to **Improve** status of SEIs	Probable **Conflict** with status of SEIs - unlikely to be mitigated, therefore needing special attention	Potential **Conflict** with status of SEIs - likely to be mitigated	**No Likely** interaction with status of SEIs

4. Specific Applications of the ISEA-North

4.1. Applications in North and Other Areas

There are a number of examples that demonstrate how the ISEA has contributed to strategic decision making and development planning, covering Northern Province and elsewhere in the country.

The National Physical Planning Department formulated the Northern Province Regional Structure Plan in 2012/2013 with the assistance from the Government of Australia (AusAID) using the ISEA information base. It contributed to developing the infrastructure development framework for the region for investment in the long-run.

Another example is the Urban Development Authority, which formulated a large number of Urban Development Plans for Kiinochchi, Mullaitivu, Mannar, Vavuniya, Vellankulam and Jaffna cities. The concept plan for Mankulam City initially included a larger environmentally sensitive open forest area. Similarly, a forest patch was included in the Kilinochchi Urban development plan. Following the ISEA, however, urban development plans were modified to take into account the environmentally-sensitive areas.

The Asian Development Bank (ADB) agreed to fund the North Central Province (NCP) Canal project, and the ISEA was used for the initial pre-feasibility by ADB technical teams. Most of the information contributed by government agencies to this project was drawn from the ISEA database.

The Forest Department had little information on the Gazetted Forest Reserves in the Northern Province prior to the ISEA. Based on a special study conducted under the ISEA, the physical boundaries of all forest areas were identified, as these were essential for conservation under the Forest Ordinance. This information is now being used by the "UN Reducing Emissions from Deforestation and Forest Degradation (UNREDD)" initiative and for tourism planning.

The Department of Archaeology explored close to 260 archaeological and historically important sites throughout the Northern Province, of which 200 archeological sites have been declared under a Gazette Notification.

The Department of Wildlife Conservation (DWLC) identified the most sensitive wildlife reserves. The dialogues facilitated by the ISEA helped, both the Forest and Wildlife Agencies to jointly study and establish continuous elephant corridors in the region. As a result, DWLC declared a number of wildlife sanctuaries in the Northern Province mainland (Chuddikulum and Elephant Pass) including part of the Delft Island via Gazette Notification, 1920/3 on 22 June 2015.

The National Water Supply and Drainage Board (NWSDB) has demarcated an area for constructing the water impounding reservoir in connection with Per Aru, to supply water to the Greater Vavuniya area. The ISEA contributed in identifying boundaries to protect water resources. It also selected a site in Jaffna for its sewerage treatment plant based on the ISEA.

The Lessons Learnt and Reconcilation Commission (LLRC), which concluded its work on 15 November 2011, recommended to formulate District land use plans for the five districts of the Northern Province in order to facilitate the monitoring process of establishing humanitarian needs in the North. The Land Use

Policy Planning Division of the Ministry of Lands use the ISEA data extensively as well.

The ISEA North specifically investigated the most attractive, potential areas for tourism in the Northern Province including land and marine based resources for development. The Sri Lanka Tourism Development Corporation recognised areas identified by the ISEA as suitable to promote tourist hotels, guest houses and other resorts. Tourism plans are being developed for Mannar (with support from The World Bank/International Finance Corporation), and Delft Island (by the Land Use Policy Planning Department).

Based on ISEA information, the International Union for Conservation of Nature (IUCN), the UDA, Tourist Board and Coast Conservation Department carried out field assessments covering 24 islands in the Gulf of Mannar and Palk Bay area in the Northern Province. The information generated will help to implement Development Scenario 3 identified by the ISEA-North process, including the generation of information for undertaking EIAs for specific projects in this area.

The Governments of India and Sri Lanka held a series of discussions on the post-conflict fishing discords in the Palk Bay and Gulf of Mannar. The discussions benefitted from the ISEA-North environmental baseline information on the location of seagrass meadows and other sensitive marine areas. Discussions held in November 2016 recommended the acceleration of joint work to develop conservation and management plans for fisheries in order to address illegal and ecologically damaging fishing practices. The ISEA-North information could be of immense help to decide on alternative livelihoods for Sri Lankan fishermen.

UDA and the Department of Archeology developed the "Heritage Tourism Development

Plan for Delft Island", which it submitted to the Department of National Planning for funding, using the ISEA-North generated information.

The World Bank funded the Environmental Assessment and Management Framework of the Strategic Cities Development Project (SCDP) of the Ministry of Megapolis and Western Development (2016), which used the ISEA-North Opportunity Map and other information in peparation of the Integrated Drainage Master Plan for the Jaffna Municipal Council area including ponds.

The process of using SEIs and scenario-based evaluation was adopted in the SEA for the "Western Region Megapolis Planning" (WRMP) in May 2016. The WRMP is the Government's largest urban development project (http://wrmpp.gov.lk/).

In 2016, the Japan International Cooperation Agency (JICA) decided to use an SEA approach based on the ISEA-North experience to generate an integrated development plan for the Kandy City, the second largest city in Sri Lanka. Kandy and its suburbs have a range of environmental issues related to transport, connectivity, settlement, disaster risk, and pollution issues linked to rapid development. As the last capital governed by Sri Lankan Kings and as the country's Buddhist center, Kandy holds an important historical and cultural signficiance.

4.2. Use of ISEA outside Sri Lanka

Based on Sri Lanka's ISEA experience, UNEP proposed to use the ISEA approach as one of the multi-sector and multi-stakeholder tools for post-conflict and post-disaster development support. UNEP funded a knowledge transfer activity among three countries; namely, Cote d'Ivoire (a country in the African continent, emerging after a conflict) and Nepal (a country that is in the process of rebuilding after the

2015 earthquake) and Sri Lanka (a country that already has ISEA experience).

Between March 20-23, 2017 delegates from Nepal and Cote d'Ivoire with UNEP staff attended the knowledge sharing workshop in Colombo where key agencies from Sri Lanka involved in ISEA-North shared their experience.

Figure 16: Team Leader ISEA-North, Prof. Buddhi Marambe on Sri Lanka experience

The delegation then visited the Northern Province for three days and met Government officials, NGOs and also visited key sites described in the ISEA-North as Conservation Areas. These areas include the Chundikulam Sanctuary in the Kilinochchi District and the Vankalai Wetland and Bird Sanctuary located in the Mannar District. During the tour to Northern Province, the visitors met with Northern Provincial Council key officials at Jaffna in a meeting chaired by the Hon. Minister of Environment. The Minister pointed out that during the war, forest reserves were safe with a forest cover reaching up to 54% and how post-conflict development cause pressure on natural resources, including forests, geological resources and water. He highlighted the importance of the ISEA approach and the process as a potential tool for sustainable natural resource management and also highlighted the need to declare ISEA as a legal document.

As a result of the knowledge sharing workshop, Nepal with an estimated loss of US$ 700Bn to the economy due to the 2015 earthquake, plans to identify opportunity areas to locate 600 identified projects and livelihood development programmes as part of the reconstruction

Figure 18: Nepal, Cote d'Ivore and UNEP team meeting Northern Provincial Minister of Environment

process. Nepal selected their Road Sector project as the sector to test the ISEA approach as a pilot. During the discussion, the Nepal team identified two major barriers; namely, the authentication of available data and assessing concerned agencies to adopt the ISEA approach. Nepal also highlighted the need to include habitat types; recognize the influence of rebuilding the National Parks and Wildlife to ensure sustainability; need to adopt soil and eco system values of forests in the process;


Figure 17: Team Nepal plans to adopt ISEA experience in post-earthquake reconstruction

need for incorporating Earthquake Maps for hazard and vulnerability assessments; and including geology, soil, water drainage, land use/land cover to strengthen plans and decision making.

Similarly, the team from Cote d'Ivoire identified the major project that involve a Port Expansion as the subject to apply the ISEA process. The team identified several barriers: namely, the difficulty in getting required data/lack of data; need for a mechanism and strategy to collect unavailable data; and lack of expertise in the ISEA process.

During the deliberations, the team highlighted the need to understand the influencing factors of the Port project; value of identifying the designs to minimize erosion towards east using hydrological modeling when constructing two

breakwaters; necessity to identify highly affected areas and moderately affected areas using climate change impact data.
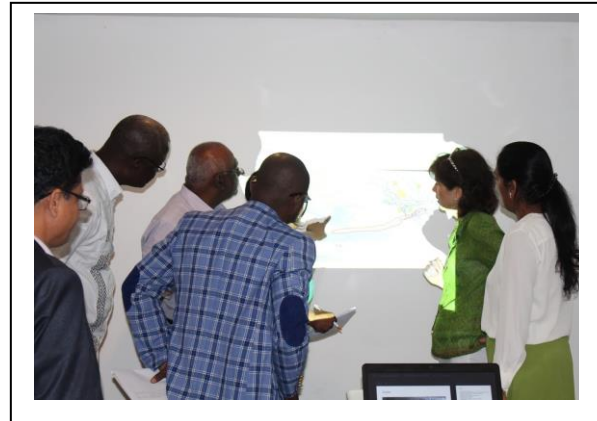
Figure 19: Examining the potential multi-stakeholder approaches to port St. Pedro project

5. Lessons from the ISEA Process

5.1. Agency Co-operation

The approach taken by the ISEA process was to say "yes" to development and reconstruction in the Northern Province, while highlighting environmentally-sensitive areas for conservation or for further assessment. Maps generated have been used by National government agencies and helped to inform the *Uthuru Wasanthaya* (Northern Spring) development programme.

The ISEA-North process created a single platform that increased the confidence and comfort levels of the Government Agencies to make decisions collectively and through consensual dialogue. The enabling environment created by the ISEA process helped to overcome institutional barriers and enhanced information-sharing amongst Agencies and the Provincial and District Governments. A single database was established within the UDA, which was shared between all participating government agencies.

Trust-building was established by developing initial factsheets, which explained the meaning and objectives of the proposed ISEA work. Lead agencies, namely the CEA, DMC and UDA, convinced the other agencies of the value of being part of the ISEA.

The participation of the CEA as the lead partner, in particular, was important. As the CEA is the main Government approving authority for Environmental Compliance, their involvement was critical to the ISEA process.

UNDP played an active role in supporting Government agencies in all the steps of ISEA-North. Briefings to senior officials in then Government, both at National and Regional levels were a key aspect of the project.

5.2. Political Authority Support

The work of Government Agencies received political support and endorsement from the highest levels, particularly the Presidential Task Force, which allowed field access to the Northern Province. The trust, which had been built between the Government Agencies, the PTF and UN was critical in supporting the process to move forward.

5.3. International Inputs

Inviting senior technical staff through UNEP to support the design of the ISEA was advantageous and added value to the ISEA Process. Sector experts working with Government officers from different Agencies, even with limited data, made it feasible to discuss the possible outcomes of proposed developments, undertake the assessments and adjust plans accordingly.

5.4. Baseline Information Generation

The ISEA helped to generate and fill information gaps on essential data such as forests, geology, archeology, soils, water, etc. However, this effort of generating new information added a minimum of one year to the ISEA process. This involved identifying information gaps; having adequate resources to generate the information; agencies willingness to work in hazardous and dangerous conditions, after the conflict, in the field; and waiting for new information before stakeholder dialogues could be conducted.

Nonetheless, baseline mapping and information gathering contributed immensely to the process, because it established a sound basis for making and prioritizing land-use decisions. In order to replicate the ISEAs in post-

conflict/disaster situations, this additional time investment for data gathering needs to be factored into timelines and resources.

Furthermore, mobilizing senior technical experts from within and outside Government Agencies also proved equally critical. For example, the Archeological Department identified over 200 new sites mostly in the Mullaitivu area in the proximity to the final battle ground of the Sri Lanka Army and rebel/opposition fighters, with support of Archeological experts outside the Department. Similarly, other Agencies also used top-notch talents to map natural resources and other information.

5.5. Environment for Decision-Making

Before the ISEA, the standard practice was that each sector (and corresponding Government Agency) would independently decide on land-use for that given sector with no or little consultation with other sectors, thus increasing the chances of creating conflicting development and environmental priorities. Proposed infrastructure plans often contradicted the conservation plans of forests, wildlife, water resources, and archeological sites. Moreover, in most cases, disaster and climate risk considerations were not part of proposed development plans. The ISEA changed these standard practices.

For example, the pooling of information and collective analysis, with regards to resettlement planning, disaster information, forestry, wildlife and minerals, helped government agencies to better understand each other's priorities and views on where they could compromise and reach practical solutions. One such instance was the "historical" agreement, on how to prioritize forested areas in the Northern Province, allowing certain areas to be released for resettlement and development, which had

the critical endorsement from the Forest Department. Similarly, government agencies reached consensus on maintaining a high level of conservation in some areas in order to maintain wildlife corridors and protect archaeological areas from infrastructure construction, mining and other developments.

Potential environmental conflicts of proposed development actions were identified at early stages and before development actions could be implemented, thus minimizing environmental impacts and risks.

For example, the resettlement process in the North was informed primarily by the new development plans generated after the ISEA by the UDA and other investment agencies for developing tele-communications, roads, ports, power, irrigation etc. The ISEA-North process helped validate the proposed resettlement areas and avoided resettlements in disaster-prone areas or environmentally-sensitive areas (i.e. avoiding human-elephant conflicts by settling near elephant corridors). The ISEA process enabled agencies to compare settlements prior to 1983 (before the conflict), and move these away from identified disaster-prone areas (cyclone paths, flood-prone areas, etc.) and from environmentally-sensitive areas. Even the size and location of a city like Mankulam was changed based on the ISEA process and information, as discussed in Section 2.

The ISEA-North process introduced the use of Strategic Environment Objectives (SEOs) and development scenario assessment (Table 2, 3 and 4), which were novel to many of the Government agencies involved. The scenario assessment allowed agencies to better understand potential environmental issues on the ground from a high-level perspective (i.e. obtaining an overall picture) and discuss remedial measures. These remedial measures

were compiled in the Final ISEA-North Report. In this regard, the ISEA -North paved the way for a meaningful assessment before development activities progressed, while at the same time addressing post-conflict reconstruction and development needs.

5.6. Support to Development Partners

International donors found the ISEA outputs useful since they were generated as a collective effort by multiple Government Agencies. For example, the North Central Province Canal project, funded by the Asian Development Bank, as mentioned previously, used the ISEA results for conducting its due diligence process; this project provided water to the North through river diversions from the South, and facilitated water supply schemes for the Jaffna Peninsula.

The ISEA process contributed directly to early post-conflict normalization in terms of access to livelihoods, markets and improved quality of life in the Northern Province. However, the healing and re-integration aspects of the normalization process will take time, and the ISEA-North considerations of sustainability will contribute towards this long-term process, thereby providing support to multiple development efforts.

5.7. Logistics and safety

Throughout the ISEA-North, special attention was given to ensure the safety of staff. Travel timing and working in mine cleared areas were the main concerns. Following UN travel guidelines and obtaining the support of Sri Lanka Military helped much towards safety and security of the teams engaged in field level studies. This aspect was particularly important in commissioning and conducting studies, after post-conflict situations where land mines are around. Some of the land mines over the years may have washed away from original site, creating hazardous conditions beyond identified mapping areas.

6. Lessons from ISEA Implementation: Five Years After

6.1. Slow Adoption of ISEA

ISEA-North was an innovative process that was introduced and implemented at the most appropriate time, just before the development wave reached the Northern Province. ISEA planning started in November 2009 and ended with the Final ISEA Report in 2014. Nevertheless, the information generation was completed in 2011 and inter-agency discussions were completed in 2012, with most of the recommendations available to agencies by the end of 2012.

However, the potential use of the information generated from the ISEA-North, in terms of implementation of the ISEA recommendations found in the Final Report, has not yet been fully realized nor mainstreamed in the development of the Northern Region, even five years later.

On one hand, information collected during the studies conducted by the key government agencies, funded by UNDP, as inputs to the ISEA-North (Geology, Water Resources, Archeology, Marine and Coastal etc.), was immediately mainstreamed through their line functions and used to prepare budget proposals for coming years etc. Many agencies have been extensively using the maps generated through the ISEA process, including the baseline maps and maps with combined overlays.

A review process carried out by IUCN, five years later identified the main reasons for the lack of mainstreaming and follow-up to implementation.

ISEA-North process assumed that the lead agencies, especially the CEA and DMC, would take ownership and mainstream the ISEA data and recommendations through National and Regional development plans. This assumption,

did not materialize, fully or as expected, primarily since the ISEA-North recommendations were not formalized as a legal instrument. In Sri Lanka CEA has the national mandate for conducting SEAs and monitoring compliance.

The Disaster Impact Assessment idea put forward by the Disaster Management Centre also did not achieve the expected level of mainstreaming.

If the legal status of the ISEA-North had been established, the adoption of the ISEA recommendations and follow-up monitoring would have been greater. For example, the regional CEA office based in Jaffna would have had a legal mandate to push for the implementation of recommended levels of natural resources use in certain areas. The actual practice or level of mining of sand and gravel was much higher than the permitted level of mining that was approved by the Geological Services and Mines Bureau (GSMB), a critical deviation from the ISEA-North prescribed level.

6.2. Extent of International Assistance

Another aspect worth observing is the extent of donor involvement in the development and implementation of the ISEA. During the development of the ISEA process, UNDP took a major responsibility in conceptualizing, fund raising, providing technical support, coordinating and facilitating the process, while CEA and DMC provided the necessary and critical legal and institutional mandate. The speed and the quality of ISEA-North development was largely attributed to the involvement of international development

partners, the leadership provided by the CEA and DMC, and the commitment of participating agencies.

However, the same combination and levels of engagement could not be realistically expected during the implementation of the ISEA recommendations and findings. Most of the implementation issues have been attributed to the lack of political leadership and the inability of Government offices to push forward the ISEA-North recommendations, partly due to lack of capacity, but mostly due to the lack of political will.

On the other hand, it can be questioned that the ISEA process was not Government driven although the Government participated in each of the steps. This may have impacted the adoption of ISEA recommendations and poor buy in by the Government. Although there is no clear answer to this aspect, but it is good to pay attention to this "ownership" element in future work, especially in programmes that involve extensive international assistance.

6.3. Political Will for Implementation

It is very interesting to note how the level of political will changed during the time ISEA-North progressed. The Chairman and the members of the Presidential Task Force (PTF) for Northern Development "*Uthuru Wasanthaya* – Northern Spring" fully endorsed and supported the ISEA process. The Chairman (also the then Hon. Minister of Economic Development) ceremonially inaugurated the ISEA-North's "Map Compendium" at Colombo Hilton. The event was attended by the Hon. Minister of Economic Development, Hon. Minister of Environment, Secretary of the Ministry of Environment, Chairman of Central Environment Authority and Director General of the Disaster Management Centre, Country

Figure 20: Inauguration ceremony of ISEA-North

Director of UNDP, and other invited representatives from local and international agencies.

The review indicated that the information on potential benefits and the long-term value of implementing the ISEA-North's recommendations was not effectively conveyed to high-level policymakers, including the Chairman of the Presidential Task Force for the North, at the time when the Opportunity Map was launched. Hence, future efforts need to invest heavily on communication and advocacy.

6.4. Advocacy Needs

Despite the enthusiasm and support generated in launching maps and studies, the ISEA-North was not totally embraced by the Ministry of Economic Development. The ISEA-North process was sometimes considered as a restriction to accelerated development. Findings indicated that the political authorities considered that the Opportunity Map restricted the freedom to make decisions for identifying areas for development. For example, the announcement of Chundikulam and Delft as sanctuaries was put on hold, and they were gazetted after the Government change in 2015.

One possible scenario to explain why a less-than-ideal political acceptance was received may be attributed to the way in which the

Opportunity Map was presented to policymakers. Although the areas for development without constraints were significant, with over 70% in the Jaffna District and around 46% in Kilinochchi and Vauvniya, this proportion may have still been considered too restrictive for major proposed developments.

On the other hand, in other districts where technical capacities to enforce proper environmental management were more available, areas for development could be further expanded, as per the ISEA-North information (Table 1). Information could have been presented in a manner which more clearly explained the different options to policymakers.

6.5. Traditional vs. prescribed land uses

Although the ISEA-North recommended certain land-use options, it did not discuss the mechanisms to free up identified environmentally-sensitive areas that had once been used as settlements in the past. It also did not discuss ways for compensating population displacements, which might result from implementing the ISEA-North recommendations, e.g. to create elephant corridors.

Enhanced corridors for wildlife and high value forest conservation areas sometimes contradicted the concept of the "right to resettle" by former residents in areas that were identified as environmentally-sensitive in the ISEA-North findings. This aspect created several land-use conflicts, especially in Vavuniya and Mannar Districts, where former residents stressed the need to return to their original settlements.

Government had to appoint a Special Committee to resolve the land conflicts associated with human rights and conservation needs. However, one may argue that addressing all socio-economic issues is not the primary objective of the ISEA and that follow-up actions may be warranted in this regard, but falls outside the scope of the ISEA process.

6.6. District Level Experience

During the review in 2016 conducted by IUCN, discussions with key government agencies, district administrative authorities and planning units in the five Northern Province Districts revealed several important considerations towards implementing recommendations.

Introduction of the SEOs and Scenario Assessments followed by recommendations for each development project had been the core of the ISEA-North implementation at district level. District Government staff confirmed that the ISEA related information was useful and recommendations are being implemented, but at a less than optimal speed.

The review indicated that it was not too late to revisit ISEA recommendations and carry out extensive awareness, education and capacity-building efforts at National, Provincial and District levels, in order to reach the expected benefits of ISEA, making development sustainable and resilient.

The following points were made based on discussions in the Districts, conducted in 2016:

a. The Provincial Ministry of Environment and Agriculture has taken steps to promote the ISEA-North approach. However, there remains a disconnection between the National, Provincial, District and Local Authorities in terms of sharing information and joint planning, implementation and

monitoring, including for the ongoing Sustainable Development Goals (SDGs) process.

b. With the exception of the Jaffna District, the four other districts have not used the ISEA-North data as a basis for undertaking subsequent planning after 2011. Change in staff, lack of computers and GIS capacity and inability to see the usefulness of the ISEA were some of the identified barriers to ISEA uptake. However, as a result of the review in 2016, districts have improved their understanding and appreciation of the ISEA data. They have requested for update of the ISEA data and support for capacity-building to use the information in planning, implementation and monitoring.

c. It was envisaged that the UDA will act as the clearing house for ISEA-North information. The process was delayed due to issues related to National Data Clearing Mechanism establishment, that is ongoing. However, the ISEA-North data was made available via multiple channels and there is room for improvement in the data exchange processes. This was identified as a barrier to mainstream ISEA into regional, district and local authority plans, and to bring the planning processes in the Northern Province to a single platform.

d. As part of the ISEA-North, the project trained the District Planning Units in all five Northern Province Districts on the use of ISEA data at the University of Peradeniya for three weeks. An external GIS expert was seconded for six months to the District Planning Units to ensure that the GIS systems

were in place and that ISEA data/maps are being used. Although the ISEA data was transferred and capacity of staff was improved in the District Planning Units, mainstreaming of ISEA data in district level planning and development were less than optimal.

e. More investment and time was needed to ensure mainstreaming of the ISEA findings. The assumption was that the Government Agencies would take the ISEA findings forward, yet this was not achieved. Given that that Provincial staff have many priorities, uptake of the ISEA findings had proved challenging.

f. ISEA-North created a mechanism for briefing new senior Government staff in the districts. As the Government staff turnover is high, especially in the North, the project at least ensured a mechanism to update new Government officials, including senior politicians.

Although the CEA and DMC led the ISEA-North Process, the training and capacity building after the completion of ISEA-North was carried out, primarily through DMC due to resource limitations at CEA (funding and human). DMC had Disaster Management Coordinators in all five districts, whereas the CEA operated only in the Jaffna District.

District Planning Units were the key target group in the five districts where the training, in terms of map use, was directed. However, both CEA and DMC did not use the ISEA-North as a key tool for their long-term strategic planning and follow up on the implementation of ISEA recommendations. This could be attributed to the fact that the ISEA-North process fell short of legalizing the recommendations, thereby

creating an environment where agencies are bound to use the content.

With the momentum of the ISEA-North, similar processes were initiated in the Uva Province and Gampaha District, but showed only partial completion. Data compilation was undertaken, but the CEA did not want to pursue it intensively, primarily because of staff changes and changes in Government in the respective districts.

Awareness-raising amongst other stakeholders, namely district government agencies, non-government entities and communities, is key to a successful ISEA development process. However, the ISEA-North process did not allocate additional resources, nor did UNDP have resources to continue awareness-raising beyond the work carried out during the ISEA-North. Some efforts were carried out by the Northern Province Ministry of Environment in local awareness-raising, under the leadership of the Hon. Minister. Nonetheless, there are still opportunities to pick up the momentum in order to deliver extensive awareness-raising and education support to help operationalize the ISEA-North.

Reservoirs made by ancient rulers (tanks) located within proposed forest protected areas was another concern raised. Some of the tanks have been associated with previous settlements and were abandoned due to the conflict. A number of decisions are needed in the future land-use related to these tanks if the areas are to be identified as "no-development" zones. Several options to manage such situations are available, e.g. using principles of co-management, Payments for Ecosystem Services (PES) and benefit sharing among agencies and forest communities.

Addressing climate concerns has been a forgotten priority in the Northern Province's development. Observed practices in the Province include extensive ground water pumping in Jaffna, Mannar and Vavuniya Districts. Government Agencies have provided agriculture pumps for farmers as part of the resettlement process without adequate education on groundwater re-charge and basic elements of the hydro-geological cycle and need for water resource management.

Yet, water scarcity is a major development constraint in the Northern Province, as identified in the ISEA, and which will likely worsen as a result of climate change impacts.

Jaffna is already showing signs of sea water intrusion into ground water, partly as a result of over-abstraction. Eventually, accelerated sea level rise due to climate change will further exacerbate sea water intrusion. The ISEA-North identified climate related potential impacts, which could be addressed with better awareness and climate-smart technologies and development investments, including for livelihoods.

7. Conclusions

7.1. Key Observations

The ISEA-North process demonstrated a sound approach to post-conflict development and reconstruction, based on a multi-stakeholder planning framework. The key steps adopted in the ISEA-North—compiling available information, generating new information, engaging stakeholders, resolving land-use conflicts—could be a general approach, which can be applied in post-crisis situations.

Additional time to address data gaps should be factored, in cases where baseline data are not readily available. Obtaining new information often outweighs the disadvantages caused by delays due to additional data collection and are worth the wait. In addition, information generated strengthens the government agencies' capacities to fulfill their functions, a further benefit from this extra investment.

The main weaknesses identified included:

a. the lack of strong advocacy to obtain national and regional level political ownership to ensure follow-up implementation of the ISEA-North recommendations; and

b. the inability to legalize the recommendations, which would have empowered regulatory agencies to monitor the development activities in line with the broader recommendations of the ISEA-North.

Agencies at the district level requested for updated ISEA-North information and capacity-building support. Hence, there appears to be continued interest from the local government to revitalize the ISEA implementation process.

Still the new and ongoing projects and designs can be made environmentally sound and disaster and climate resilient, by using the ISEA-North material and the process. Maps and other information of the ISEA-North provide a sound base for monitoring by the District Advisory Committees, where District planning units provide the secretariat support.

The approaches used in the ISEA-North are generic and can be adapted to other SEA processes that involve more data and stakeholder groups. This was clearly demonstrated by other Sri Lanka projects, such as the Sustainable Cities Project by the World Bank for Jaffna and Kandy and the SEA for Western Region Megapolis Planning, which have adopted elements of the ISEA-North process.

7.2. Way Forward

Policymakers can use the ISEA-North process to channel large investments such as industries with potential impacts on the environment towards the designated "opportunity areas", whilst promoting other areas for nature-based development, such as ecotourism and other green development activities. This aspect of the ISEA-North implementation requires more specific guidance, so that potential land use is matched with the appropriate environmental management and intensive monitoring of potential impacts on the environment. This requires strong political will and enforceable mandates to make the Northern Province development sustainable and resilient.

The information generated during the ISEA-North is still relevant for management of ecosystems and natural resource use in the Province. Hence, it is not too late to look at

ways of mainstreaming the ISEA data, recommendations etc. in the Northern Province development. Several steps can be proposed as a way forward to maximize the benefit of ISEA-North.

a. Both Central Government and Provincial Governments accept ISEA-North as the guidance document for planned development and use of natural resources.

b. Identify and invest on capacity development of planners and staff to use ISEA recommendations, including maps, data, proposed safe-guards on natural resources.

c. Update the ISEA-North data set on land use and proposed projects, and engage the stakeholder entities again in a discussion process to renew the interest on the process and update the decisions on priority land uses including the "Opportunity Map."

d. Provide the legal powers necessary to incorporate the ISEA-NORTH in the development planning and environment conservation related decision making, including the CEA and other Agency approvals for resource use.

e. Create a communication strategy and educate and create awareness among stakeholder entities including public on the value of planned development to improve sustainability and resilience of people and ecosystems. Several studies to quantify the gains by doing so and what if scenarios on different resource uses could help much.

f. Setup and maintain a relevant and strong monitoring system to help the Provincial and District planning on the changes to natural resources and any potential adverse impacts to ecosystems and resilience.

These steps can be again taken jointly by the Government, UN and other relevant agencies.

8. References

ISEA-North Map Atlas. 2014. https://goo.gl/YcwFbq

Integrated Strategic Environmental Assessment of the Northern Province of Sri Lanka, Final Report. 2014. https://goo.gl/kJRV5N

OECD. 2006. *Applying Strategic Environmental Assessment – Good Practice Guidance for Development Cooperation*. 160 pp. Organization for Economic Cooperation and Development, France.