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Sustainable Sri Lanka



2030 Vision and Strategic Path



**PRESIDENTIAL EXPERT COMMITTEE
(PEC)**

Presidential Expert Committee (PEC)

Report on

Sustainable Sri Lanka 2030 Vision and Strategic Path

January 2019

Chief Editor: Mohan Munasinghe

Bureau: Saman Kelegama | Dushni Weerakoon | Hemanthi Ranasinghe
W. L. Sumathipala | Siri Hettige | Savithri Goonesekere

Lead Authors: Praveen Abhayaratne | S R K Aruppola | Abdul Azeez
Gamini Batuwitage | Neloufer de Mel | Anura Ekanayake
Shavi Fernando | Udan Fernando | P.A. Gooneratne
Savithri Goonesekere | Siri Hettige | Saman Kelegama
Amal Kumarage | Jagath Munasinghe | Mohan Munasinghe Hemanthi
Ranasinghe | Kamal Ranatunge | Rohan Samarajiva
W. L. Sumathipala | Asanga Tillekeratane | Mano Tittawela
Dushni Weerakoon | Madhura Wehella

Compilation: Presidential Secretariat

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Message from the President

I am pleased to issue this message to the report on Sustainable Sri Lanka 2030 Vision and Strategic Path, prepared by the Presidential Expert Committee (PEC) appointed in January 2017. An earlier draft served as the base document in a public consultation process launched in August 2019 to formulate consistent national policies that will guide Sri Lanka to become a truly sustainable nation by the year 2030.

The sustainable development path recommended by the PEC is unique to Sri Lanka. The 'Balanced, Inclusive, Green Growth' (BIGG) also goes hand in hand with our nation's long tradition of adhering to a 'middle-path' approach that has helped us remain a resilient nation for millennia. I applaud this innovative path suggested by the PEC, chaired by Professor Mohan Munasinghe, who is an internationally renowned expert on sustainable development. The painstaking work of the PEC is reflected in the report as it covers all aspects of sustainable development and highlights risks and suggests remedies. I am thankful to all members of the PEC for their commitment and dedication to this national endeavor.



The commitment of Sri Lanka to make development more sustainable is exceptional. In September 2015, I stood in front of world leaders at the General Assembly of the United Nations and pledged to provide leadership for Sri Lanka to take the foundational steps necessary to achieve the Sustainable Development Goals by the year 2030. Now, the Presidential Experts Committee on Sustainable Development has completed its report. My government is firmly committed to ensure that the country's growth is sustainable. To this effect, we have passed one of the first acts of Parliament in the world on sustainable development, which provides for the appointment of the Sustainable Development Council, which has now been established. Further, Sri Lanka is the first country in the world to appoint a Parliamentary Select Committee on Sustainable Development. All these initiatives equip Sri Lanka well to meet the Sustainable Development Goals by 2030.

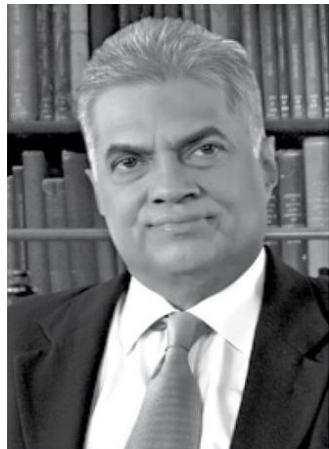
While the first draft was a concise, accurate report written by a panel of credible experts, I believe that for this to be a truly consensual national vision, it needed to be owned by the people, politicians of different parties, civil society, and the business community. For this, we provided all stakeholders the opportunity to comment, criticize and provide constructive feedback on the draft document, through the National Sustainability Discourse. Following the discourse, the draft document was revised to produce a truly consensual national vision based on citizen's feedback.

I sincerely hope that everybody will actively engage in the implementation of this Report to shape our nation's collective future and make Sri Lanka a sustainable, upper middle-income Indian Ocean hub that is economically prosperous, competitive and advanced, environmentally green and flourishing, and socially inclusive, harmonious, peaceful and just.

Maithripala Sirisena

President of the Democratic Socialist Republic of Sri Lanka

Message from the Prime Minister



I must take this opportunity to thank Prof. Mohan Munasinghe and his team of experts for painstakingly writing this document. Making this document accessible to the citizens and opening up a discourse to encourage public feedback on it, is commendable and is a sign of the participatory democracy we have rebuilt in the past 3 years.

For this vision to become a reality, our activities should join hands with the external world. Sri Lanka is a small island right in the middle of a large world. For thousands of years we have benefitted from being located strategically. Unfortunately, we seem to have forgotten this competitive advantage of the location. Our vision is to reclaim that mantle of international connectivity. We have to leave behind decades of inward-looking policies that restricted our capacity to grow.

Sri Lanka is a nation that prizes the values of democracy, and the National Sustainability Discourse helped to bring all its citizens together in a spirit of unity and strength. Just as everyone stood together to set the country free from the grip of colonialism back then, on January 8, Sri Lankans came together to set the nation free from the tyranny of dictatorship, corruption, nepotism and familial rule; ensuring our return to the hallowed community of democratic nations that assure its people freedom and justice. And now, the task before us is to ensure that the hard-won freedom retains its meaning and significance, and faces the biggest natural crisis at our hands, climate change, with courage and preparation. It is a task that calls for all of us to be united, irrespective of religious, ethnic and political affiliations. This indeed is the vision of the Government. In the eyes of the world, Sri Lanka has been restored to its position as a country that abides by the revered principles of democracy. Yet, before us is a formidable task of ensuring lasting peace and co-existence for all citizens while building on the concept of sustainable social economic development for the country.

The National Sustainability Discourse has helped us strive to understand the challenges before us as a nation and to be determined to give ourselves wholeheartedly to the noble vision of taking our country forward.

Ranil Wickremesinghe

Prime Minister of the Democratic Socialist Republic of Sri Lanka

Message from the Chairman of the Sustainable Development Council

As the Chairman of the Sustainable Development Council, it gives me great pleasure to issue this communique on the publication of the National Sustainable Development Vision.

This document, a draft of which served as a basis on which citizens engaged in a policy discourse on how to shape Sri Lanka's path up to year 2030, was prepared by the Expert Committee of H.E. the President with a great deal of commitment and I take this opportunity to appreciate their efforts in this regard.

I believe this is the first national effort of Sri Lanka to create a blue print to set out its long term economic, social and environmental goals for the next 12 years reflecting the country's strengths and capabilities. This is a sign of a true participatory democracy and an effort that ensures people's engagement in policy making.



The six-month nationwide discussion on the contents of the first draft of the Vision 2030 document helped create consensus on where citizens stand on particular issues. The Sustainable Development Council supports this long-awaited effort, as sustainable development can only be achieved through true citizen participation. The Sustainable Development Council will build on the public consensus on the Sustainable Sri Lanka 2030 Vision document, in order to inform our way forward to make Sri Lanka a truly sustainable country by 2030.

Udaya R. Seneviratne
Secretary to the President
and Chairman, Sustainable Development Council

Message from Secretary-General & Chief Economist of the National Economic Council of Sri Lanka



I am very pleased to send this message at the launch of the Sustainable Sri Lanka 2030 Vision. At a time when Sri Lanka is tackling challenges to development of the economy in an inclusive and sustainable manner, it is very important for the country to have a comprehensive national vision to guide policies, strategies and programs in economic, social and environmental sectors.

The development path identified in this document, namely, Balanced Inclusive Green Growth, is very appropriate, given Sri Lanka's traditional inclination for 'middle-of-the-road policies' that benefit all the people. To ensure national progress and the achievement of Sustainable Development Goals by 2030, it is critically necessary for Sri Lanka to adopt a consistent policy framework and create systems for efficient implementation of such policy.

The National Economic Council, as the highest policy institution of the Government of Sri Lanka, welcomes the Sustainable Sri Lanka 2030 Vision and will support its successful implementation once adopted by Cabinet.

I commend and appreciate the valuable contributions made by members of the Expert Committee on Sustainable Vision who drafted this report.

Professor Lalith P. Samarakoon
Secretary-General and Chief Economist
National Economic Council of Sri Lanka

Chairman's Foreword and Acknowledgements

I am pleased to discharge the duty assigned to be by His Excellency President Maithripala Sirisena on 2 January 2017, as Chairman of the Presidential Expert Committee (PEC), to prepare a report on **Sustainable Sri Lanka 2030 Vision and Strategic Path**. The PEC was appointed in early February 2017. I am proud to say that the draft report was completed by early December 2017, well within the one year we had promised. It is the first time a President of Sri Lanka has appointed an independent Scientific Committee to produce such a comprehensive and strategic national document. The PEC is most grateful to President Sirisena for his continuous support, while honoring us with this great responsibility, and giving us the opportunity to be of service to mother Lanka.

The PEC has striven to interpret the vision which President Sirisena outlined on 2 January 2017. In that vision, by 2030 Sri Lanka will become a sustainable, upper middle income Indian Ocean hub, with a prosperous, competitive and advanced economy, a green and flourishing environment, and an inclusive, harmonious, peaceful and just society.

Our work is part of the national contribution to the UN sustainable development goals (SDG) and 2030 Agenda, which President Sirisena endorsed at the UN General Assembly sessions in New York in September 2015. To our knowledge, Sri Lanka is among the first countries to produce such a comprehensive strategic plan on national sustainable development.

Managing a group of the best scientists and intellectual leaders in Sri Lanka, each one with strong opinions in his or her own field, was a challenging task for me! Nevertheless, we were able to complete this difficult task due to the selfless dedication of the PEC. The work was done without pay, in the national interest, and completed on time despite the busy schedules of PEC members. We worked as a team to produce a unified synthesis document, maintaining a collegial atmosphere to overcome both the complexities of the topic and the differences of view that emerged from time to time.

I must also acknowledge the fine contributions of non-PEC members who served on our writing teams, the Presidential Secretariat Staff assigned to this task, and the staff of the Munasinghe Institute for Development (MIND). The names of all contributors are mentioned explicitly in the report (Annex A).

Our report is a strategic document. It sets out Sri Lanka's current country profile and status, key issues and opportunities relating to sustainable development, future priorities and targets, and new initiatives and options to achieve ambitious goals by 2030. We describe the strategic national sustainable path in simple and clear language, to inform the President, empower the people, and provide guidance to government, civil society and business. The ultimate purpose is to build the national consensus, and move quickly to follow up actions. We believe the key findings of the report are essentially robust, irrespective of ethnicity, race, religion or political affiliation of the reader. Our hope is that it will continue to provide strategic guidance to all governments up to and beyond 2030, while strengthening sustainability and national unity.

The core framework seeks to harmonize the economic, social and environmental dimensions of the sustainable development triangle. The report identifies the **balanced inclusive green growth (BIGG)** path that will facilitate the national transition from "Conventional Sri Lanka 2018" to "Sustainable Sri Lanka 2030". The BIGG path is illustrated by 3 snapshots in time, identifying targets to be achieved in 2020, 2025 and 2030. To achieve this vision, we will need to transform our values, mindsets, institutions, behaviours, processes, methods, tools, technologies, projects, and policies.

The **BIGG** process follows the Sri Lankan tradition of **the middle path**. We are working towards a people-oriented and open socio-economic system, which is based on democratic and pluralistic institutions; able to protect our ethical values, heritage and environment; and built on respect for freedom, justice, equal opportunities, and human rights. Inspired by the ennobling elements of our rich past, all major stakeholder groups (government, business, and civil society), need to cooperate effectively within this framework, to ensure prosperity, peace, reconciliation, security and unity.

Our analysis is first integrated and harmonized across the three main clusters (or dimensions) of sustainable development: Economic, Social and Environmental. The main national issues are described and then practical solutions are identified. The second stage of analysis looks at specific sectors (like agriculture, energy, water, health, education, etc). Key issues in each sector are linked to the three main clusters. For example, energy use is a major driver of economic prosperity and vital for social well-being. But energy use also causes environmental harm. In the third stage, cross-cutting themes (like poverty and inequality, reconciliation and national unity, gender, etc.) are introduced. They are also integrated into the three clusters and sectors. Finally, Key Action Recommendations are set out for each cluster, sector and cross cutting theme. Urgent actions to be taken by 2020 are prioritized, followed by policies and measures for the medium term (2025) and long term (2030).

Our main focus is on providing a decent quality of life for all, especially the poor and disadvantaged, and meeting minimum standards in the provision of basic services. This is in line with the spirit of the SDG and UN 2030 Agenda which aims to "leave no one behind". Beyond those fundamental goals, we also support a vision in which the latest knowledge, methods and technologies can help Sri Lanka aspire to more advanced standards in every area of sustainable development.

The report reflects certain limitations imposed by our mandate, as well as time and resource constraints. The PEC therefore welcomed relevant comments received from diverse groups during the national sustainability discourse, and incorporated them in the final report. This consultative process that took place in 2018, further improved the document, while strengthening the national consensus, unity and security that will support Sri Lanka's forward progress towards achieving the 2030 Vision of sustainability. We feel that Sri Lanka could become a world leader on sustainable development, and stand ready to assist in any follow up plans that may emerge.

Professor Mohan Munasinghe

Chairman, PEC

January 2019.

E – EXECUTIVE SUMMARY

By 2030 Sri Lanka hopes to become a sustainable, upper middle income, Indian Ocean hub with an economy that is prosperous, competitive and advanced; an environment that is green and flourishing; and a society that is inclusive, harmonious, peaceful and just. We will follow the middle path based on balanced inclusive green growth.

E. EXECUTIVE SUMMARY

EC. INTRODUCTION AND CLUSTERS¹

EC1. Introduction and Overview

In 2015 UN member states, including Sri Lanka, universally accepted the 17 sustainable development goals (SDG) and 2030 Agenda. Within this framework, all countries are expected to set out their vision for 2030.

The Sustainable Sri Lanka 2030 Vision, is a strategic document that seeks to interpret and flesh out the vision which HE President Maithripala Sirisena outlined on 2 January 2017, when he gave the mandate to a Presidential Expert Committee (PEC) to prepare such a report. In that vision, by 2030 Sri Lanka will become a sustainable, upper middle income Indian Ocean hub that is economically prosperous, competitive and advanced, environmentally green and flourishing, and socially inclusive, harmonious, peaceful and just.

Expanding on the President's vision this report seeks a holistic approach that shows the key linkages needed to achieve:

1. A thriving and dynamic economy, providing a good quality of life, that is resource-efficient, stable and resilient to shocks, while respecting critical environmental and social sustainability constraints;
2. A green environment that builds on Sri Lankan's traditional respect for nature, and keeps our resource use within the sustainable capacity of the country;
3. A society that enables us to meet the basic needs of all people while encouraging peace, harmony, reconciliation, inclusion, social justice and security.

The PEC report describes a practical pathway to reach such a sustainable future by 2030, including sustainability perspectives in the intermediate years 2020 and 2025. PEC team members who are fully conversant with the range of sustainable development topics, will continue to follow an inclusive process by systematically consulting all relevant stakeholders, thereby ensuring wide ownership of the emerging path towards the vision of Sri Lanka in 2030.

The report sets out Sri Lanka's current country profile and status, key issues and opportunities relating to sustainable development, future priorities and targets, and new initiatives and options to achieve ambitious goals by 2030. We outline the strategic national sustainable path in simple and clear language, to inform the President, empower the people and provide guidance to the government, as well as civil society and the business community.

The core framework seeks to harmonize the economic, social and environmental dimensions of the SD triangle. The practical pathway to achieve our sustainable development vision follows a

¹ **Writing Team:**

Introduction and Overall Integration – Mohan Munasinghe
Economic – Saman Kelegama and Dushni Weerakoon
Environmental - Hemanthi Ranasinghe and W. L. Sumathipala
Social - Siri Hettige and Savithri Goonesekere

balanced inclusive green growth (BIGG) path, which will enable Sri Lankan to become a world leader of sustainability by 2030.

The **BIGG path** follows the Sri Lankan tradition of **the middle path**. We are working towards a people-oriented and open socio-economic system, which is based on democratic and pluralistic institutions; able to protect our ethical values, heritage and environment; and built on respect for freedom, justice, equal opportunities, and human rights. Inspired by the ennobling elements of the country's rich past, the three major groups (government, private sector, and civil society), need to be disciplined enough to play balanced, cooperative and effective roles within this framework.

The report reflects certain limitations imposed by our mandate, as well as time and resource constraints. First, this report is not intended to be a detailed national development plan -- to avoid duplicating the work of other branches of Government who are already carrying out that task. We use existing national, sub-national, sectoral and other plans and data, fitted within a consistent and comprehensive long term conceptual framework. Second, some of those other planning documents are not necessarily fully consistent with the BIGG path we propose. It is not within the PEC's mandate to revise those plans, but our key recommendations provide guidance on how other national, sub-national and sectoral plans may be brought into alignment within the BIGG path. Third, we have not been tasked specifically with implementation. However, the lack of success in executing past strategies and policies obliges us to put down some ideas on this key topic. Fourth, we use a simple baseline projection, without extensive macro-scenario analysis. Thus, our base case assumes an average 5-6% GNP growth rate, and 1.9% population growth rate up to 2030, and our results are robust over a range of values around this baseline (eg., GNP variation +/- 1%). Furthermore, some key scenarios are explored at the sector level (eg., worst case disasters affecting agriculture), to provide strategic guidance on risk management.

The report is structured as follows. It begins with Section E. Executive Summary. Section I follows, where we explain the fundamental aspects of sustainable development. Next, we set out how this complex topic is interpreted in the Sri Lankan context, by breaking it down in terms of three broad categories: 1. Economic, Social and Environmental Clusters (or Dimensions); 2. Sectors; and 3. Cross-cutting Themes. The process of integration across the dimensions, sectors and themes is described.

Next, Section C presents the viewpoint representing the three broad dimensions (clusters) of sustainable development. Section S sets out the sectoral analyses, and Section T links in the cross-cutting themes. The respective sub-sections covering each cluster, sector and theme, describe the current status, the main issues and challenges, potential remedies and benefits, and the likely future status. Key recommendations and a synthesis of results are presented in Section R.

EC2. Economy

2.1. Summary

The Sri Lankan economy demonstrates a high degree of macroeconomic volatility and instability caused by structural imbalances, evident from recurring fiscal and external current account deficits. Sri Lanka is consequently beset by high levels of debt, a heavy reliance on foreign capital inflows, dwindling exports and foreign direct investment (FDI) flows, a steady depreciation of its currency and high interest rates. While Sri Lanka has been more successful on the human development front, there remain considerable variations in poverty rates between regions and socio-economic groups.

The continuing prevalence of income inequality is also of concern. Additionally, Sri Lanka suffers from economic inefficiencies across a broad range of areas. High and worsening levels of corruption continue to impede efforts to improve efficiency and productivity. Added to these domestic concerns are challenges posed by global developments, from low consumer demand in key export markets such as the US and EU, rising commodity prices that signal a reversal in low international oil prices, and turmoil in the Middle East that endangers earnings from worker remittances.

To minimise vulnerability to exogenous shocks and maintain macroeconomic stability, achieving both internal and external economic stability is essential. Internal stabilization could be achieved by improving fiscal consolidation and tax collection efforts, and the adoption of prudent monetary and exchange rate policies. Achieving external stability requires a progressive improvement in generating higher export earnings through reforms that address supply-side rigidities and enhance Sri Lanka's export competitiveness. A strategic approach to bilateral, regional and multilateral engagements with trading partners is also important in ensuring export growth momentum, access to FDI, and other forms of development finance to navigate turbulent global economic developments. Given that a majority of Sri Lanka's poor are in the rural sector, which primarily relies on agriculture, promoting sustainable agriculture through productivity improvements – such as new technology and farming techniques, improved extension services and setting up of agro based industries – should be a priority. The enactment and proper enforcement of necessary legislation is key in minimizing corruption.

If the government shows a strong commitment to address current challenges by implementing economic reforms to improve its *Doing Business* global rankings to a position below 70 from the current 110, while lowering its public debt from the current 79.3% of GDP to 70% within the same period, the economy will be better positioned to raise investments, export earnings and achieve an economic growth rate of 7% by 2020 from the current 4.5%. This will facilitate the next step of making the transition to high middle-income status, and becoming an Indian Ocean hub, built on a knowledge-based, highly competitive, social-market economy.

2.2. Key Action Recommendations

- a. Strengthen fiscal consolidation and improve tax collection efforts and adopt prudent monetary and exchange rate policies to achieve internal stability
- b. Increase export earnings and FDI flows to achieve external stability – through supply-side reforms that improve export competitiveness, and a strategic approach to trade agreements. Urgent measures are also needed to manage high levels of debt.
- c. Promote sustainable agriculture through productivity improvements to address persistent poverty in the rural sector
- d. Rationalize wasteful expenditure, particularly by ensuring the precise targeting of social welfare programmes for poor households
- e. Create more job opportunities (especially for women and youth), to address inequality concerns and make growth more inclusive, coupled with increased skills development, and for women, cultural acceptance of their work outside the home/community and better child care facilities.
- f. Provide better opportunities for the growing senior citizen population to contribute their experience for sustainable development and improve their retirement social security safety nets.

- g. Continue with ongoing efforts to review and restructure strategic SOEs, by strengthening professional management and accountability, and minimising political interference – the focus should be on efficient performance of the SOE, rather than on ownership (i.e., public or private).
- h. Improve *Doing Business* indicators – specifically with regard to enforcing contracts, paying taxes, registering property, and getting credit – to improve economic efficiency
- i. Enact and enforce necessary legislation to promote transparency and accountability and thereby minimize corruption

EC3. Environment

3.1. Summary

The key environmental issues needing action are waste disposal, environmental health , deforestation and forest degradation, water and air pollution, degradation of coastal and marine ecosystems, climate change, and ozone layer depletion, which should be looked at together with society and economy for lasting solutions. Balanced Inclusive Green Growth (BIGG) is the overall sustainable solution. Green Growth implies reducing environmental risks and ecological scarcities. Specific policies and efforts are needed to ensure that green growth is inclusive and environmental sustainability is not achieved at the cost of greater inequality and poverty.

The state controls 82% of land in the country, while 17.7% is privately owned. Landless peasants have encroached on state land, causing a decline of forest cover to 29% today. One third of the land is subject to soil erosion, with a significant erodible proportion in many districts and hill country sloping lands having the severest erosion. Soil fertility affects agricultural lands productivity making 1.2 million hectares mostly in the Dry Zone unproductive and of limited use. Deforestation is due to encroachments for residences, cultivation of tea and field crops, use for infrastructure development and demand for timber and wood products for household, industrial and infrastructure. A holistic solution involving institutional, legislative and participatory approach is recommended through enforcement of existing legislation, and participation of all stakeholders to address these issues.

Water pollution occurs in waste dump sites, agricultural areas and lagoons. Many SMEs discharges wastewater inland without proper treatment. Safe drinking water is diminishing in some parts of the country from contamination after floods, heavy metals from agrochemicals and industrial effluents. As cleaning water bodies are very costly, action is needed to prevent water pollution from all sources.

Open dumping of solid waste by many Local Governments causing soil and water pollution. Waste dumps are breeding grounds for mosquitoes and flies causing health impacts. Solutions for solid waste includes finding suitable disposal sites, creating sanitary landfills, applying 3R practices, adopting effective policies and legislations for banning wasteful practices.

Polluted ecosystems cause many diseases which cost money and lives – eg., CKDU, dengue. An interdisciplinary approach is a must to find sustainable solutions to these issues looking at economic, environmental, health and legal aspects.

Poor traffic management and poor quality passenger transportation are causing urban air pollution. For example, transport associated air pollution is very serious especially in cities like Kandy. Emissions from fossil fuel based power plants aggravate the situation, although the harm is

much smaller compared to other countries. Resorting to smart transport solutions, smart grids, and renewable energy based power generation can be effective solutions.

3.2. Key Action Recommendations

- a. Implement urgent short, medium and long-term measures to reduce vulnerability to disasters (eg. droughts, floods, landslides) and adapt to climate change.
- b. Take early action to prevent air pollution due to heavy traffic congestion in major cities and introduce smart and sustainable transportation systems including non-motorized transport, electric vehicles and electrically operated public transport systems.
- c. Implement participatory approaches to control deforestation and increase forest cover, and reduce soil erosion, land degradation and enhance soil fertility.
- d. Introduce environment friendly waste disposal methods.
- e. Preserve ecosystem services and improve ecosystem health, and minimize adverse impacts on human health (like CKDU and dengue), by reducing water pollution from all sectors, especially industry, agriculture, and waste disposal, through better enforcement of laws, regulation and pricing policy.
- f. Replace fossil fuel based power generation for national grid by using modern renewable energy and promote application of renewable energy in industrial and commercial applications. Reduce taxes on vehicles and machinery run on renewable energy - such as electric cars.
- g. Research and implement ideas about de-growth, bio-economy and circular economy, in all resource consuming enterprises to eliminate waste and encourage recovery of resources.
- h. Implement organic and biodynamic agricultural practices to reduce the use of chemical fertilizer and agrochemicals, to prevent long term health impacts and enhance soil properties.

EC4. Society

4.1. Summary

Sri Lanka's past social sector policies and considerable public investments facilitated significant social development in the country. However, a combination of population growth, uneven economic development and the over utilization of environment resources had led to a deterioration of social conditions in recent years as evident from persisting Poverty, increasing inequality, widespread malnutrition among women and children, increasing informal sector employment, low labor force participation of women, increasing public health issues, continuing exodus of skilled and unskilled labour and competition for public resources among ethnic groups, the latter at times leading to tension and violence. Issues connected with governance and rule of law such as corruption, abuse of power, inadequate decentralization of administration and the lack of implementation of evidence based policies in recent years have not helped arrest the negative trends with respect to social sector issues.

While it is necessary to recognize the intricate inter-connections between Economic and Environmental issues, social sector issues need to be recognized on their own right and policies and strategies need to be developed to address them. The achievement of SDG's over the next thirteen years would depend as much on progress on the social front as on the economic and

environmental fronts. In this regard, the sound management of the country's human resources is critically important. There are serious issues in the labour market that need to be addressed urgently. An increasing exodus of labour may not be sustainable in the long run and could damage the economy and society. While migrant workers and their families as well as the country at large derive considerable benefits from overseas employment, in particular from remittances, it is also necessary to recognize its negative outcomes, in particular loss of skilled labour and wage inflation resulting in higher cost of production and labour shortages. The development of evidence based policies in the area of education, skill development, research and innovation, employment, social security, protection of vulnerable groups, income distribution, food security etc. is an urgent step that needs to be taken. Policies also need to be developed on governance related issues mentioned above.

The diversification of the country's economy away from the present urban based service sector domination will help to create more balanced productive employment in both rural and urban areas. Promotion of rural industries based on agricultural raw materials is an important step that can be taken to narrow the present rural-urban disparity in terms of employment and income. Other effective measures that are necessary to reduce income inequalities include progressive income taxation, improvement of public educational services to cut down private tuition, introduction of a contributory health insurance scheme to minimize out of pocket medical expenses, adequate income support to the poor and vulnerable groups on the basis of a reliable and fair means test and the improvement of public transport services. Persisting ethnic tensions that threaten national unity and peace need to be defused through effective educational, language and decentralization policies and programmes. Social cohesion should be promoted through school and community level programmes.

4.2. Key Action Recommendations

- a. Implement measures to reduce income inequality through a twin strategy of progressive taxation and enhanced social investments leading to a guaranteed minimum household income and social security for all.
- b. Manage the increasing trend towards casualization of work and the expansion of the informal sector, through appropriate policy and program interventions in order ensure greater income and employment security.
- c. Formulate and implement a comprehensive, multi-level program of reconciliation at national and community levels.
- d. Take measures to arrest the trend towards greater social inequality in terms of income distribution and regional disparities, in particular rural urban disparities. Reduce gender-based inequality.
- e. Public -private as well as rural and urban gap in healthcare, education, livelihoods and transport needs to be narrowed in order to create greater equity in life chances across social strata.
- f. Take measures to improve the professional quality and outreach of various targeted social services to empower marginalized and disadvantaged groups such as the poor, disabled, the elderly, mentally ill, etc.

- g. Strengthen the subsidiarity principle by empowering lower tiers of government, especially local bodies and take effective measures to facilitate citizen participation in governance and development.
- h. Strengthen the rule of law, ensure personal safety and reinforce the regulatory functions of governance at all levels, in order to stem the tendencies towards lawlessness, abuse of power and corruption. Take special measures to arrest gender based violence.

E. EXECUTIVE SUMMARY

ES. SECTORS

ES1. Agriculture and Food

1.1. Summary

Rain-fed and irrigated agriculture contributes to 83% of domestic food availability (other than fish) and to over twenty five percent of Sri Lankan exports. The major export crops (tea, rubber, coconut and spices) represent the largest contribution (35%) to the agricultural GDP followed by paddy (29%). Around 25-30% of the population continues to be heavily dependent on agriculture.

Given the short time span of three years from the present to the year 2020, our main focus has to be on food crops. Food crops by and large are seasonal, while plantation crops and most minor export crops are perennial. Perennials require a much longer time span than seasonal crops to respond to changes. Almost the entire extent of plantation agriculture is in the Wet Zone. However, about three fourths of domestic food agriculture with nearly 90% of the paddy crop is from the Dry zone.

Changing weather pattern, rainfall in particular, has emerged as the biggest risk for the entire agriculture sector. Arguably the next big risk arises from the increasing reluctance of rural youth to engage in agriculture resulting in labour shortages. These two new risks combined together pose a severe challenge to the sustainability of the Sri Lankan agriculture. The fragmentation of land holdings with associated issues and continuing land degradation are other risks which have been developing over a long period of time.

Accordingly, the realization current food production targets are under threat. A shift away from high water dependent agriculture to low water dependent / drought tolerant crops and varieties along with mechanization are required to address this threat. At the same time the scale constraint of small farmers must be overcome via the formation of people's / farmer companies linked to longer value chains.

1.2. Key Action Recommendations

- a. Enhance the capacity and the ability to better forecast seasonal rainfall and provide early warnings on extreme weather events leveraging on modern technology and develop institutional arrangements to speedily respond to such early warnings.
- b. Develop drought tolerant crop varieties and cropping patterns which consume less water, labour and agro chemicals, and incentivize their adoption.
- c. Educate farmers on the need to conserve water and the use of new technology for farming, value addition and marketing. Medium to Long Term Results can be obtained thus.
- d. Enable farmers to overcome the scale constraint so that less water using crops can be produced, stored, value added and marketed profitably. This will facilitate the provision of

effective credit, input supply, storage as well as insurance in a sustainable / commercially viable manner.

- e. Educate consumers at large on better nutrition and appropriate changes in food habits. Consumption of less starch and sugar and increased consumption of fruits and vegetables may somewhat reduce the present high dependence on water for agriculture.

ES2. Education

2.1. Summary

The different stages of education prevailing in Sri Lanka include Early childhood care and education (ECCE); General education (school education); Technical and vocational education and training (TVET); and Tertiary and university education.

ECCE is received by children aged 3-5 years, yet remains a missed opportunity for some as participation from low income families remains low. Lack of a national policy and strategic plan detailing systematic service delivery and quality assurance for ECCE provision, under-investment in public resources, and ECCE being left largely to private sector financing and provision are critical issues.

In terms of school education, the country provides free-education from the primary stage to the first degree level in university education. There is, however, a lack of equal provision and access to quality education across the country. At present, the curriculum does not effectively integrate and embed skills into the courses of study such that students can develop and demonstrate a broad range of skills for employment or for further studies.

In the TVET sector, the government invests a significant amount of public funds for its expansion with the aim to produce skilled labour for national and international markets. The programmes are provided free of charge, but they lack the required quality and labour market relevance due to the weak linkages between training supply, end-users and market demands. Curricula are out-dated while attention to work habits and attitudes and competency in English language is not strong.

A serious issue in the tertiary and university education sector is the country's inability to cope with the demand for higher education through public sector universities and higher education institutions due to their limited capacity for enrolment. Additionally, there is a mismatch between higher education provision and labour market demand due to unevenness in university curricula and outcome based methods of teaching/learning, and slow growth in the labour market able to absorb graduates. Lack of conducive environments for new knowledge generation, discovery and innovation in universities are some other issues.

Inconsistent and contradictory policies and practices are seen across the education sector due to the division of the education portfolio to different subsectors and the lack of communication between the respective authorities. There are poor linkages between sub-sectors (school education, technical and vocational and higher education) and poor sectoral linkages. Non-equitable distribution of investment for education has been caused by variations and inconsistencies in investment among the different sub-sectors of education, changing priorities of education and the absence of a systematic mechanism for resourcing education, especially among the sub-sectors.

2.2. Key Action Recommendations

- a. Ensure a country-wide network of quality pre-primary education service delivery mechanism while providing children from low income households with publicly funded ECCE services.
- b. Establish a better-articulated outcome based curriculum integrating and embedding skills (cognitive and well as socio-emotional) focusing on the underlying objective that all children should be successful learners, confident individuals, responsible citizens and effective contributors.
- c. Improve teacher professionalism, standards and training to use modern teaching-learning methods.
- d. Support systematic reforms in the TVET sector particularly to match training supply with demand by creating strong linkages between training supply end users and market demands.
- e. Diversify and modernize the curriculum of universities and other higher education institutions in order to address present and future demands for social development and local and international labour markets.

ES3. Energy

3.1. Summary

The Sri Lanka Energy Supply scenario has changed vastly over the past 25 years from a predominantly indigenous base to that of a scenario with a very high component of imported fossil fuels. This has posed the twin challenges of a heavy burden on balance of payments and environmental issues arising from burning of fossil fuels. The prime objective of any energy supply system would be to provide energy at least cost to the economy, while meeting environmental and social constraints. The energy utility has striven to meet this long term objective of providing energy at least cost and come out with a plan with a very healthy balance of petroleum fuels, gaseous fuels, coal and all forms of renewable sources. Hence it is of utmost importance to implement the plans -- especially the scientifically derived and robust Long Term Generation Expansion Plan that has already taken into account development of power plants using a mix of energy sources. Delays in implementation of the plan would increase the risks and lead to adverse repercussions in the Power sector in particular (including higher costs and lower reliability). Any changes should be made only after thorough analysis, and not in an ad-hoc manner.

Energy prices should reflect the true cost to the economy properly adjusted to ensure prudence in utility management and any policy objective like eliminating wasteful practices, safeguarding vulnerable groups, protecting the environment, and enhancing industrial and any other growth sectors of the economy that would yield high economic returns. DSM objects should be rationally taken into account with appropriate policy interventions implemented alongside.

The reliability of power supply has to be ensured with regular upgrades of the transmission and distribution infrastructure. Distribution licensees should be made accountable for the losses and in their respective areas while the generation licensees should also be mandated for constant upgrades and efficiency improvements when and where necessary.

Sri Lanka being a signatory to the UN declaration on "Transforming our world: the 2030 Agenda for Sustainable Development" has committed to reduce the carbon emissions by 20% (4% unconditionally and 16% conditionally) as against the Business as Usual Case in the energy sector. The latest draft LTGEP is derived in keeping with the above commitment. However in order to meet these obligations the Power Planners have done vigorous analysis of the power system and concluded that approximately 20% of the energy demand can be met by Renewable energy sources other than major Hydro additions. However this would cost the economy approximately 153 Million USD. If further reductions to GHG emissions are to be done while system stability is not to be compromised, there will be more severe economic burden. For instance if no more Coal development permitted the economic burden would be of the order of 1040 MUS\$ over the planning horizon of 20 years where LNG power plants need to be built to meet the demand. Hence steps should be taken to develop indigenous renewable energy sources such as wind, solar and biomass being aware of the economic burden of 153 MUS\$ and this should be viewed as a means of making the energy supply more independent from imported sources, rather than as a mitigation obligation imposed on us to meet unfair carbon reduction targets. One should be very mindful of the economic burden, and technical issues that are at times difficult to resolve. In any case renewable energy targets should be introduced only after thorough techno-economic and sustainability evaluation.

With rising sector funding needs and increasing debt burden, domestic borrowings to meet operational losses can only be minimized by proper tariff policies, while the external debt burden should be eased through external financing, since Sri Lanka is still a growing economy. However in order to attract foreign investments, economically unsound and technically unproven systems should not be imposed on the utility. Essential investments should be sponsored by the government while ensuring strict financial discipline and proper management of assets in both Petroleum and Power sectors.

High priority should be given to continue the gas explorations in the Mannar basin and other promising areas. This will undoubtedly be a win-win outcome of meeting energy costs more cheaply and also contribution immensely to reduce carbon emissions from burning Coal and/or petroleum fuels. Finding gas deposits would also improve the international creditworthiness of Sri Lanka.

3.2. Key Action Recommendations

- a. Implement rational plans especially the scientifically derived and robust Long Term Generation Expansion Plan
- b. Mobilize funds for sector development through sustainable energy pricing policies and appropriate external financing. Demand management and conservation should be a priority.
- c. Regular upgrades of the transmission and distribution system should take place to ensure adequate power system reliability.
- d. Prudent development of indigenous renewable energy sources such as wind, solar and biomass can significantly improve the security of supply, while reducing carbon emissions.
- e. Offshore gas development in the Mannar basin and elsewhere should have a high priority -- to increase independence from imported energy, reduce foreign exchange costs, and strengthen the creditworthiness of the national economy.

- f. Government must ensure that all energy projects proceed only after inclusive and meaningful consultations with stakeholder communities potentially impacted by their development.

ES4. Health

4.1. Summary

There have been significant achievements in preventive and curative services in the government led health delivery system but many more efforts are needed to fully eradicate a wide range of diseases and address many different persistent and emerging health issues such as non-communicable diseases and other health challenges of an ageing population.

The main strengths of the healthcare system in the past have been its equity, system efficiency, good health outcomes, and relatively low costs for government and households. It afforded the poor protection against financial risk of illness. Most out of pocket expenditure fell on the richer households. However, the pattern is changing with increase of non-communicable diseases.

The main weaknesses arise from under-funding or not rationalizing development priorities such as skewed investment for specialized care, while compromising primary care which can form a wide base for greater coverage if delivery scope changes to address the current needs i.e. hospital services do not meet the demands for services and amenities of discerning individuals who are forced to seek care from private sector institutions. In the long run, this may destabilize the health system and undermine political support for government health services.

The system has also failed to keep pace with modern techniques to manage treatment of chronic non-communicable diseases, with lack of funding hampering re-orientation. Consumer expectations have increased as regards better health care amenities, consumer oriented service approach by staff, and organizational flexibility made possible by technology. This gap too cannot be bridged without the necessary financial support.

4.2. Key Action Recommendations

- a. Establish a hierarchical system that develops the Peripheral Hospitals (with mobile labs) to deliver Primary Health Care, leaving Secondary and Tertiary Care hospitals to deal with complex cases.. In addition these institutions should have facilities for alternative medicine (Ayurveda, Homeopathy, Unani, Siddha).
- b. Establish a supply chain with auditing, accountability and transparency in supplying medicines and equipment to hospitals.
- c. Educate the public on proper sanitation, healthcare standards, avoidance of traffic accidents
- d. Increase trained staff in MOH areas, with suitable remuneration for working in remote areas, to further reduce maternal and infant mortality, and minimize communicable diseases, and reduce the prevalence of NCDs. These centres will add strength to the already existing National Drug, Maternal and Child Health and Tobacco and Alcohol Policies. Provide well trained ambulance crews to deal with transfer of sick patients to specialized units

- e. Set up a digital platform for Electronic Medical Records, develop Public Private Partnerships, initially through its Corporate Social Responsibility Programmes. As a 1st step PPP could be considered for CABG and patients on dialysis.

ES5. Marine Resources

5.1. Summary

Sri Lanka owns an exclusive economic zone of nearly seven times its land area. However, its contribution to GDP is less than two per cent. Oceans are shared by everyone and this free access to ocean resources and services has put strong pressures on marine ecosystems, ranging from overfishing and reckless resource extraction to pollution. About 57 per cent of fish stocks were estimated to be fully exploited by 2009 and the percentage of marine fish stocks that are overexploited and outside their safe biological limits are increasing.

Oceans absorb about 30 per cent of the carbon dioxide produced by humans, and there has been a 26 per cent rise in ocean acidification since the beginning of the industrial revolution. Marine pollution, an overwhelming majority of which comes from land-based sources, is reaching alarming levels, with an average of 13,000 pieces of plastic litter found on every square kilometer of ocean.

Marine research is not considered a priority and there is a lack of interest and investment in this area. Facilities for marine research and explorations are in rudimentary stage and no national institution exists that is fully fledged for ocean research and explorations. Overexploitation, Illegal and harmful fishing methods have led to a dwindling fish resource and destruction to marine environment. There has not been a resource survey for last three decades and no scientific information on sustainable levels of fishing is available despite several attempts to increase the marine fish production.

Irrespective of these threats, the mitigation of marine environmental problems and approaches to sustainable use and development of marine resources have been accorded very low priority. There is growing awareness of the life-supporting role of the oceans and the associated need for concentrating on ocean affairs in the context of overall economic and human development. International cooperation and negotiations are required to use marine resources that meet the needs of future generations. The creation of a comprehensive underlying set of oceanic sustainability indicators would help assess the current status of marine systems, diagnose on-going trends, and provide information for forward-looking and sustainable ocean governance.

The term "Blue Economy" or "Blue Growth" has surged into common policy usage all over the world and Sri Lanka is not an exception. The "blue economy" concept seeks to promote economic growth, social inclusion, and preservation or improvement of livelihoods while ensuring environmental sustainability. At its core, it refers to the decoupling of socioeconomic development through ocean-related sectors and activities from environmental and ecosystems degradation.

5.2. Key Action Recommendations

- a. Establish a state of the art marine research institute with improved infrastructure and human resources to conduct marine research and to develop as a “center of excellence in marine research” which would serve as umbrella organization coordinating and facilitating marine research and sustainable utilization of ocean resources.
- b. Promote environmental friendly fishing gear and provide incentives for environment friendly fishing gear operations.
- c. Increase Marine Protected Area network and provide for effective management of these areas. Improve the fragmentation of state institutions dealing with marine resource management.
- d. Develop fishery harbour infrastructure. Promote underutilized facilities such as Dikkowita Fishery Harbour for economic development.
- e. Restore severely degraded ecosystems, key habitats and conserve important species.
- f. Invest more on marine sector in order to get the maximum return from blue economy, going beyond fisheries and expanding to develop ocean based resources for pharmaceuticals, minerals, responsible tourism, shipping, and renewable energy.
- g. Expand focus on ocean based resources beyond fisheries, to include pharmaceuticals, minerals, responsible tourism, shipping, and renewable energy.

ES6. Transport

6.1. Summary

The transport sector should be integrated with other sectors providing mobility and access to people and goods. Transport should also be seen as means of empowering all sections of society to access resources, opportunities and markets in order to improve productivity and develop new economic activities. It should also be considered as a major provider of employment.

Vehicle imports cost Rs 200 billion annually. Fuel imports cost Rs 300 billion. Road construction costs Rs 200 bn. With less investment for public transport, people are captive to private transport causing many external issues. Access for the poor is diminishing and expensive. Urban and rural environments have depleted due to ad hoc land development, excessive and unregulated transport activity. The current direction is economically, socially and environmentally unsustainable. It should be reversed forthwith.

The Sri Lanka 2030 Vision can be achieved by aligning transport policy to deal with (a) traffic congestion, (b) safety & security concerns, (c) poor cross-border logistics, (d) environmental impacts, (e) poor public transport, (f) lack of modernization and (g) high energy consumption.

Policy implementation will be facilitated by:

- Creating a Standing Committee to ensure compliance with these policies from 2018.
- Assessing future public investments for alignment to sustainable policy actions.
- Amending legislation to align to revised policies and present to Parliament by end of 2018.

6.2. Key Action Recommendations

- a. **Improve access and affordability of transport for all within a sustainable physical environment:** Complete a mobility assessment to fill service gaps by 2030. Special attention to be given to improve access for (a) children, women, the senior citizens and the disabled; (b) remote communities and (c) the poor. By 2025, each city with over 100,000 population to have adequate walkability, cycling and access by public transport modes, while controlling traffic volumes and parking to levels sustainable for the physical and cultural character of the city.
- b. **Protect Lives:** To provide an allocation of 5% of capital investment in the sector for transport safety improvements. Safety and Security in travel, including for women, will be considered a basic right of society.
- c. **Protect the natural environment:** Assess transport infrastructure and services from 2020 based on: a) use of physical resources, b) number of beneficiaries, c) use of renewable energy d) environmental impacts and e) vehicle-km and fuel consumption.
- d. **Improve connections nationally and with the world:** Multi-modal transport & logistics networks to be developed by 2018 with strategic plans to (a) develop domestic aviation, (b) improve international air travel and (c) improve export facilitation and port development.
- e. **Make employment fulfilling and productive:** The GoSL will by 2030 take steps to formalize transport employment and to create decent work conditions. Transport sector to be made a driver of the economy pursued through strategies encouraging related domestic value addition.
- f. **Consultations are critical for major projects:** Such projects will proceed only after consultations with all stakeholder communities likely to be impacted.

ES7. Urban Development and Physical Planning

7.1. Summary

Sri Lanka is aiming to achieve a higher and steady rate of growth in its economy within the forthcoming years and to reach the level of a developed nation by 2030. As an island nation with scarce and constrained land resources, the envisaged economic development will be far from reality unless Sri Lanka opt for a planned physical development. The importance of the National Physical Plan is highlighted in this context.

Economic development, as per the widely adopted conceptualization, is inevitably associated with the urbanization. Even though the population growth is low, the projections based on the available information show that more than seventy percent of Sri Lanka's population will reach the status of 'urban' by 2030, from the present level of nearly forty percent of those who have access to urban facilities and enjoy urban life styles (although only around twenty percent are living in designated urban areas). This gradual transformation results in an increased demand for land, water and other resources, which also highlights the necessity of a planned physical development.

Sri Lanka is one of the few countries in the world that can be proud of having a National Level Plan to guide its physical developments. Yet, the available National Physical Plan which was prepared in 2007, is given less regard due to less awareness among the policy makers as well as the limitations in the plan to address the issues surging from present day socio-economic and political

environment. Having understood the timely requirement, the National Physical Planning Department, as per the mandate given by the Town & Country Planning (Amended) Act of 2000, is in the process of updating the National Physical Plan in order to facilitate the development objectives of the Government. The Plan is formulated on four broad policies:

1. Conservation of the critical land and the related resources along with their unique landscapes.
2. Optimization of the utility of the available resources and the infrastructure
3. Direct the settlement developments into the areas with the highest livability
4. Exploration of the new potentials and the enhancement of the existing.

Based on these policies, the plan addresses the current issues related to land degradation, natural disasters, climate change effects, etc., while meeting the emerging global trends such as the UN initiated Sustainable Development Goals, developments in international trade, fast evolving technology, etc. The strategic proposals in the Plan includes the conservation and the regulated development in the fragile central hills of the island, coastal zone and the other sensitive landscapes, along with the containment of future urban development with higher population concentration in four 'Urban Corridors': extending between Colombo and Trincomalee, Galle and Tissamaharama, Batticaloa and Ampara and Jaffna and Kilinochchi, two 'Metro Regions' in Kandy and Anuradhapura, and nine 'Major Cities'. The future infrastructure developments are expected to adhere to this framework in order to have the best returns on investments and to optimize the returns on current investments. In order to minimize the potential for community tensions arising from such infrastructure plans, consultation with stakeholder communities will be an integral part of the planning process.

7.2. Key Action Recommendations

- a. Head of the State Level intervention to enforce the National Physical Planning Policy
- b. Wider and frequent awareness building among general public of the National Physical Plan and the state of its implementation.
- c. Strengthening Planning and Implementation divisions of the Local Authorities with relevant expertise, technology and the institutional setting.
- d. Strict conformity checks of the compliance of projects to the Local Development Plan in the allocation of funds from national, provincial and local budgets.
- e. Setting up annual and periodic implementation programme within the National Physical Plan.
- f. Consultation with stakeholder communities will be an integral part of the planning process, in order to minimize the potential for community tensions arising from such infrastructure plans.

ES8. Water

8.1. Summary

Sri Lanka is blessed with an abundance of water radially flowing from central hills to plains over 103 river basins. Any of these rivers with excess amounts of water would be diverted to any nearby dry areas by gravity, free from the costs involved with lift irrigation.

Most development projects presently planned in Sri Lanka would not reach their expected targets if the availability of water resource is not properly ascertained. To date, however, a complete national level water resource planning activity is yet to be undertaken to ascertain the current or future demands.

Rainfall patterns in recent past have changed and drought and flood situations are frequently experienced. The "Dry to Wet" gap is increasing, indicating that more drought periods may be expected in the near future. Statistics also show that rainfall received in the Mahaweli Basin has been gradually decreasing over the last few years. This reduction in rainfall is experienced mostly in areas in North - East slopes of central hills, i.e. mainly the North- East and North - Central Provinces. However, the rainfall received in the western slopes, i.e. Sabaragamuwa, Southern Province and Kaluganga, Nilwala and Kelani river basin have shown a considerable increase. Meteorological scientists also predict a reduction in annual rainfall in the long term as a result of global warming, El – Nino, La- Nino and changes in sea current temperature and uncertain flow pattern of under currents.

Optimization of water use in the future should be a matter of high priority. Large scale developments in Mahaweli Basin should be undertaken only after careful and intensive studies that ensure availability of expected water volumes. Any decision on "Transbasin Diversion" would be a very sensitive issue in the near future if studies failed to satisfy the minimum of 30-year water demand in the respective river basin. It is doubtful that the conventional way of ascertaining the "Unit Hydrograph" and "PMF" with 40 or 60-year historical data would further simulate the future rainfall predictions. Alternatively, running a simulation model with last 10-year (or 05) rainfall records with some theoretical extrapolations, would help to understand the variance of results with the changes of present climatic changes in a more realistic manner. It is also prudent to limit transbasin diversion to minimum levels and promote crops that are suitable for cultivation in that respective basin under available water conditions, having considered the uninterrupted demand for other utilities like drinking, power and industrial use. An urgent national priority should be given to address water storage.

8.2. Key Action Recommendations

- a. Initiate a national wide programme to identify suitable areas for small storage ponds and gravity driven "Mini Schemes" with pipe borne water, with the support of Provincial Councils, Water Board and other authorities.
- b. Construct "Micro Bunds" on mountain slopes along the contour to control surface erosion and improve water infiltration and absorption into sub soil strata.
- c. Commence a national level mechanism with the support of Central Environmental Authority to control water pollution.
- d. Commence a programme to restore small irrigations tanks scattered throughout the country.

- e. Launch an island wide awareness programme with the support of respective local authorities to educate best practices in basin management, including excavation control, home garden landscaping, mini agriculture construction of roads etc.

E. EXECUTIVE SUMMARY

ET. CROSS CUTTING THEMES

ET1. Climate Change, Disasters and Air Quality

1.1. Summary

Climate change is attributed to global warming as a result of the enhanced greenhouse effect. The increase of greenhouse gases (GHGs) in the atmosphere is mainly due to anthropogenic activities such as the burning of fossil fuels and deforestation. Enhanced emissions are mainly from power generation, transport, industrial sectors, waste disposal and deforestation.

Sri Lanka's weather and climate has changed and devastating disasters such as heavy rainfall, floods, landslides, droughts and lightning have increased. The drought in 2016 is reported as the worst event in forty years. Subsequently, following the drought was the heavy rainfall resulting in floods and landslides. Besides global warming, malpractices in land use such as clearing of hilly areas for plantations are also a cause for the aggravation of landslides. As a result of such disasters, the agricultural output and the economy of the country is drastically affected. Further, air pollution, especially due to congestion of traffic resulting in increase of emissions has created health impacts and rise in ambient temperature in Kandy Town which is the second largest city next to Colombo.

Sri Lanka has ratified international treaties such as the Paris Agreement and Montreal Protocol which pledge to reduce the emission of GHGs and ozone depleting gases. It has also submitted its Nationally Determined Contributions which provides targets to reduce emissions while adaptation measures will take a high priority. Therefore, implementing actions to fulfil the requirement is an obligation to minimize the frequency of disasters and build a sustainable environment.

Strong policy decisions on importation of vehicles, tax reductions for electric and hybrid vehicles especially on public transport is a necessity. Stringent measures should be taken to implement sustainable land use practices and prevent unsound ad hoc development programmes. Research and development for weather forecasting, developing early warning systems and enhancing social capacity to cope with disasters, is a fundamental need.

1.2. Key Action Recommendations

- a. Adaptation to climate change impacts must have priority, especially to protect the poor and vulnerable.
- b. Deforestation must be reduced, because it aggravates the frequency of disasters such as floods, landslides and droughts
- c. Strong policy decisions, sustainable land use practices and development of early warning systems are urgently needed.
- d. Education and awareness creation among all citizens is a priority, especially at the school level.
- e. Innovative projects need to be developed after careful research to take excess water from southwest to northeast of the country to overcome long term effects of drought.

ET2. Ethics, Values and Citizenship

2.1. Summary

Standards and values in public life, including conduct of professional groups, political and business leaders, public officials and those holding public office, have a wide impact. They are critically important to promote ethical outcomes and responsible exercise of power in a society. Over the years, abuse of power as well as a growing environment of consumerism despite economic deprivation experienced by many sectors of the population, have destroyed institutions and also values of those who hold office. This has also impacted negatively on the public and private sectors, and contributed to a sense of non-involvement by the majority of citizens in critical matters that affect the development of the country. Protests - sometimes violent - do occur, but civil society is often fragmented in its responses. The armed conflict also caused deep polarisation in civil society in regard to responses, including conflict resolution. Partnership of government and civil society in development initiatives was also often replaced by hostility and tension.

Given the diversity of Sri Lanka, mutual recognition is impossible if it is built on religious or ethnic identity. Current practice of state supporting teaching of religion in separate religious schools for different religious groups do not help inter-faith understanding or even tolerance. Segregated school system is also a major issue in this regard. Failure to achieve bilingualism and trilingualism in most parts of the country remains a major obstacle to national reconciliation, despite official recognition of this policy.

Creating a new model of citizenship that recognizes both the rights and responsibilities of holders of public office as duty bearers, and members of the public as engaged citizens of a united Sri Lanka and the beneficiaries of good governance is critical. Citizenship is a concept that only makes sense if it is shared - individuals need to recognize each other as members who belong in the same category. Citizenship in Sri Lanka has to be re-invented as "Sri Lankan", rather than be defined by one of its ethnic or religious components.

2.2. Key Action Recommendations

- a. Instill a sense of common values, ethics and a sense of citizenship in a unitary SL through an effective public communication strategy. This may include religious programmes conducted in temples, kovils, churches and mosques and places where people of different faiths gather. The focus of these programmes should be the common core and humane values that all religions seek to promote. This can help to promote respect for diversity of views and beliefs, tolerance, peaceful conflict resolution, and freedom from violence in our society. This approach may also help to prevent the politicisation of religious or ethnic and other identities, and disruptive and negative messages in the name of religion.
- b. Use education as a tool to bolster citizenship in Sri Lanka. Programmes such as Global citizenship education (GCE) can inspire action, build partnerships, dialogue and cooperation through formal and informal education.
- c. Promote community based approaches that create learning environments that promote links to communities and link learners to real-life experiences (such as exchange programmes, community-based activities, and foreign language studies). The aforementioned platforms help

- to improve citizenship through active and informed participation at the community, local, provincial and national level.
- d. Ensure celebration of diversity through State intervention to incentivize inter-religious and inter-ethnic appreciation. Social and historical education should strive to instill a critical, independent and responsible mentality among young people and promote understanding of the traditions of other communities: learning each other's language; getting to know each other's festivities; exchanging cultural, musical, literary, culinary knowledge etc. Religious teaching, which most young people attend, should be incentivized to reflect positive traits of other communities and faiths. It should help students recognize the shared values that exist across religious identities.
 - e. Ensure recognition of equal rights through State intervention to affirm through all means (including its basic norms like the Constitution), that human rights are a common set of values across all cultures and identities. Civics teaching should have as a cornerstone the understanding of the Bill of Rights in the Constitution, the Universal Declaration of Human Rights, treaties we have ratified and signed on as a State, and customary norms of International law that bind all nations. This should not be merely theoretical but participatory -- students must be able to identify in their daily reality what situations go against the realization of human rights, and should be able to volunteer and engage to obtain peaceful, cooperative, and smart change.

ET3. Gender

3.1. Summary

Gender accounts for the socially constructed meanings assigned to biological sex difference that has often resulted in inequitable outcomes, inequality and discrimination against women in relation to men. It therefore enables an examination of the different impacts on men and women of socially constructed gender attitudes, and gendered institutional practices at the workplace, at home, in the distribution of wealth, income, access to resources, rights, and entitlements.

In Sri Lanka, amongst several issues of concern for women, two critical issues stand out. They are: a) the feminisation of poverty and decades-long gender gaps in access to sustainable livelihoods and employment; and b) the prevalence of violence against women and girls. Both negatively impact on women's individual wellbeing, society, the family unit and the workplace. As such, both require redress for achieving gender equality.

Women's participation in the labour force in Sri Lanka is significantly lower than that of men, and this is indicated by the fact that Sri Lanka's records the 28th largest gender gap in labour force participation worldwide. Of the working age population only 35.9% women participate in the labour market in comparison to nearly 75% of males. This gender gap in the labour force is also commensurate with levels of education: with women's participation increasing at degree level and beyond while the gap widens at secondary school level (GCE 'A' levels and below). A gender wage gap resulting in the inequality of women's income in comparison to men also contributes to women's financial insecurity if not poverty. This wage gap will also affect older women. An expected 17% increase in the 60+ population by 2022, and a female life expectancy of 82.5 years by 2026, will force elderly women with inadequate retirement benefits into jobs in the informal sector, working long hours for pay that is less than younger workers.

In the context of a lack of state policies enabling younger women to enlist in the workforce, including policies on improving women's access to upper secondary and higher education including in science, technology, engineering and mathematics (STEM) subjects, investment to formalize, diversify and develop the household care economy, strong retirement benefits, paternity leave, and effective programmes to change gender inequitable attitudes amongst both families and employers, the low female labour participation rate and concomitant lower income of women will continue.

Violence against women is also a critical issue impacting negatively on women's wellbeing and development due to physical and psychological harm that also results in unproductive economic activity and health costs due to the fallout of both sexual harassment and domestic violence.

3.2. Key Action Recommendations

- a. Recognize and value unpaid care and domestic work by adopting policies to formalize, diversify and develop household care across state, private and public-private partnerships. At the same time, programmes on shared responsibility between men and women within the household should be mainstreamed into educational curriculum.
- b. Promote work life balance for men & women.
- c. Develop policies to enable women access upper secondary and higher education including in STEM subjects, and train women in technical, innovation and leadership skills to bring them into the formal economy at better rates of pay. The development of such skills would also minimize current gender wage gaps.
- d. Develop policies that provide adequate retirement benefits for the elderly and protection against post-retirement labour exploitation in the informal sector.
- e. Introduce a national transport policy that not only focuses on rural-urban connectivity but also ensures zero tolerance of women's sexual harassment in buses and trains.
- f. Reform the law in all relevant areas using experience based on past research and policy, strengthen law enforcement to prevent impunity, and provide access to remedy and relief, especially in the case of violence against women and sexual gender based violence.
- g. Introduce policies to encourage reporting of harassments. Provide human resource training by professionals including health professionals to halt its prevalence at the workplace.

ET4. Governance

4.1. Summary

The end of thirty years of armed conflict has afforded Sri Lankans an opportunity to help usher in an era of peace, national progress and development. In the current period of post-armed conflict, there is growing commitment to establish and implement norms of good governance, creating public confidence in the idea that a democratically elected government must ensure the wellbeing of the people, peace progress and development. This vision for peace and progress linked to good governance was one that is considered a clear path to accountability beneficial to all Sri Lankans, irrespective of diversity in race religion political beliefs and other factors.

Certain pillars of good governance have emerged in recent years, including constitutional reform; responding to and eliminating the serious and debilitating impact of corruption in all areas of governance and in society; and institutional reforms to eliminate political interference. These pillars of good governance continue to be valid for a vision of peace, development and progress for 2030. They resonate with the framework required for people centred democratic and accountable governance that can deliver the dividends of conflict free social and economic progress and sustainable development. They also harmonize with international treaties that successive governments of Sri Lanka have ratified, customary international law, and global policy documents adopted by Sri Lanka, including the SDG. However, an entrenched and adversarial political culture in pursuit of what are perceived as conflicting demands of diverse sectors of the population, by political parties and politicians seeking political power and office, has made the development of consensus on a national vision of good governance extremely challenging.

4.2. Key Action Recommendations

- a. Strengthen the rule of law by supporting the creation and establishment of independent and professional institutions that can effectively serve the public, and by creating an understanding among politicians of the importance of such institutions for good governance.
- b. Strengthen good governance strategy and structure that cuts across all levels (e.g. central, provincial and local) of public bodies/agencies, re-defining their scope, re-assigning specific roles, responsibilities and accountabilities, and empowering them with delegated authority independent of political intervention or influence.
- c. Maintain a workplace culture with strong ethics and integrity as part of the governance framework and for good public sector performance. Public sector employees must operate independently with integrity and maintain high standards of ethical conduct to maintain sound decision making processes and ensure community confidence and trust in the public sector.
- d. Ensure clear and transparent relationships between the elected government and the bureaucracy to prevent any undue influence in the administration of public functions and to ensure swift and efficient implementation of government policies and strategies.
- e. Drive performance of the public sector with optimum effectiveness and efficiency, through performance monitoring and evaluation systems and process, both at an individual and organizational level and performance reporting.
- f. Create a culture in which people will be naturally motivated to do the 'right thing, the right way' with loyalty and commitment. Promote and inculcate values such as integrity, trust,

respect, directness, speed and transparency and direct leadership across all levels of public servants.

ET5. Innovation, Technology and Industry

5.1. Summary

Sri Lanka's advance to upper-income status can only be achieved through a qualitative increase in knowledge-intensive economic activity that will yield greater exports and stronger integration with global production networks. Sustainable growth that will cause less strain on the environment will require a phase shift in innovation.

The island will capitalize on its size, diversity and openness to new ideas to create a vibrant innovation eco-system where invention and scaling by local as well as foreign innovators will be encouraged. This will be achieved by fostering an environment wherein user acceptance of product and process innovations can be systematically assessed using modalities such as sample surveys, data analytics, qualitative research and A/B testing conveniently, quickly, and at low cost. The government, by creating a process instead of picking winners, keeps the necessary risk taking where it belongs, in the hands of the innovators. It will, in short, create an "experiment nation."

5.2. Key Action Recommendations

- a. Create the leading test-bed in the region for product and process innovation by incentivizing private firms and non-profit entities to put in place the necessary elements for an innovation test-bed.
- b. Further encourage Sri Lanka's inchoate angel and venture capital financiers and promote provision of incubators and accelerators along with incentives for large companies to create space for innovation.
- c. Create conditions for cross-fertilization of ideas along with a reward system for successful innovators (including, but not limited to, an effective intellectual property system).
- d. Foster mindsets conducive to innovation and larger-than-Sri Lanka thinking through the educational system and media.

ET6. International Relations

6.1. Summary

Sri Lanka continues to conduct its foreign relations in an independent and non-aligned manner, and pursues its foreign policy with the aim to make Sri Lanka safer and more prosperous through beneficial bilateral and multi-stakeholder partnerships.

Given the current domestic and external developments, effectively managing Sri Lanka's foreign relations is critical to the welfare of the State and the people of Sri Lanka. The Global power is transitioning from the west to the east and a maritime super region is envisaged with the Asian Oceans at its centre. The Indian Ocean, the foremost theatre of this transition, has emerged as one

of the world's busiest and most critical trade corridors which poses both challenges and opportunities for Sri Lanka. The flexibility and manoeuvrability that it affords must be utilized to determine an effective regional order that benefits Sri Lanka and meets the needs of all countries.

With the emergence of new phenomena such as the Islamic State (IS), and Foreign Terrorist Fighters (FTFs), the declaration of the creation of the Al-Qaeda of the Indian Sub-Continent (AQIS) and the widespread use of social media by terrorist and extremist groups, the sharing of information and intelligence among countries has become of paramount importance. The Government continues to support related internal stakeholders to connect with other nations on these critical issues in order to find solutions for mutual benefit. A Draft Legal Framework for Counter Terrorism Act consistent with international human rights Norms and Standards is already under consideration.

6.2. Key Action Recommendations

- a. Maximise Sri Lanka's geostrategic potential to serve as an emerging transhipment and logistics hub as well as a commercial hub connecting different regions.
- b. Vigorously pursue economic diplomacy initiatives to bolster the economy, enhance development activities and attract foreign investors and traders to the country, taking advantage of the positive international focus on Sri Lanka.
- c. Promote Indian Ocean based regional cooperation as a priority in Sri Lanka Foreign Policy. The country's active role in IORA is aimed to ensure maritime safety and security, protection of ocean related resources, freedom of navigation and to reap the benefits of Blue Economy.
- d. Provide better and more efficient Consular Services for the protection and the advancement of the welfare of Sri Lankans abroad as well as to minimize document forgeries often committed in the past by human traffickers and people smugglers.
- e. Further focus on facilitating negotiations related to the fishermen issue while countering misinformation propagated by certain diaspora elements through think-tank intervention by promoting Sri Lanka's image through media and practice of public diplomacy.
- f. Advocate for climate change mitigation and adherence to the Paris Climate Accord commitments as a cornerstone of foreign policy. Sri Lanka has moral authority on this issue as a low CO₂ emitter that is being adversely impacted by climate change.
- g. Take a more pro-active role on the international stage and at the United Nations in keeping with independent Sri Lanka's traditional leadership role in the G-77, transitioning from a country under scrutiny by the international community to a global role model on human rights and reconciliation.

ET7. Poverty and Inequality

7.1. Summary

Sri Lanka claims an impressive record of declining absolute poverty marked by a 6.7 per cent as the proportion of the poor out of the total population (head count ratio) and 1.9 per cent of the population in extreme poverty in global poverty measure of US\$ 1.99 a day. This status, however, would not reflect the per cent of the near poor population who suffer from other forms of poverty including vulnerability to shocks of disaster, less access to the quality of minimum desired access to health, education, shelter, income through decent employment, investment capital on effective terms, fairness in equal treatment to be heard, to security and justice. These forms of poverty may affect mostly the bottom 40 per cent of the population but the social depravation, unrest, high suicidal rates, subjugation to corruption, extortion, theft, thuggery, crime, increasing and widespread addiction to alcohol, drugs and violence affect the whole population and social stability of the country.

The income inequality reflected in the 52.6 per cent of the total household income going to the richest 20 per cent of the households while the poorest 20 per cent households' share is 4.5 per cent and the regional disparities of the head count ratio of 1.4 in Colombo district and 28.8 per cent in Mullaitivu district indicate the forms of relative poverty to exist in all districts. This fact calls for attention for the national vision to reach the SDG goal of halving all forms of poverty by the year 2030.

The factors causing the poverty experienced by the bottom 40 per cent of the population are linked to structural issues, and socio political and institutional issues. These factors include: (i) growth in sectors that benefit fewer poor people; (ii) inadequate policy advocacy to support activities that benefit the poor; (iii) less access to capital, technologies and extensions on innovations for the poor and the near poor (iv) High perceived opportunity cost of innovations preventing adoption by the poor; (V) Inadequate social protection for the physically and mentally handicapped crippling income earning by the affected households; (vi) Absence of legally recognized local economic and social institutions for communities to get organized to collectively use resources for growth; (vii) Absence of partnerships and networking among sectors for growth.

The impact of the factors causing poverty is indicated in low inclusive growth and benefits being grabbed by the better off increasing inequalities, lost opportunities for people to engage in production, consumption and trade with better income generation and distribution and slow process of citizen engagement in governance and consensus on issues of national interest.

7.2. Key Action Recommendations

- a. Ensure macroeconomic adjustments favour micro economic interventions at local level for inclusive growth, with gender and youth specific components.
- b. Mobilize partnerships among individuals and enterprise of production sectors from divisional through provincial to national levels, improving supply/value chains of growth potential products and services benefiting the poor with supply side inputs on demand driven processes.
- c. Ensure public, private and peoples sector agencies responding to the national call to declare the space and modalities for poverty reduction in their programs to contribute towards the

national goal of poverty free Sri Lanka by 2030 and calling upon every individual citizen and enterprise to relate what one is doing to the vision 2030 to first for one's own benefit and for the collective benefit of all.

- d. Launch and regularly refresh a countrywide campaign of citizen engagement in public affairs with priority to poorer communities and lagging areas mainstreaming community self-managed development approach.
- e. Promote inclusive and accountable community institutions practicing principles of good governance and ethics as platforms for convergence of services from various programs directly focusing on the poor and the disadvantaged to overcome poverty and inequality.
- f. Develop and implement gender specific programmes targeting poor women in particular for skills training leading to employment.
- g. Adopt special measures to empower the poorest and most vulnerable members of society to find sustainable livelihoods (Note the 2018 budget is already doing this), including female headed households affected by conflict and persons with disabilities.

ET8. Reconciliation, Security and Peace

8.1. Summary

Reconciliation is a complex process requiring strong political will and a mix of cross-sectoral interventions to succeed. To launch, entrench and then solidify a national reconciliation process a generation or more of effort, extending across successive Government mandates, will be required.

The Government's National Reconciliation Policy, adopted by the Cabinet of Ministers in May 2017, sets the framework and principles to guide this effort. The groundwork, that sets the stage for this policy of reconciliation to take hold, and to be perceived as credible by all communities, will be laid by the comprehensive and inter-connected elements of constitutional reform, reconciliation and transitional justice, all of which have specific goals and institutional leads to see them through that are well under way, but far from accomplished. These targeted efforts must be accompanied by respect for the rule of law, human rights, good governance and effective economic policy, without which targeted reconciliation efforts are likely to crumble.

The focus areas that have been identified to diminish root causes of conflict and to foster reconciliation in the medium and long-term are: Combating Youth Unemployment; Institutional Reform for more efficient, inclusive, transparent and equitable state institutions; Promoting Gender Equality; Land returns and land use; and Language rights.

In the new security environment, Sri Lanka must confront a host of non-traditional, emerging security threats whilst simultaneously dealing with security issues that stem from being a post-conflict society. Therefore, the new security architecture must go beyond protecting the physical boundaries of the state or the physical security of its citizens, and the definition of national security that Sri Lanka utilizes should be changed.

Security and reconciliation set the stage for peace, which is essential for sustainable development. Security which springs from within, and is based on mutual trust, respect and common values and ethics, helps to build a strong and resilient society. It is better than security that is externally imposed, which can be misused by authorities and generates fear and mistrust. At the same time

some proportionate level of national security based on a judicious mix of civil and military authority is required to preserve basic law and order, and to protect against external attacks, cyber threats, predatory and criminal elements in society, and unexpected contingencies and disasters.

Key security issues include: Terrorism and Radicalization – youth, religious and ethnic grievances leading to radicalization; Maritime security – protecting our maritime border as an island nation; Economic security – protecting our critical economic infrastructure; Cyber security – defending against cyber threats to our critical infrastructure; Health security – reducing the incidents of infectious diseases and viruses; Environmental security – mitigating natural and man-made disasters in the country and reducing the incidence of climate change; Energy security – gaining energy independence and providing sustainable energy security in the future; and Transnational Organized Crime – eradicating the destination and transit routes of Sri Lanka for all forms of trafficking.

8.2. Key Action Recommendations

Reconciliation

- a. Rapidly fulfil key outstanding commitments related to the reconciliation agenda, including the establishment of an effective Office of Missing Persons (OMP), an enhanced reparations system, a Truth and Reconciliation Commission (TRC), and a credible judicial mechanism to prosecute allegations of the most serious crimes committed during the conflict.
- b. Articulate constitutional reforms acceptable to all communities or an alternative political accommodation equally acceptable to all.
- c. Launch a comprehensive Communications Strategy to explain and sell proposed reforms and reconciliation efforts nationally, with full engagement of the President, Prime Minister and all members of Cabinet. Launch programmes to diminish conflict and foster reconciliation in focus areas.
- d. Complete hand-over/restitution of military occupied lands in the North and East. If, on an exceptional basis, some of the land is deemed essential for national security reasons, fair compensation should be paid promptly and clear explanations provided to justify the expropriation, via legal means. Plans for handover of military occupied lands should be transparent, non-discriminatory, and included in the above-mentioned Communications Strategy.
- e. Implement immediate efforts to enhance gender equality in all Government services, particularly at the highest levels.

National Security

- a. Establish a National Security Policy through a participatory mechanism that reflects the multiple security domains that the country is engaged in and the roles of different actors that safeguard our security (i.e. the state, the tri-forces and the new dimension of the citizenry guaranteeing its own security).
- b. Comprehensively implement effective monitoring of Sri Lanka's maritime domain. Existing maritime Intelligence, Surveillance and Reconnaissance (ISR) capability of the networked C3I

(Command, Control, Communications and Intelligence) capacities, naval and aviation capabilities and operational capacities need to be evaluated and enhanced.

- c. Implement a more stringent immigration policy and a more robust border security policy in order to combat Transnational Organized Crime. These policies must be enforced with comprehensive training of border security officers and the Sri Lankan police force.
- d. Establish a *Security Review Provision* on Large Scale Foreign Projects under Sri Lankan law. The proposed *Security Review Provision* should assess the impact of Large Scale Foreign Projects on national security which includes impact on domestic manufacturing and service capacity, the stable operation of the national economy, basic societal order, impact on living conditions etc.
- e. Introduce a national cyber security strategy with inter-agency cooperation and cyber operation command centres to build Sri Lanka's cyber defence infrastructure. An inter-agency cyber task force with relevant government and private sector institutions should implement this cyber security strategy.

ET9. Youth Trans-generational Perspective

9.1. Summary

The Youth population in Sri Lanka is evenly spread across rural, urban, and estate regions with the latter having the lowest percentage of the three. According to the 2012 Census of Population and Housing data, an estimated 4.92 million of the population (approximately 23 per cent) would be within this age group in mid-2016.

The rate of Youth unemployment as of 2014 is 18.5 per cent. Outdated higher education curricula, inadequate linkages between the higher education system and the private sector, and the resulting mismatch of competencies to the demands of the labour market, prevents the country of the opportunity to productively utilize the demographic dividend of Youth. The mismatch between Sri Lanka's educated Youth and private sector labour demands stems from the fact that a majority of university graduates passing out with Arts related qualifications are unsuitable for private sector employment and hardly cater to private sector demands. Graduates who excel in engineering and medical fields often find employment opportunities outside the country given the lack of opportunity to use advanced skills and knowledge in the local economy. Information Technology (IT) and garment manufacturing sectors are the only sectors that have proven to be globally competitive. However, educational curricula at all stages are far behind in catering to the demands of these sectors or other growth sectors such as eco-tourism and green technology.

The effects of climate change and extreme weather patterns in the country are also having an impact on the Youth in addition to their overall effect on the economy and the well-being of Sri Lankans. Youth employed in the agriculture, plantation, and tourism sectors will be affected by fewer job opportunities and stagnant or decreasing earnings in such a situation.

The Sri Lanka's population remains primarily rural based and engaged in agricultural activities, except in the Western province. Meanwhile, many rural youths migrate to urban areas in search of temporary and permanent employment opportunities. Many find work in the construction industry, as the opportunity arises. They return to agricultural activity as and when needed but do not rely on it as their primary income source, rather, as their source of household food security. These forms

of urban migration are resulting in a lack of permanent and skilled labour in the agricultural sector and an unreliable labour pool in the construction and services sectors.

While the Human Development Report (2014) on Youth and Development in Sri Lanka importantly notes that Sri Lankan Youth have often been the focus of public attention for their violence and political extremism, it also notes that on close analysis, they have also been at the forefront of highlighting some serious flaws in the post-colonial Sri Lankan state, its policy and society. Without proper government leadership, government communication, and inclusiveness in related processes, Youth would be forced to react to symptomatic manifestations of unsustainable development such as unemployment, economic inequality, inadequate disaster response and mitigation measures, and food insecurity.

9.2. Key Action Recommendations:

- a. Provide quality education to youth that leads to learning and skills that is relevant to their lives, and gives them the capacity required for the country's changing labour market. Investment in a skilled, dynamic and empowered Youth begins with an educational curriculum and system that complements and drives such transformation.
- b. Embrace a model of sustainable development and growth that is not contradictory to what science and experience has revealed, to enable the Youth to have a secure future. A circular economy approach to development based on the carrying capacity of eco-systems is proposed as the remedy to this situation.
- c. Provide incentives for retaining youth in the agricultural sector, including promotion of agriculture based entrepreneurship to increase Youth participation and develop the small-scale agricultural business areas.
- d. Encourage the private sector to actively play a role in promoting innovation and in identifying and promoting new technology for youth participation in labour force.
- e. Use the potential of Youth to catalyse the implementation of sustainable development plans of the government.
- f. Ensure that specific measures are adopted to promote the equal participation and compensation of young women in the both the private and public sector economy.

E. EXECUTIVE SUMMARY

EV. 2030 VISION AND SUMMARY

If we successfully implement the key action recommendations (given above), by 2030 Sri Lanka hopes to become a sustainable, upper middle income, Indian Ocean hub with an economy that is prosperous, competitive and advanced; an environment that is green and flourishing; and a society that is inclusive, harmonious, peaceful and just. We will follow the middle path based on balanced inclusive green growth.

Our main focus is on providing a decent quality of life for all, especially the poor and disadvantaged, and meeting minimum standards in the provision of basic services. This is in line with the spirit of the SDG and UN 2030 Agenda which aims to "leave no one behind". Beyond those fundamental goals, we also support a vision in which the latest knowledge, methods and technologies can help Sri Lanka aspire to more advanced standards in every area of sustainable development.

CLUSTERS

EV C1. Economy

It is also imperative that Sri Lanka integrates its economy closely with the global economy through strengthened trade and financial relations to maximize the chances of realizing the set targets. A simultaneous focus on providing adequate safety nets to safeguard the poor and vulnerable will help in ensuing that growth is inclusive, as recognized in Vision 2025. Also essential are reforms in fiscal, trade, investment and labour market policies – as discussed in previous sections – to remove existing impediments to achieving higher rates of economic growth. This will facilitate the next step of making the transition by 2030, to high middle-income status, and becoming an Indian Ocean hub, built on a knowledge-based, highly competitive, social-market economy.

EV C2. Environment

In 2030 with the implementation of sustainable development agenda through SDGs and other national green policies Sri Lanka seeks to enjoy a pollution free, clean and green environment with high quality of life for its people and inclusive green growth. Specific policies and efforts are needed to ensure that green growth is inclusive and that environmental sustainability is not achieved at the expense of greater equity and poverty alleviation. The key areas that need immediate addressing are health, solid waste management, agriculture and transport. The 2020 Vision is to mobilize all groups, including the public sector, private sector and especially school children through awareness, training and motivation, and to initiate all actions as a step towards the 2030 vision.

EV C3. Society

The country need to take full advantage of the changing global policy perspective where social and environmental issues have been recognized as priority areas for national and global interventions. Those issues that have been clearly identified in this document can be addressed effectively only through evidence based public policies relating to taxation, human resource development, in particular R and D, social security, social cohesion, etc. If state interventions are effected through multi-sectoral and multi-stakeholder action, by 2025, the country could become economically developed and equitable, socially cohesive and just and politically more integrated, ensuring greater social equality, peace, just and harmonious. Such conditions would encourage people to live contented lives, without being forced to leave the country looking for more lucrative employment and greener pastures elsewhere.

SECTORS

EV S1. Agriculture and Food

Agriculture can become a much more productive and efficient sector providing affordable nutrition to the populace in a sustainable manner while providing a high standard of living for those engaged in agriculture. Export Agriculture covering both traditional export crops and non-traditional crops such as fruits and vegetables, flowers and foliage can make a significant contribution to the sector if modern technology is used for growing and value addition. For the long term sustainability of the sector a heightened awareness of the potential impacts of technical barriers to trade as well as FTAs is required.

EV S2. Education

In keeping with the vision of Sri Lanka as an upper middle income economy by 2030, the education system should be providing not only a basic standard of quality education for everyone (including adult education), but also high-end educational opportunities for the most gifted students using the latest technology, curricula and teaching methods available in advanced countries. Therefore, the cooperation and commitment of the political leadership, policymakers, technocrats and educators are essential to achieve the expected outcomes of this futuristic agenda proposed for the education sector by 2030.

EV S3. Energy

Increased penetration of renewable energy and distributed electricity generation with customer participation, require careful management of the transmission and distribution network. Implementation of "smart" and sustainable initiatives will complement the renewable energy initiatives in the electricity sector, to facilitate a wide range of distributed generation, smart grid, smart metering and demand management options that are planned.

EV S4. Health

Primary health care would be ensured for all, while high end medical services up to the best international standards would be provided in selected areas. A countrywide National Health Insurance scheme would be established. Public Private Partnerships would become more prevalent. A transparent procurement system would be established, to deliver quality non-consumables and consumables. Electronic medical record keeping would be set up.

EV S5. Marine Resources

Increased scientific knowledge and transfer marine technology, is essential to improve ocean health and to enhance the contribution of the ocean for development. Baseline studies, resource surveys, and exploration of non-living resources are essential. Ocean based ecotourism to be further promoted after setting up all the regulatory mechanisms.

EV S6. Transport

Interventions such as , improved access and affordability of transport, improved safety and efficiency, reducing congestion allow the country to continue at higher trajectory of economic growth that will reduce the cost of mobility by half by 2030 while improving social interactions and reducing environmental impacts.

EV S7. Urban Development and Physical Planning

The National Physical Plan should be adopted as a Broad National Level Policy Guidance for the identification, selection and the implementation of Inter-regional, regional and local level development projects and programmes. The Government may consider priorities that will serve best to the social and economic development as a whole, and the benefits of which will reach the community at large.

EV S8. Water

In the water sector, the main goals of the road map towards the 2030 vision would be to provide access to 'quality drinking water' for every citizen despite climate change, drought or rain; to ensure water for agriculture, including paddy, other food crops and commercial farming; and to provide basic sanitary facilities to all families in rural, estate, and metropolitan areas.

CROSS CUTTING THEMES

EV T1. Climate Change, Disasters & Air Quality

Reduced vulnerability of affected population through appropriate adaption measures. Pollution related health problems will be minimized. Sustainable land use practices, development of early warning systems, increased forest and tree cover will enhance water retention in the soil, improve infiltration, and reduce impacts of disasters.

EV T2. Ethics, Values & Citizenship

An effective public communication strategy will instill common values, ethics and a sense of citizenship in a unitary Sri Lanka. Social and historical education will create an independent and responsible mentality among young people and promote understanding of the traditions of other communities. Recognition of equal rights.

EV T3. Gender

Increase in 60+ aged population by 17 per cent by 2022 while female life expectancy is expected to reach 82.5 years as against 72.3 years for men by 2026. An increase in the fertility rate of women who are 35+ years until 2022 is also projected. Increased financial insecurity, including greater health and long-term care costs. An integrated plan strengthens retirement benefits, re-skills 60+ year old women for better jobs. Programs to train younger women in technical and leadership skills will enable them to enter the formal economy at better rates of pay. The sustainability of a cohesive, ethical society as well as greater economic productivity rests on equal opportunities for all.

EV T4. Governance

A consistent policy framework for good governance by the public sector will help overcome the fundamental problems and ensure effective implementation. Well defined management responsibilities and accountabilities, meaningful strategic plans, programs and action plans, and independent oversight are cornerstones of governance for the public sector. The public sector will be run with optimum effectiveness and efficiency, through performance monitoring and evaluation systems and process, both at an individual and organizational level and performance reporting.

EV T5. Innovation, Technology & Industry

Cross-fertilization of ideas along with a reward system for successful innovators, and successful implementation by 2025 will vault Sri Lanka to the forefront of innovation among lower-middle-income countries in South and South East Asia.

EV T6. International Relations

Work with international organisations and bilateral donor countries will strengthen & expand relationship to secure financial and technical support, for development. By pursuing economic diplomacy initiatives to bolster the economy, development activities will be enhanced while attracting foreign investors and traders to the country, taking advantage of the positive international focus on Sri Lanka.

EV T7. Poverty & Inequality

Inclusive, accountable and formally organized community institutions will be active in managing investments for increasing income. Countrywide civic education campaign mainly focused on the communities undertaking community managed development will have coverage completed through specifically identified training institutions involving local government.

EV T8. Reconciliation, Security and Peace

Secretariat for the Coordination of Reconciliation Mechanisms will have supported the establishment of key transitional justice mechanisms. Policies and Action Plans, in addition to the National Reconciliation Policy will address issues such as violence against women, empowering female headed households, women's entrepreneurship development, and institutionalizing gender mainstreaming. A dynamic security model will be developed for Sri Lanka that can evolve with the trajectory of the threats facing our nation.

EV T9. Youth Trans-generational Perspective

Government actions and interventions based on sectoral national strategies aligned to creating a circular national economy based on the carrying capacity of Sri Lanka's eco-systems. Adopting an eco-systems based approach will allow prudent, efficient, and strategic use of Sri Lanka's natural resources that can guarantee inter-generational equity.

I - INTRODUCTION AND OVERVIEW

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I1. BACKGROUND

At the 1992 Earth Summit in Rio, the world community adopted Agenda 21, containing over 2,500 wide-ranging recommendations for sustainable development (SD), as well as the UN Framework Convention on Climate Change (UNFCCC). Ten years after, at the 2002 Johannesburg World Summit on Sustainable Development (WSSD), world leaders adopted follow-up proposals, including endorsement of the 8 Millennium Development Goals (MDG) launched in 2000. Twenty years later, at the 2012 Rio+20 Earth Summit, nations agreed to work towards a broad-ranging post-2015 agenda. This process eventually led to the universal acceptance of the 17 sustainable development goals (SDG) and 2030 Agenda by all UN member states, in 2015. Within this framework, all countries are expected to set out their vision for 2030, and to submit annual national reports on progress towards the SDG.

The Sri Lanka National 2030 Vision, is a strategic document that seeks to interpret and flesh out the vision which HE President Maithripala Sirisena outlined on 2 January 2017, when he gave the mandate to a Presidential Expert Committee (PEC) to prepare such a report. In that vision, by 2030 Sri Lanka hopes to become a sustainable, upper middle income nation with an economy that is prosperous, competitive and advanced, an environment that is green and flourishing, and a society that is inclusive, harmonious, peaceful and just. Expanding on the President's vision, this report also sets out a practical pathway to reach such a sustainable future by 2030, including sustainability perspectives in the intermediate years 2020 and 2025. The contributors to this report (Annex A), including PEC members (Annex B) and others, are fully conversant with the range of sustainable development topics. They have followed an inclusive process in preparing the report, consulting a wide range of professional peers. In the next stage, we recommend even wider systematic countrywide consultation of all relevant stakeholders, thereby ensuring wide ownership of the emerging path towards the vision of Sri Lanka in 2030.

² Writing Team: Mohan Munasinghe (Leader) and PEC

I. INTRODUCTION AND OVERVIEW

12. SCOPE AND STRUCTURE

The PEC report seeks to set out Sri Lanka's current country profile and status, key issues and opportunities relating to sustainable development, future priorities, and new initiatives and options to achieve ambitious goals by 2030. Because the long term future is uncertain, we will focus on a sustainable path for Sri Lanka (balanced, inclusive green growth or BIGG pathway described below), and identify strategic actions that will help us stay on this path. The way forward is clearest up to 2020, but future adjustments will need to be made heuristically along the way, as unforeseen changes and new facts emerge during the country's progress towards 2025 and 2030. We seek to describe the strategic national sustainable development path in simple and clear language, in order to inform the President and empower the people, while providing guidance to the government, civil society and the business community.

It is also important to set out the limitations imposed by our mandate, and by time and resource constraints.

First, our task was to produce a strategic document, within a one year time frame, focusing on priority sustainable development issues. Therefore, this report is not intended to be a detailed national development plan -- to avoid duplicating the work of other branches of Government who are already carrying out that task. We use existing national, sub-national, sectoral and other plans and data, fitted within a consistent and comprehensive long term conceptual framework.

Second, some of those other planning documents are not necessarily fully consistent with the BIGG path we propose. It is not within the PEC's mandate to revise those plans, but our key recommendations provide guidance on how other national, sub-national and sectoral plans may be brought into alignment within the BIGG path. Such detailed plans and policies will need to be updated and revised to help us achieve the 2030 vision, by transforming our values, mindsets, institutions, behaviours, processes, methods, tools, technologies, projects, and policies. The transformation processes required within the government bureaucracy, civil society, business and industry, also need to be worked out through inclusive consultations.

Third, we have not been tasked specifically with implementation. However, the lack of success in executing past strategies and policies obliges us to put down some ideas on whether such past failures are due to flaws in the strategies and policies themselves, constant changes in policy by successive governments, inadequate implementation frameworks, bureaucratic bottlenecks, lack of accountability, skills limitations, poor resource deployment, or other related factors. Our report identifies ongoing and future policies and plans, and recommends policies and measures to improve implementation.

Fourth, we use a simple baseline projection, without extensive macro-scenario analysis. Our base case assumes a 5-6% GNP growth rate and 1% population growth rate up to 2030, and our results are robust over a range of values around this baseline. Furthermore, some key scenarios are explored at the sector level (eg., worst case disasters affecting agriculture), to provide strategic guidance on risk management.

The report is structured as follows. In the rest of Part I, we explain the fundamental aspects of sustainable development. Next we describe how this complex topic is interpreted in the Sri Lankan context, by breaking it down in terms of three broad categories:

C - Economic, Social and Environmental Clusters (or Dimensions).

S - Sectors

T - Cross-cutting Themes

The process of integration across the clusters, sectors and themes is described.

Next, Part C explains the cluster viewpoint from the economic, social and environmental dimensions of sustainable development. Part S sets out the sectoral analyses, and Part T links in the cross-cutting themes. Within these parts, the respective sections covering each cluster, sector and theme, describe the current status, the main issues and challenges, potential remedies and benefits, and the likely future status. The main recommendations and conclusions are presented in Part R. The final part contains the annexes and bibliography.

I. INTRODUCTION AND OVERVIEW

I3. SUSTAINABLE DEVELOPMENT VISION AND BALANCED INCLUSIVE GREEN GROWTH (BIGG) PATH

To elucidate the visioning process, the key elements of sustainable development (SD) are explained in Box I.1, based on harmonizing the economic, social and environmental dimensions of the SD triangle. The balanced inclusive green growth (BIGG) pathway to achieve such a vision is also described in the Box. Expanding on the President's vision, by 2030 Sri Lanka should aim to become a world leader on the practical BIGG path to sustainable development, pursuing a holistic approach needed to achieve:

1. A thriving and dynamic economy providing a high quality of life, that is resource-efficient, advanced, stable, and resilient to shocks, while respecting critical environmental and social sustainability constraints;
2. A green environment that builds on Sri Lankan's traditional respect for nature, and keeps our resource use and ecological footprint within the sustainable bio-capacity of the country;
3. A society that enables us to meet the basic needs of all people (especially food, water and energy, as well as health, education, shelter, livelihoods, etc. for the poor and vulnerable), while encouraging peace, harmony, reconciliation, inclusion, social justice and security.

The SDG, appropriately prioritized to suit Sri Lankan needs, may be used as a helpful monitoring framework for forward progress. Work is ongoing on specific SDG³, but it will take some time to identify all the relevant indicators and targets.

Following the Sri Lankan tradition of **the middle path**, we are working towards a people-oriented and open socio-economic system, which is based on democratic and pluralistic institutions; able to protect our unique values, heritage and environment; and built on respect for freedom, justice, equal opportunities, and human rights. Strengthening ethical values and behaviours is essential (see Box I.1). Inspired by the country's rich socio-cultural past, the three major groups (government, private sector, and civil society), need to be disciplined enough to play balanced, cooperative and effective roles within this framework – working through public, private, people partnerships (4Ps).

³ Ministry of SD and Wildlife, National SDG report Card, Dec. 2017.

Box I.1. Elements of sustainable development, the balanced inclusive green growth (BIGG) pathway, and ethical values.

Principles of Sustainable Development

The term sustainable development (SD) was first used in the report of the World Commission on Sustainable Development, in 1987 (WCED, 1987). Building on this base, the ***Sustainomics*** framework originally proposed by Sri Lanka at the 1992 Earth Summit in Rio de Janeiro, established as its first principle, **harmonizing the sustainable development triangle** (Figure BI.1.1) -- consisting of the key economic, social and environmental dimensions. This approach was widely accepted and applied, culminating in the 17 sustainable development goals (SDG) and 2030 Agenda universally adopted in 2015.

Figure BI.1.1. Sustainable development triangle and interconnections among the three dimensions



Source: M. Munasinghe, 1992, Environmental Economics and Sustainable Development, Paper presented at the 1992 Earth Summit, Rio De Janeiro, and reproduced as Environment Paper No.3, The World Bank, Washington DC

Harmonizing the diverse goals embodied in the SD triangle is vital. The economy is geared towards improving human welfare, primarily through increases in the consumption of material goods and services. The environmental dimension focuses on protection of the integrity and resilience of natural systems. The social aspects emphasize the fulfillment of individual and group aspirations, and the enrichment of human relationships. Pressing national problems like poverty, inequality, hunger, illness, environmental harm, conflict, etc. must be addressed within this tri-partite framework. Government, private sector and civil society are the three major stakeholder groups, who must cooperate to achieve SD.

The second principle of Sustainomics is also relevant for Sri Lanka, because it seeks to **make development more sustainable**, by empowering immediate action at all levels: individual, community, city, firms, and national. This step-by-step approach is more practical, because it is easier to first identify the many obviously unsustainable activities in our everyday life and remedy them now (like saving energy or water, recycling waste, planting trees, promoting reconciliation and harmony, etc.). The third principle seeks to **transcend barriers within our minds**, through

innovation and fresh ideas – strengthening sustainable values, multi-disciplinary analysis, a global viewpoint, long term thinking, cross-stakeholder cooperation, etc. The final principle encourages urgent **practical implementation** using existing methods and tools

Balanced Inclusive Green Growth (BIGG) Pathway

Post-1992, SD practitioners had to address the difficult problem of integrating the diverse economic, social and environmental approaches to sustainability within a single practical integrated framework. The Sustainomics framework adopted a two stage process to address this issue (Munasinghe, 1992):

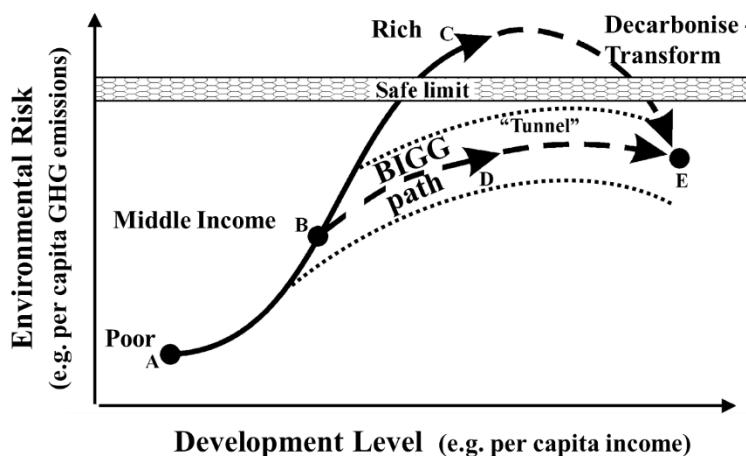
1. First identifying a “**Green Growth**” (**GG**) path, that integrates just the economic and environmental dimensions by using tools like environmental-economic valuation, etc., while keeping the social focus on poverty-inequality;
2. Second, transforming Green Growth into a “**Balanced Inclusive Green Growth**” (**BIGG**) pathway by incorporating the social dimension into the **GG** path -- through participative, pro-poor policies.

The BIGG path is highly relevant to Sri Lanka, in its search to provide all citizens a decent quality of life in a harmonious society, without overusing its natural resources. Figure BI.1.2 illustrates this approach, by showing the stylized curve of environmental risk against economic development, using the example of carbon (GHG) emissions. Rich nations are at point C (high GHG emissions and high GNP per capita), poor nations are at point A (low carbon emissions and low GNP per capita), and intermediate countries like Sri Lanka are at point B.

Desirable sustainable development paths vary by country type:

- Industrial countries (already exceeding safe limits) should reduce GHG emissions and follow the future green growth path CE, by restructuring their development patterns to delink emissions from economic growth;
- Middle income, emerging and poor economies could adopt innovative policies to seek the balanced inclusive green growth “tunnel” through BDE (below safe limits), by learning from past experiences of the industrialized world and technological leapfrogging. Poor developing countries will need technical and financial assistance.

Figure BI.1.2. Environment-Economy trade-off along the development path, and Sri Lanka’s Balanced Inclusive Green Growth (BIGG) Tunnel path to sustainable development.



Source: Adapted from M.Munasinghe (1995) "Making Growth More Sustainable," Ecological Econ., 15:121-4

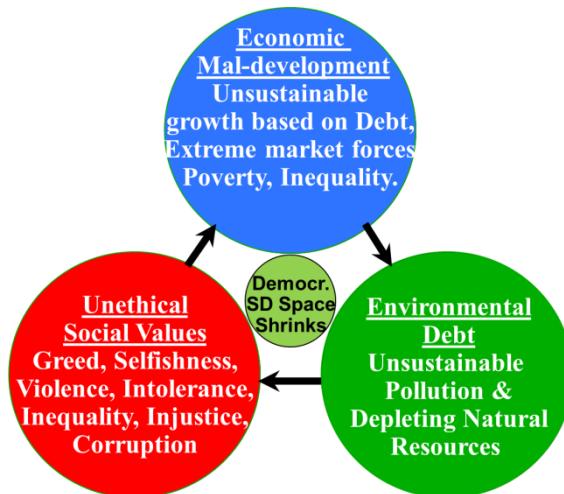
Since the rich account for over 80% of consumption and pollution worldwide, even modest reductions in their consumption can effectively lower the environmental burden and free up resources to raise poorer peoples' living standards.

In Sri Lanka, we are seeking a generic **green growth** path that applies to all forms of natural resource use – especially energy, food, water, minerals, etc. This **green growth** path must be transformed into a **balanced inclusive green growth (BIGG)** path, by incorporating pro-poor, participative measures.

Key Role of Sustainable Values

It is encouraging to know that immediate steps can be taken towards SD, based on existing knowledge. However, more fundamental changes in values and ethics will be needed in the longer term, to achieve our ambitious 2030 vision. This is because unfortunately, what prevails in Sri Lanka and the world today is the *unsustainable triangle* driven by undesirable values -- see Figure BI.1.3.

Figure BI.1.3. Wrong social values drive unsustainable development



Source: adapted from M. Munasinghe, 1992, Environmental Economics and Sustainable Development, Paper presented at 1992 Earth Summit, Rio De Janeiro. Issued as Environment Paper No.3, World Bank, Wash. DC

Unethical social values that are based on greed, selfishness, corruption, inequality, violence, injustice, and intolerance have led to economic mal-development, which focuses unduly on material growth based on unsustainable debt, waste, and excessive consumption by the elite who ignore the miserable plight of the poor. In turn, this has built up an enormous environmental debt due to growing pollution and the depletion of natural resources. To complete the vicious cycle, scarcities of natural resources will continue to fuel social conflicts and encourage further unethical behaviour. This process shrinks the democratic space required for sustainable development to thrive. To achieve long term sustainable development in 2030, it is important to break this unsustainable cycle, by inculcating ethical, sustainable values in our citizens, starting from a very early age. Government, business and civil society all have crucial, cooperative roles to play in this process.

Source: M. Munasinghe (1992, 2009).

I. INTRODUCTION AND OVERVIEW

II. STRUCTURAL BREAKDOWN AND INTEGRATION PROCESS

Sustainable development (SD) is a complex and often misunderstood subject. In order to analyze the issues and identify practical solutions, it is necessary to break down the SD process into several categories. While many such breakdown categories have been proposed, we have selected the following, for convenience:

C - Economic, Social and Environmental Clusters (or Dimensions).

S - Major Sectors

T - Key Cross-cutting Themes

Details of these three broad categories and the process of analytical integration are provided in Figure I.1. The three clusters or dimensions are represented by the vertical columns. We begin by identifying the key issues in each dimension, and then proceed to the first level of integration where the impacts of those issues across all three clusters are analyzed. Next, the main sectors are set out in first set of rows, and their intersection with the three dimensions show how the second level of integration is carried out. Finally, the key cross-cutting themes are represented by another tier of rows intersecting the columns, and also interlinking with the sectors -- to achieve the third level of integration.

Figure I.1 Integration Matrix.

		Clusters		
		Economy	Environment	Society
Leaders		Saman Kelegama & Dushni Weerakoon	Hemanthi Ranasinghe & W.L. Sumathipala	Siri Hettige & Savithri Gunesekera
Sectors		Amal Kumarage		
Transport		Pani Gooneratne		
Health		Shavi Fernando		
Energy		Anura Ekanayake		
Agric-Food		S R K Aruppola		
Water Resources	3b	Madhura Wehella		
Education		Jagath Munasinghe		
Urban & Physical Planning		Kamal Ranatunge		
Marine & Fisheries				
Cross Cutting Themes		Neloufer de Mel		
Gender		G.Batuwitage, U.Fernando		
Poverty & Inequality		Rohan Samarajeewa		
Innovation, Industry & Tech		W L Sumathipala		
Climate/Disasters/Air Quality		Mano Titawela		
Reconciliation & Harmony		Kishu Gomes		
Partnerships & Impl.		Savithri Gunesekera		
Governance & Institutions		A. Tilakaratne		
Citizenship, Values, Eth. & Behav.		A. Azeez		
International Relations				

Beyond the strategic integration adopted in the PEC report, more systematic and detailed integration processes will be needed, when the key recommendations in this report are elaborated within other specific national, sub-national and sectoral plans that will be developed under the broad framework of the balanced inclusive green growth (BIGG) pathway. As the governance structure evolves with the expected constitutional reforms, particular attention will need to be paid to vertical integration of sustainable development planning, linking the central (national), provincial and local levels.

I. INTRODUCTION AND OVERVIEW

15. SRI LANKA - BRIEF OVERVIEW

Sri Lanka's land area covers 65,610 km², and its maritime waters extend up to 489,000 km². The Exclusive Economic Zone (EE) of the country covers an area of 437,000 sq.km. The central mountainous region, which rises to an elevation of 2,524 metres, is the source of the country's major rivers. The mean annual rainfall varies from below 1000 mm in the semi-arid parts of the northwest and southeast of the island, to over 5000 mm in the south-western slopes of the central hills. The mean annual temperature ranges from 26°C to 28°C in the coastal areas below 150 m in elevation, and 15°C to 19°C in the hill country (above 1500 m). A wide range of agro-ecological regions is distributed across the country, contributing to a rich bio-diversity. Ecosystems range from rain forest to grass land, rivers, wetlands, fresh water bodies and coastal and marine ecosystems. The country boasts over 3,800 flowering plants of which 23% are endemic, and also inherits a rich faunal diversity with a large proportion of endemic species making Sri Lanka one of the 18 biodiversity hotspots in the world.

The legal and administrative structure of the Democratic Socialist Republic of Sri Lanka is based on its republican constitution. The country is divided into nine provinces for administrative purposes. Power has been devolved to the provinces with the unit of devolution being the Provincial Council comprised of members elected by the voters of each province. The Head of State and Chief Executive is the President elected for a five year term, by universal franchise. The Prime Minister and Cabinet of Ministers are elected through Parliament, which is the main legislative body. The Chief Justice and Supreme Court lead the judicial branch of government. The Constitution also provides for a Constitutional Council and several independent commissions: Election Commission, Public Service Commission, National Police Commission, Human Rights Commission, Commission to Investigate Allegations of Bribery or Corruption, Finance Commission, Delimitation Commission, National Procurement Commission, and Audit Service Commission. These commissions were designed to strengthen the democratic framework of the country and guarantee the independence of key national institutions. There is an ongoing reform process, to further strengthen and improve the constitution.

Sri Lanka's population in the year 2015 was 21 million, and the GDP growth rate in 2015 was 4.8%. Sri Lanka's per capita income has increased quite steadily from US\$ 825 in 1999, to US\$ 897 in 2000, and finally to US\$ 3926 in 2015, despite occasional setbacks (eg., a negative growth of 1.3% in the year 2001 after 5% growth during the previous decade). As a result, Sri Lanka's global economic position moved further up within the lower middle income category. Foreign Direct Investment in Sri Lanka increased by 76 USD Million in the first quarter of 2017, after averaging 134 USD Million per quarter from 2001 until 2017, reaching an all-time high of 636 USD Million in the fourth quarter of 2016, and dipping to a record low of 20 USD Million in the second quarter of 2001. While the contributions of the manufacturing and service sectors to GNP continues to grow, Sri Lanka's economy still remains heavily dependent on natural resources. The contribution to the GNP from the main natural resource dependent sectors such as agriculture, forestry fisheries, mining and quarrying declined from 33% in 1978 to 21% in 2000. Average electricity consumption

per capita increased from 258 Kwh in 2000 to 531 kWh in 2014. The main sources of energy (in 2015) were: Fuel Oil (46%), hydropower (22%), coal (24%), non-conventional renewables (8%).

The legislative framework for the protection of the environment has been initiated in Sri Lanka even before the Stockholm Summit in 1972. Sri Lanka had been implementing national strategies and plans to achieve sustainable economic growth with equitable distribution of income. Nevertheless, some serious anomalies in income distribution have arisen, since more than 25% of the population (about 4 million people) live in poverty. The recent transformation in Sri Lanka from a traditional agricultural based rural economy with a sustainable livelihood to a more diversified and commercialised economy is an indication of country's attempt to move away from heavy dependence on agriculture, in order to solve the growing problems of unemployment and poverty. In the past the government allocated much of its public investment for the construction of dams and irrigation work, expand cultivation area to almost 17 million hectares, establish industry, create infrastructure and expand urban centres to achieve rapid economic growth rates to alleviate poverty. However, these development programmes also triggered degradation and depletion of natural resources. The nexus of continuing poverty, growing environmental damage and the pursuit of economic growth poses complex issues. Key environmental problems include land degradation, air and water pollution, health hazards, and loss of bio-diversity -- which emerged during the past two decades.

World trends continue to influence Sri Lanka's prospects. The global community has made some progress in addressing poverty, but a mere continuation of current development strategies will not suffice to achieve sustainable development. Economic and social progress remains uneven, the global financial crisis has revealed the fragility of progress, and accelerating environmental degradation inflicts increasing costs on societies – especially the poor. The sustainable development agenda will have to respond to a number of economic, social, technological, demographic and environmental megatrends underlying these challenges -- globalization, growing inequalities, demographic shifts and environmental degradation. These trends influence and reinforce each other in myriad ways and pose enormous challenges. Urbanization is proceeding rapidly in developing countries, and globalization and financial integration are perpetuating inequalities, while exposing countries to greater risks of contagion from crises. Food and nutrition as well as energy security is threatened by competing demands on land and water. Most importantly, environmental degradation has reached critical levels. Business as usual is therefore not an option, and sustainable development will require transformative change at the local, national and global levels, as recognized by the universal acceptance of the 17 SDG in 2015.

Sri Lanka will need to respond with agility to take advantage of some recent global developments. First, world trade is changing - conventional world trade and financial flows are lagging, while digital products and services are growing rapidly. Relevant new trading groups are emerging (eg., *ICASA* - India, China, Africa, and Southeast Asia or *BRICS* – Brazil, Russia, India, China and South Africa). Technological change is improving resource use efficiency, but consumer demand growth will make some key natural resources even scarcer.

Second, more disruptive technologies are emerging, including digital (big) data, artificial intelligence, robotics, cloud technology, 3D printing, advanced transport systems, advanced energy technologies, and biotechnology, and their combinations. Consumerism is flourishing, providing cheaper and more varied products, but putting more pressure on the global natural resource base.

Enterprises (both private and public) in Sri Lanka need to become more innovative and competitive as industrial ecosystems evolve through changing networks of products, suppliers, partners, platforms and clients.

Third, Sri Lanka will not be immune to new sources of social conflict sweeping the world. Having recently emerged from a devastating civil war, a high priority must be given to nation building and reconciliation. With the growth of new technologies, criminals have new avenues to harm society (including cybercrime, pedophilia, terrorism, etc.). All stakeholders (government, civil society and business) need to cooperate, both nationally and internationally, to safeguard the nation. Furthermore, poverty and inequality will continue to create social tension, as we transition into a higher middle income economy. Sri Lanka can draw on its unique past experience with social safety nets, to provide all citizens a decent quality of life.

C. CLUSTERS:

**ECONOMY,
ENVIRONMENT,
SOCIETY**

C. CLUSTERS: ECONOMY, ENVIRONMENT, SOCIETY

C. CLUSTERS: ECONOMY, ENVIRONMENT, SOCIETY⁴

C1. CURRENT STATUS

Sri Lanka is a lower middle income country with a recorded per capita GDP of US\$ 3,835 in 2016, and aspires to become a high middle-income country within the next few years. Sri Lanka's economy which grew at an average of 5 percent through three decades of conflict saw a post-war revival in growth to an annual average of 8.5 per cent during 2010-12, before declining to 4.5 percent during 2013-16. Over time, the country has also witnessed a significant drop in overall headcount poverty to 6.7 per cent by 2012/13. Sri Lanka's commendable achievements in human development have also brought notable success in achieving most of the Millennium Development Goals (MDGs)⁵ by 2015. The country is classified in the "High Human Development" category with a Human Development Index (HDI) value of 0.766 and is ranked 73 out of 188 countries⁶. Some geographic and climatic information is provided in Box C1.1.

Box C1.1. Geography, Climate and Natural Resources

Sri Lanka is an island in the Indian Ocean southwest of the Bay of Bengal, between latitudes 5° and 10°N, and longitudes 79° and 82°E. The topography consists mostly of flat to rolling coastal plains, with mountains rising only in the south-central part. The highest point is Pidurutalagala, reaching 2,524 m (8,281 ft) above sea level. The climate is tropical and monsoonal and has moderating effects of the ocean.

Regional differences observed in air temperature over Sri Lanka are mainly due to altitude, rather than to latitude. The mean monthly temperatures differ slightly depending on the seasonal movement of the sun, with some modest influence caused by rainfall. The mean annual temperature in Sri Lanka is manifested largely by homogeneous temperatures in the lowlands and rapidly decreasing temperatures in the highlands. In the lowlands, up to an altitude of 100 m to 150 m, the mean annual temperature varies between 26.5°C to 28.5°C, with an annual temperature of 27.5°C. In the highlands, the temperature falls quickly as the altitude increases. The mean annual temperature of Nuwara Eliya, at 1,800 m sea level, is 15.9°C. The coldest month with respect to mean

⁴ Writing Teams: Overall Integration – Mohan Munasinghe

Economic – Saman Kelegama (Co-Leader), Dushni Weerakoon (Co-Leader), Wimal Nanayakkara, Ashani Abeysekera, Yolanthika Ellepolka

Environmental - Hemanthi Ranasinghe (Co-Leader), W. L. Sumathipala (Co-Leader), Kamal Ranathunga, Sena Peiris, Lakmini Senadheera

Social - Siri Hettige (Co-Leader), Savithri Goonesekere (Co-Leader), S. Colambage, P. Ganeshamurthy, Subhangi Herath

⁵ UNDP -http://www.undp.org/content/undp/en/home/sdgoverview/mdg_goals.html

⁶ UNDP, Human Development Report 2016

monthly temperature is generally January, and the warmest months are April and August.⁷ This relatively unique feature manifesting as sunny beaches to rain forests in the confines of a relatively small geographical area is a tourist attraction.

The rainfall pattern is influenced by monsoon winds from the Indian Ocean and Bay of Bengal. The "wet zone" and some of the windward slopes of the central highlands receive up to 2,500 mm of rain each year, but the leeward slopes in the east and northeast receive little rain. Most of the east, southeast, and northern parts of Sri Lanka comprise the "dry zone", which receives between 1,200 and 1,900 mm of rain annually.

Sri Lanka has 103 rivers, the longest being the Mahaweli River extending 335 km. These waterways give rise to 51 natural waterfalls of 10 m or more in height. In addition to the rivers, major and minor irrigation reservoirs and numerous other wetlands, there are significant ground water resources. Sri Lanka does not have natural lakes but only man-made reservoirs built mainly for irrigation and power generation many centuries ago. The water to land ratio of 3 ha per sq. km. is considered to be one of highest such ratios in the world⁸. Freshwater resources of Sri Lanka comprise 260,000 ha of freshwater bodies made up of 155,000 ha of large, medium and small perennial reservoirs and tanks, 100,000 ha of seasonal tanks and 5000 ha of 'villus' or flood plains scattered all over the country⁹.

Sri Lanka's coastline is 1,585 km long. Sri Lanka claims an Exclusive Economic Zone (EEZ) extending 200 nautical miles, which is approximately 6.7 times the land area of Sri Lanka. The coastline and adjacent waters support highly productive marine ecosystems such as fringing coral reefs and coastal and estuarine seagrass beds. There are 45 estuaries and 40 lagoons and the mangrove ecosystem spans over 7,000 ha. The island is rich in minerals such as ilmenite, feldspar, graphite, silica, kaolin, mica and thorium. Existence of petroleum and gas in the Gulf of Mannar has also been confirmed.

Lying within the Indomalaya eco-zone, Sri Lanka is one of 25 biodiversity hotspots in the world. Compared to its small size, the country has the highest biodiversity density in Asia. A high proportion of the species among its flora and fauna (i.e., 27 per cent of the 3,210 flowering plants and 22 per cent of the mammals) are endemic to the country. Sri Lanka has declared a number of wildlife reserves, which are home to a wide range of native species such as the Asian elephant, leopard, sloth bear, the unique small loris, a variety of deer, the purple-faced langur, the endangered wild boar, porcupines and Indian pangolins.

Sri Lanka, has a very high population density (325 inhabitants per square kilometer as at 2016), which is a significant factor in national planning as Sustainable Development Goals (SDG) 1 to 7 are directly linked to population.

Although Sri Lanka has made considerable progress in many areas, it still faces many economic, social and environmental challenges, which require concerted attention and combined effort in the coming years, to meet the more ambitious Sustainable Development Goals (SDG). The SDG, otherwise known as the Global Goals, are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. These 17 Goals build on the successes of the Millennium Development Goals, while including new areas such as climate change, economic inequality, innovation, sustainable consumption, peace and justice, among other priorities. The

⁷ Steven M Newman and Hemanthi Ranasinghe, 2005, Country Environment Profile of Sri Lanka

⁸MOFE, 2001.

⁹MFOR, 2002.

interlinked nature of SDGs makes separating the goals under its three dimensions somewhat challenging.

Nevertheless, the goals most relevant in achieving economic prosperity can be broadly identified as SDG 1 (no extreme poverty and reduce poverty by half), SDG 2 (zero hunger), SDG 8 (decent work and economic growth), SDG 9 (industry, innovation and infrastructure), SDG 10 (reduce income inequality) and SDG 17 (partnership for the goals). Unless there is a very strong mechanism to coordinate, direct and monitor all activities related the SDGs, achieving SDGs by 2030 could be difficult, mainly due to the crosscutting issues between the goals. As Sri Lanka makes progress towards a high middle income country status, safeguards to ensure equity in development outcomes and that there is no over-exploitation of natural resources and environmental degradation and pollution should be critical policy objectives towards the adoption of sustainable development outcomes.

Sri Lanka faces a large number of environmental concerns which can be categorized as global, regional and local. Impacts of global environmental issues such as climate change and ozone depletion are heavily felt in the country. Issues such as ocean pollution from plastics and hazardous substances too create a significant impact leading to coastal inundation, damage to marine ecosystems, extreme weather conditions causing droughts, floods and high winds impacting on food production, physical infrastructure and social institutions. Local environmental issues of concern include deforestation, soil erosion, depletion of wildlife due to poaching and urbanization, loss of bio diversity, coastal degradation, increasing municipal solid waste generation and industrial waste, haphazard waste disposal, pollution of freshwater resources, urban air pollution and greenhouse gas emissions.

Although the SDG are interconnected, the goals most relevant to the environment can be broadly identified as Goal 6: Clean water and sanitation, Goal 7: Affordable and clean energy, Goal 9: Industry, innovation and infrastructure, Goal 11: Sustainable cities and communities, Goal 12: Responsible consumption and production, Goal 13: Climate action, Goal 14: Life Below Water, and Goal 15: Life on land. Unless there is a very strong mechanism to coordinate, direct and monitor all activities related the SDGs, achieving SDGs by 2030 could be difficult, mainly due to the crosscutting interactions among goals.

From a social perspective, the emerging global consensus on SDG's provides an opportunity to the government and other stakeholders such as the corporate sector, civil society and other institutions to work towards an environmentally sustainable, socially equitable and just future for the people in the country, both at present and the future. Yet, the achievement of SDG's necessitates a judicious balance between economic growth on one hand and social and environmental imperatives on the other. As regards social sustainability, addressing persisting and emerging social issues such as inequality of all forms at national, regional and local levels is critically important. In this report, we discuss the key social concerns. It should be noted at the outset that working towards a Peaceful, harmonious, just and inclusive society is an integral part of the vision for sustainable development in the country. As is well known, SD agenda involves state and non-state measures at national and sub-national levels aimed at reaching SD targets by 2030. On the other hand, attaining such targets needs to be pursued in stages, namely from the short term (2020) through the medium term (2025), to the long term (2030).

Despite certain improvements with regard to social issues dealt with in this report in recent years, there is a great deal to be done in order to reach the targets by 2030. If appropriate policy measures and interventions are pursued, it would be possible to achieve the targets pertaining to social

sector issues discussed in this report during the stipulated period. The measures that need to be taken are also outlined in the text of the report under solutions.

Official data shows a steady decline of **poverty** in recent years due to a multitude of factors but income **inequality** has remained high for more than three decades. The unemployment rate has come down steady and stands around 4.5% of the labour force but a majority of the gainfully employed persons engage in casual and informal sector **employment** characterized by income and employment insecurity and the lack of access to formal social security like retirement benefits. As regards employment, there are other critical issues: the continuing low rate of labour force participation among women and high rate of female unemployment. It is also important to recognize the continuing high rate of employment among people over the retirement age, indicating the economic and social pressure to work due to lack of social **security**. School to work transition among youth remains an important issue that needs to be addressed through sound state policies and other interventions. Many male youths leave school prematurely to find work in the informal sector or overseas and their future prospects remain bleak due to work and other related issues.

Besides income inequality, other forms of social inequality such as horizontal inequality and rural urban disparities continue to create social and political tension that feeds into social and political instability. Perceived and real inequalities among ethno-religious groups lead to agitations and even violence that threatens peace and public order. Persisting issues of governance such as equal and easy access to justice, non-adherence to rule of law, apparent lack of accountability and low efficiency and responsiveness of institutions to issues of great public concern such as pollution, epidemics and corruption, escalating cost of living, and growing indebtedness and the apparent failure of the country to meet obligations under international agreements. While good governance is a critical factor that has to be taken into account as part of the planning and implementation process, ethical issues that affect the performance of professionals and professional organizations are also critically important. The development of ethical codes and their adoption and adherence to by professional bodies can be a critical input to the efforts towards achieving social sector goals.

The issues mentioned above are discussed in more detail below, along with suggestions for remedial action. Since a majority of the SDG's relate to the social sector, Sri Lanka's prospects for reaching the SDG's by 2030 depend a great deal on how we address the range of social sector issues identified and discussed in this draft report. In other words, simply concentrating on economic development goals, hoping that the benefits of economic growth would automatically trickle down to lower social strata and the marginalized, would not be adequate, to say the least.

C. CLUSTERS: ECONOMY, ENVIRONMENT, SOCIETY

C2. ECONOMY: CRITICAL ISSUES, IMPACTS AND SOLUTIONS

2.1. Stabilization

2.1.1. Present Status, Issues and Problem Areas

The Sri Lankan economy demonstrates a high degree of macroeconomic volatility and instability as a result of structural imbalances evident from recurring fiscal and external current account deficits. These signal that a country's national expenditure exceeds its national income, and that its production of tradable goods and services is inadequate. Such economies can be beset by high levels of debt, a heavy reliance on foreign capital inflows, a steady depreciation of its currency and high interest rates.

In order to minimise vulnerability to exogenous shocks and maintain macroeconomic stability – fundamental prerequisites for sustained long-term growth – efforts to achieve both internal and external economic stability have to be considered. Internal stabilization could be achieved by fiscal consolidation efforts and adoption of prudent monetary and exchange rate policies to minimize price instability, high interest rates and rapid depreciation of the exchange rate. Achieving external stability will be helped by a progressive improvement in generating higher export earnings for the economy. This requires reforms aimed to address supply-side rigidities to enhance Sri Lanka's export competitiveness in international markets.

2.1.2. Likely Social and Environmental Impacts

- Macroeconomic instability depresses growth and development, impacting living standards and efforts towards responsible utilization of non-renewable natural resources.
- Symptoms of instability such as high inflation have profound effects on the living standards of the poor more than the rich, leading to social inequities.
- Depressed growth and household incomes inhibits access to basic needs.
- Cuts to expenditures from fiscal pressures can lead to inadequate provision of basic social services as well as inadequate social safety nets for the poor and marginalized in society. This can trigger a variety of social conflicts that hamper economic growth and aggravate social intolerance.
- Economic instability and crises can lead to the neglect of much needed attention on environment and natural resource usage for sustainable development.

- Economic instability can lead to an over emphasis on short-term policy solutions without adequate attention to long-term environment and social issues, to the detriment of sustainable development objectives

2.1.3 Remedies, Measures and Implementation

- Lower fiscal deficits to more sustainable levels through strong revenue generation efforts and rationalization of expenditures.
- Introduce systematic monitoring and evaluation mechanisms for all the public enterprises and development projects and curtail subsidies to public enterprises.
- Progressively reduce fiscal dependence on borrowing to bridge deficit financing needs for debt sustainability.
- Maintain proper coordination between fiscal and monetary policies to achieve price and exchange rate stability and a low interest rate environment
- Create a conducive macroeconomic environment to attract private investment, both local and foreign.
- Expand export diversification of both goods and services exports.

2.2. Debt

2.2.1.Present Status, Issues and Problem Areas

Sri Lanka's debt-to-GDP ratio at nearly 80 per cent is high by emerging market benchmarks. While the overall composition of public debt between domestic and foreign has not altered significantly over recent years, there has been a notable change in external debt composition. The share of non-concessionary external debt has increased from just over 7 per cent in 2006 to 53 percent by 2016. Sri Lanka's graduation to a Middle Income Country (MIC) status in 2010 and the attendant restricted access to foreign grants and concessional financing have driven this process to a large extent as the country struggled to meet its savings-investment gap. Sri Lanka's heavy debt overhang exposes the economy to a debt trap where interest payments on debt contribute to an already high fiscal burden, while exposure to a high volume of foreign debt inhibits exchange rate policy management vis-à-vis fiscal consolidation efforts.

2.2.2.Likely Social and Environmental Impacts

- Excessive government debt has an adverse impact on economic growth as investor confidence is negatively impacted
- Exposure to high levels of foreign debt makes the economy vulnerable to external shocks and limits policy options to stabilize the economy via exchange rate impacts on the debt portfolio
- Domestic government borrowings for debt servicing can crowd out private investment through high interest rates which could discourage new business investments.
- Tax increases to address debt sustainability can impact people's disposable incomes and living standards

- As debt increases, the government will spend more of its budget on interest payments which limits funds available for public investments and other social sector spending
- High levels of debt reduce the government's fiscal space to respond effectively to the more frequent natural disasters and other such emergencies besetting the country.

2.2.3. Remedies, Measures and Implementation

- Improve domestic resource mobilization efforts, particularly government revenue generation through fiscal consolidation efforts to generate a primary surplus
- Shift the debt portfolio towards less risky domestic debt by developing Sri Lanka's capital market
- Enhance debt management practices through stronger institutional set ups and effective economic cost-benefit analysis of public investment projects
- Limit international borrowing for foreign exchange earning ventures, better selection of public investment projects
- Attract more FDI to bridge the savings – investment gap.
- Reduce waste and eliminate corruption
- Promote technological change to increase productivity
- Convert debt to equity where appropriate using transparent mechanisms such as listing in the Colombo Stock Exchange, or through negotiations with strategic partners, preferably via open and competitive processes.

2.3. Inflation

2.3.1. Present Status, Issues and Problem Areas

Price stability and a low inflationary environment provide a better environment to attract private investment and economic growth, and thereby generate employment and higher living standards. Persistent and high expansionary fiscal policy stances have often led to high and volatile rates of inflation in Sri Lanka which discourages private savings and investment. Against a backdrop of low global inflation following the global economic downturn and drop in commodity prices, Sri Lanka too has been successful in maintaining single digit rates of inflation since 2009. These achievements can be reversed as global economic conditions evolve, and the country needs a prudent monetary policy framework to provide long-term price stability. Initiatives by the monetary authorities to move towards an inflation targeting framework that will take cognizance of maintaining price stability within a targeted medium term growth trajectory for the country is expected to provide a consistent and predictable monetary policy framework in the future.

2.3.2. Likely Social and Environment Impacts

- High inflation reduces the real value of money resulting in a deterioration of the purchasing power, especially of the poor.
- Fixed income earners, in particular those reliant on pension payments are adversely affected by inflation.

- High and volatile inflation deters private investments and inhibits a country's growth prospects as a result
- Price instability leads to distortions in an economy and a misallocation of resources
- Unless the exchange rate depreciates accordingly, high domestic inflation weakens export competitiveness vis-à-vis an appreciation of the real exchange rate

2.3.3. Remedies, Measures and Implementation

- Close coordination between monetary and fiscal policies are important to maintain price stability
- Depending on the main drivers of inflation – demand-pull or cost-push – appropriate policy responses should include monetary policy tightening (demand-pull) or addressing supply side constraints to increase output of goods and services (cost-push)
- Price stability should remain the main priority of monetary authorities when setting monetary policy
- Monetary authorities must have a measure of independence to set appropriate policy responses to retain price stability
- Administrative price controls should be a last resort to avoid resource misallocation

2.4. Interest Rates

2.4.1. Present Status, Issues and Problem Areas

In response to the government's high domestic borrowing requirement for deficit financing purposes, the Sri Lankan economy has tended to suffer from high rates of interest that discourage private investment. More recently, with greater reliance on foreign financing, monetary authorities have attempted to lower interest rates to stimulate economic growth. However, this has had unintended consequences in boosting private consumer demand, aggravating macroeconomic imbalances, and leading to frequent balance of payments crises and sharp upward re-adjustments to interest rates. High interest rates and their volatility has adverse impacts on businesses, and particularly on small and medium enterprises where access to finance is long identified as a significant bottleneck. It also hampers financial inclusion of the poor who rely on informal sources of funding to carry out their micro enterprises. Thus, the policy thrust on setting an appropriate interest rate regime should aim to maintain the rate of inflation at a low single digit level, while keeping interest rates sufficiently stable at levels desirable for promoting private investments and for maintaining real positive returns for savers.

2.4.2. Likely Social and Environmental Impacts

- High real rates of interest act as an incentive for households to save.
- In a high and volatile interest rate environment, poorer households may lose out due to low levels of financial literacy.
- Higher costs of borrowing have a negative impact on the cost of living of the poor and the vulnerable.

- Absence of an appropriate safety nets resulting in higher costs of borrowing positions the vulnerable in a precarious situation.
- Higher lending rates may act as a disincentive for the business expansion activities of Micro, Small, and Medium Enterprises (MSMEs) that are the sources of employment of Sri Lanka's large informal sector.
- High interest rates may lead to financial difficulties for the agrarian poor in particular who depend on seasonal agriculture for livelihoods and are disproportionately vulnerable to natural disasters.

2.4.3. Remedies, Measures and Implementation

- Adoption of a prudent monetary policy framework, supported by better fiscal and monetary policy coordination
- Improve access to micro-credit on concessionary terms, and to launch programmes aimed at encouraging the growth of MSMEs.
- Improve the financial literacy of rural/poor populations
- Strengthen financial regulations and oversight of the bank and non-bank financial system in the country to ensure fair treatment to customers
- Improve the efficiency and effectiveness of social safety nets, and national readiness to respond to financial distress of the poor and vulnerable during natural disasters and other such events. In this regard, a Welfare Benefit Board has been established entrusting the responsibility of providing adequate social safety nets for vulnerable segments of the society.

2.5. Foreign Exchange Rate

2.5.1. Present Status, Issues and Problem Areas

The Sri Lankan rupee has been depreciating steadily through the years, reflecting the relatively weak external sector performance with persistent deficits on the external current account. Large trade imbalances have been mitigated to a large extend by inward remittances from Sri Lankan workers abroad. The external sector weaknesses are reflected in relatively thin official reserves position held by the country. The overall impact of the above is that the currency is prone to depreciating pressure and the economy remains highly vulnerable to external shocks that can manifest in balance of payments crisis and sharp currency devaluations. Sri Lanka's stagnant export performance and concerns about the future sustainability of over reliance on worker remittances to shore up the external current account means that the exchange rate performance remains a key concern. Exchange rate movements have become even more critical in view of a greater volume of debt denominated in foreign currencies. As such, any sharp changes in the exchange have a bearing on the country's overall debt-to-GDP ratio. In order to avoid BOP crises and sharp devaluations through untenable exchange rate policies, the adoption of a flexible exchange rate that is permitted to move with underlying economic fundamentals is the most prudent option for Sri Lanka. Such a policy stance also has the added advantage of supporting efforts to improve the country's export competitiveness in international markets.

2.5.2. Likely Social and Environmental Impacts

- An over-valued exchange rate hurts a country's international export competitiveness and thus has adverse impacts on growth and employment generation
- Untenable exchange rate policies and sharp corrections hold important consequences for Sri Lanka's credit worthiness
- An over-valued exchange rate followed by a sudden sharp correction disturbs investor confidence and exporters and could lead to large capital outflows
- By the same token, an under-valued exchange rate can spur excessive demand for exports with attendant implications on over exploitation of natural resources
- An under-valued exchange rate can also contribute to domestic inflationary pressures through higher import prices, hurting poorer households more than the rich

2.5.3. Remedies, Measures and Implementation

- Maintain a stable and competitive exchange rate within a flexible exchange rate policy framework
- Foreign exchange market intervention by monetary authorities in pursuit of exchange rate policy setting should be limited to smoothing out undue volatility in currency
- Export earnings need to be raised through trade and investment policy reforms to shore up Sri Lanka's official reserves and thereby strengthen exchange rate management
- More needs to be done to generate non-debt creating foreign capital inflows, such as FDI, to lower risks of relying on debt instruments to build up official reserves.

2.6. Budget Deficits

2.6.1. Present Status, Issues and Problem Areas

Sri Lanka has historically run expansionary budget deficits in the range of 8-10 percent of GDP on average. In more recent years, there was an improvement in overall fiscal outcomes with a decline in the deficit from 10 percent of GDP in 2009 to 5.7 percent in 2014. After a deterioration in 2015, the fiscal deficit is back at a more sustainable level of 5.9 percent of GDP in 2016, accompanied by a notable improvement in revenue generation. Sustaining revenue reforms are critical to enable necessary public expenditure programmes to be carried out without overt reliance on borrowing. At the same time, expenditure rationalization measures need to be implemented, particularly regarding loss-making state owned enterprises, if limited resources are to be devoted towards critical social sectors such as health, education and provision of adequate social safety nets for the poor, as well as financial support to small entrepreneurs. Such a refocusing of fiscal priorities will become even more urgent as Sri Lanka faces the challenges of a rapidly ageing population.

2.6.2. Likely Social and Environmental Impacts

- Consistently high budget deficits can lead to macroeconomic instability and high debt that lowers investor confidence and long-term growth prospects.

- Recurring high deficits imply lack of flexibility and fiscal space available for public investment that has a bearing on a country's long-term growth and development outlook.
- Continuous fiscal imbalances can mean that critical social sector spending in areas of health and education are neglected, lowering growth and development outcomes for the country
- Governments will be unable to provide adequate social protection for the poor and vulnerable sections of society when functioning under severe fiscal constraints
- Equity impacts of fiscal policy outcomes – be it through taxation or spending policies – tend to be peripheral concerns under tight fiscal conditions, leading to social unrest

2.6.3. Remedies, Measures and Implementation

- Take measures to generate adequate government revenues (like computerizing tax collection – RAMIS, and expanding the taxpayer base), while keeping issues of progressivity in taxation as a key principle.
- Rationalize wasteful expenditures, including poorly targeted transfer and subsidy programmes for poor households.
- Restructure loss making state owned enterprises to improve their financial performance and thereby lower pressures on central government finances.
- Re-examine current spending on sectors such as health and education and align spending to meet emerging epidemiological and labour market challenges, respectively, for sustained economic growth and development
- Provide market based incentives such as tax credits for business investments in R&D and environment-friendly innovations for sustainable development
- Re-examine social protection framework and ensure that the Welfare Benefit Board plays an active role in providing adequate social safety nets for the poor and vulnerable segments of society

2.7. Trade

2.7.1. Present Status, Issues and Problem Areas

The progressive decline in Sri Lanka's export share of GDP from over 30 percent in the mid-1990s to less than 13 percent by 2016 is a serious concern. Whilst the global economic downturn from 2008/09 has undoubtedly had a bearing on lackluster export growth, the fact that Sri Lanka has also lost market share globally in the interim – from 0.08 percent in 2001 to 0.06 percent by 2014 – suggests that the country has also lost out to its competitors in key export products. The country's export sector continues to suffer from both product concentration – in key sectors such as garments and tea – and market concentration to the US and EU. The lack of product diversification over time is also indicative of Sri Lanka's failure to integrate itself into global production networks, which has limited its ability to export value added manufactures. Issues such as relatively higher labour and energy costs vis-à-vis Sri Lanka's competitors, lack of a supportive institutional mechanism to incentivize exports, failure to attract FDI into vital manufacturing product segments, amongst others, are some of the drawbacks faced by exporters. However, if Sri Lanka is to achieve

high and sustainable long-term growth, the country has to depend on generating foreign demand for its goods and services given the limited size of its domestic market.

2.7.2. Likely Social and Environmental Impacts

- A more open trade regime benefits consumers as they will be able to access a wider choice of goods and services, and at cheaper prices in many cases
- Import competition could threaten certain uncompetitive/inefficient domestic industries or classes of jobs – for example in the production of crops such as potatoes, onions and chilies – requiring some assistance to survive
- The accompanying structural transformation of the economy, away from agriculture and towards manufacturing and services, will require the absorption of surplus rural farming labour into productive employment
- Empirical studies generally find no direct detrimental effects of trade on environmental degradation. However, by contributing to economic growth, some indirect environmental effects could occur

2.7.3. Remedies, Measures and Implementation

- Formulate and implement a national trade policy strategy with due consultation with stakeholders. In this regard, it is encouraging to note that a national trade policy has already been formulated by the Ministry of Development Strategies and International Trade.
- Simplify and make the trade system transparent and predictable by limiting the number of rates, exceptions, amalgamating the para-tariffs, streamlining the computation of taxes, passing of WTO consistent trade remedies like anti-dumping, counter-vailing, and safeguard measures
- Adopt a more strategic approach in future trade agreements with India, China and Singapore, whilst addressing short-comings in existing agreements
- Implement the Trade Facilitation Agreement (TFA) including improving the publication and administration of trade related policies, streamline export/import procedures, increase the usage of ICT for trade, improve infrastructure facilities at both the port and airport; extend pre-arrival processing to more products.
- Improve quality assurance system and certification of laboratories in the country
- Provide training and other opportunities to facilitate productive job opportunities in expanding sectors

2.8. Foreign Direct Investment

2.8.1. Present Status, Issues and Problem Areas

Sri Lanka has struggled to raise the volume of FDI inflows despite considerable incentives offered, by way of tax holidays and exemptions. FDI inflows have averaged 1.0-1.5 percent of GDP, well below comparative competitor countries such as Malaysia and Thailand. Even the end of the three-decade long conflict – long identified as one of the most important inhibiting factors to FDI – failed to reverse the poor performance. During 2010-2016, annual FDI inflows averaged 1.1 percent of GDP, with much of it flowing towards real estate, leisure and mixed development projects. Thus, despite several geographic and structural advantages, the anticipated post-conflict surge in FDI inflows has been hindered by turbulence in domestic politics, uncertainties in trade cum investment policies, as well as an abatement of international capital flows into frontier markets. For Sri Lanka to revive its flagging export sector, FDI is vital, not only as a financial flow, but also for related inputs such as knowledge and technology transfer and innovative management and other practices. Moreover, future commercial success, which is critical in Sri Lanka's journey towards an upper middle-income economy, is heavily dependent on attracting high quality investments.

2.8.2. Likely Social and Environmental Impacts

- Steady FDI inflows, especially into the manufacturing sector, can lead to sizeable productivity gains and substantial improvements to standards of workers
- Investment promotion strategies targeting the less developed provinces will help to induce infrastructural developments and generate employment opportunities that will help address regional economic imbalances and inequities.
- FDI through multinational corporations (MNCs) can hold adverse impacts on workers, whereby adequate safeguards on labour standards and pay become important
- Interactions between FDI and the environment are contingent upon the objectives of prospective investors. Authorities should be wary of Sri Lanka falling prey to the "Pollution Haven Hypothesis" where investors from polluting industries choose investment destinations due to less stringent pollution regulations

2.8.3. Remedies, Measures and Implementation

- Formulate a national industrial policy to provide investors a credible and coherent indication of future policy direction, whilst enhancing the effectiveness of BOI as a 'one-stop shop' for foreign investors that offers a range of services
- FDI inflows can be utilized as an agent to reduce environmental degradation by encouraging prospective investors to enhance technology transfers pertaining to green energy
- Domestic wage and labour standard regulations must be modernized and sensibly enforced to ensure that workers are safeguarded even as the country attempts to raise inflows of FDI
- Expand trade ties, especially within the Asian region, to attract more FDI

2.9. Poverty, Inequality and Inclusive Growth

2.9.1. Present Status, Issues and Problem Areas

Although Sri Lanka has made considerable progress in addressing poverty, with Income Poverty (IP) declining from 26.1 percent in 1990/91 to 6.7 percent in 2012/13, there are considerable variations still in incidence of poverty between regions and between socio-economic groups. A considerable proportion of the vulnerable population are also clustered just above the poverty line, suggesting that they face a high risk of slipping into poverty. If, as envisaged in SDG Goal 1, eradicating extreme poverty and reducing all forms and dimensions of poverty are considered, a combination of IP and Multidimensional Poverty (MDP) need to be considered. The latter covers the multidimensional deprivations related to education, health and living conditions that poor people are facing simultaneously. It is estimated that 9.3 percent of the population in Sri Lanka are IP and/or MDP in 2012/13. More than 80 percent of such poor people are living in households headed by 'agricultural and non-agricultural labourers', those engaged in 'skilled agricultural and related activities', and those who are 'unable or too old to work'. Such categories are reflective of household units that are not strong enough to make risky high return investment decisions. The continuing prevalence of income inequality in Sri Lanka is also of concern. The share of household income of the poorest 10 percent has remained less than 2 percent, whilst the share of the richest 10 percent remains at around 38 percent. Thus, despite the progress in poverty reduction much remains to be done for inclusive growth in Sri Lanka, including the absorption of more women into the labour force.

2.9.2. Likely Social and Environmental Impacts

- Persistent income inequality coupled with inadequate access to services (education, health, water and sanitation) or any form of discrimination to the poor could lead to social tensions.
- Variations in poverty levels between sectors, districts or socio-economic groups can lead to social tension and conflicts
- A low female labor force participation rate of around 35 percent compared to 75 percent for men poses significant inequities in access to livelihoods and income
- Nearly 60 percent of the employed are in the informal sector with little or no social security
- Households engaged in agriculture are the most vulnerable to natural disasters, which affect their production and income – a main reason for high incidence of poverty and vulnerability among agriculture communities
- Persistent poverty can push individuals to resort to environmentally harmful activities in order to survive, such as deforestation and the use of improper techniques/ methods in agriculture
- With rapid growth, the more affluent could make a far greater damage to the environment, due to over consumption and/or illicit exploitation of natural resources, large scale deforestation, etc.
- Regional disparities can widen in access to quality education, health, water and sanitation, unless appropriate policies are in place

2.9.3. Remedies, Measures and Implementation

- As more than 80 percent of the poor are in the rural sector and agriculture is the main driving force of the rural economy, promoting sustainable agriculture is the key to reduce rural poverty, end hunger, achieve food security and improve nutrition
- Sufficient attention needs to be given to help farmers increase agricultural productivity by introducing new technology and farming techniques, providing necessary advice through improved extension services and assist rural communities to setup agro based industries, which could create new employment opportunities for rural youth
- Improve infrastructure and marketing facilities, so that the farmers could easily find markets for their produce
- Strengthen inclusive and accountable institutions in communities in order to make full use of new technology and innovations
- Promote public, private and peoples sector partnerships to improve supply and value chains of products, crops and services that would promote domestic consumption as well as exports
- Create more decent employment opportunities for youth in all regions, especially for rural youth and women in general, especially to low income segments.
- Flexible working hours and/or facilitating working from home may be attractive to women, which may help in increasing female labour force participation
- Enhancing social security benefits such as maternity and sick leave and establishment of suitable day-care centers, will also help in increasing female labour force participation
- Encourage establishment of regulatory frameworks for paternity leave, so that men also have more chances of sharing household responsibilities and freeing women to enter the labour force
- Improve access to financial services for the poor, create self- employment opportunities, and support for SMEs
- Need high priority for regional development to address spatial inequalities in economic opportunities
- Ensure precise targeting in social protection programmes

2.10. Structural Adjustment

2.10.1. Present Status, Issues and Problem Areas

Stabilization efforts at the macroeconomic front pertaining to fiscal and monetary policy efforts are typically complemented by structural adjustment initiatives aimed at broader deregulatory reforms in trade, investment, labour, etc. to support medium to long-term growth objectives. For Sri Lanka, having implemented a series of structural reforms in the late 1970s and deregulatory reforms in the 1990s, what remains to be addressed are incremental reforms to address constraints to growth in areas such as labour markets, public sector service delivery, land markets, institutional reforms, etc. Often these are politically difficult reforms to implement in view of short term adjustment costs and, therefore, need to be balanced by countervailing measures to address the

economic distress of potential 'losers' from such reform initiatives. In all, it calls for considerable political capital and acumen to generate public support and consensus for a structural reform programme if it is to be successful. Sri Lanka needs to turn its attention to designing and implementing a structural reform process in order to avoid falling into a 'middle income trap', where a country's growth momentum slows down after a point in the face of supply-side constraints to growth in the form of factor market and institutional weaknesses.

2.10.2. Likely Social and Environmental Impacts

- Lack of progress on structural reforms to improve labour market efficiency, skills development, etc. in the country can have a dampening impact on growth and thereby on the country's development outlook
- Low agricultural productivity in the absence of reforms will worsen urban-rural disparities
- Lack of progress in improving public service delivery in vital sectors such as education and health will lower economic productivity and worsen existing public finance constraints
- Structural reforms can lead to cut backs in household subsidies and other welfare measures.
- Structural reforms, unless managed astutely, can lead to socio-economic tensions and widen existing disparities
- Liberalization of trade and investment must take cognizance of food security, livelihoods and employment of Sri Lanka's rural population which contains the bulk of the poor in the country.

2.10.3. Remedies, Measures and Implementation

- Appropriate sequencing and pacing of reforms to suit Sri Lanka's country-specific socio-economic conditions must be given due emphasis
- Reform initiatives must involve appropriate stakeholder consultations and address concerns of those population groups or employment groups likely to be adversely impacted, at least in the short-term
- Safeguard measures should be incorporated to ensure that the poor benefit positively from the anticipated economic growth.
- Diversify current primary product export basket to value added/processed products and existing destinations to more high end markets
- Divert the investments from price and marketing interventions and input subsidies, towards provision of agricultural extension, agricultural finances, irrigation infrastructures, and R&D , and let the private sector play a bigger role rather than having the government try to manage the sector
- Institutional arrangements such as establishing linkages to connect small-holders to the global value chains; encouraging FDI and PPP in agro-processing
- Ensure precise targeting in social welfare programmes for the neediest
- Increased investments in education and health services focusing on improving the quality and effectiveness in building up the human capital of the poor in the long term.

2.11. Economic Efficiency

2.11.1. Present Status, Issues and Problem Areas

Sri Lanka suffers from economic inefficiency across a broad range of areas. Capital market inefficiency is reflected in a high and increasing Incremental Capital Output Ratio (ICOR)¹⁰ over time from 3.8 to 6.3 during 2010-2015. High labour market inefficiency is evidenced in high redundancy costs (58.5 weeks of salary),¹¹ low female labour force participation (36 percent versus 75 percent for men),¹² and inflexible hiring/firing practices. Goods market inefficiencies stem from high trade tariffs and low and worsening *Doing Business* indicators. Low technological readiness and knowhow (0.8 patent applications per million population),¹³ inefficient government bureaucracy, and market failures have also contributed to high inefficiencies.

Public enterprise inefficiency is a key contributor towards overall economic inefficiencies. As of 2015, of 55 economically significant State Owned Business Enterprises (SOBEs) around 16 incurred significant financial operational losses. The public procurement system shows inefficiencies related to high transaction costs and anti-competitive practices. The number of public sector employees of around 874,395 is notably high (excluding armed forces personnel, employees of semi-govt organizations and their subsidiaries) – a number which has increased by over 39 percent between 2006 and 2016¹⁴. This also contributes to inefficiencies, with many employees lacking the necessary skills for improved productivity. Restructuring state owned entities and rationalizing public sector employment will help address such constraints, but there is significant opposition to such moves.

2.11.2. Likely Social and Environmental Impacts

- Economic inefficiencies mean that factors of production are not allocated to their most productive use (allocational inefficiency), and that goods and services are not produced at the lowest possible cost (production inefficiency), thereby inhibiting the potential for economic growth and improved standards of living
- Inefficient public enterprises bring in financial inefficiencies which are ultimately reflected in higher consumer prices.
- Improved efficiency in public enterprises can lead to equitable distribution of services among different segments of the society. For instance, reforms which included increased private sector participation in the energy sector in 1996 showed increased access to grid electricity.¹⁵ Increased access was also seen after privatization of the telecommunication agencies
- When an economy's focus is limited to efficient private outcomes, (i.e. it fails to take into account social costs and benefits), over consumption and depletion of natural resources occurs. Recent incidents such as the Meethotamulla tragedy, floods caused by monsoons, and increasing levels of environmental pollution are testament to this

¹⁰ The ICOR measures the marginal amount of investment capital necessary for a unit to generate the next unit of production. A low ICOR value indicates that an economy is efficient, implying that the economy needs lower investment for an additional unit of output.

¹¹ World Economic Forum, 2017, *Global Competitiveness Report 2016-2017*.

¹² Department of Census and Statistics, 2017, *Sri Lanka Labour Force Survey: Annual Report 2015*.

¹³ World Economic Forum, 2017, *Global Competitiveness Report 2016-2017*.

¹⁴ Department of Census and Statistics, 2017, *Census of Public and Semi Government Sector Employment 2016*.

¹⁵ ADB, 2015, *Assessment of Power Sector Reforms in Sri Lanka: Country Report*.

2.11.3. Remedies, Measures and Implementation

- Adopt strategies to encourage more female labour force participation, such as the generation of part-time and flexible job opportunities, creation of jobs in rural areas, and changing cultural norms regarding the division of household work. It is important that part-time and flexible job options are offered to both women and men, to enable men to share household responsibilities as well as to avoid the tendency of women being concentrated in potentially lower paying flexible job options
- Reform the Termination of Employment of Workmen Act (TEWA) of 1971, in which the current compensation formula for ‘non-disciplinary’ termination of employment is the third highest in the world (Employers’ Federation of Ceylon, 2009). Such legislation severely impedes the competitiveness of the labour market. Labour is the most flexible factor of production, given that other factors such as land and capital are fixed. It is thus essential to ensure that labour flexibility and mobility is not hindered by stringent rules and regulations.
- Minimize the proliferation of a variety of para-tariffs which significantly raise the costs and complexity of trading
- Improve *Doing Business* indicators, specifically with regard to enforcing contracts, paying taxes, registering property, and getting credit, which could contribute towards lowering the ICOR
- In addition to reducing the amount of investment necessary to generate a given level of production, also focus on attracting the right type of investment
- Adopt strategies to encourage the issuance and enforcement of patents, including enacting new patent laws and strengthening intellectual property rights (IPR) policies
- Continue with ongoing efforts to restructure and/or privatize heavy loss-making SOEs, and appoint managers and directors of SOEs based on merit rather than political patronage
- Include public sector (other than SOEs) reform for improved service delivery and reduced transaction costs, including corruption
- Conduct public awareness campaigns and implement proper pricing schemes for externalities (such as pollution, vehicle, and garbage taxes) to internalize the costs of negative externalities
- Enhance E-governance in public enterprises through resource mobilization and capacity building to increase the efficiency in service delivery and gain cost-efficient solutions for existing operational inefficiencies
- Promote adoption of innovative measures that increase the efficiency of service delivery. For instance in the transport sector, electrification and development of railway networks should be promoted with the involvement of the private sector
- Develop a comprehensive and meaningful framework for recruitments to public enterprises and improve the human resource productivity through an effective capacity building mechanism

2.12. Project Preparation/Evaluation

2.12.1. Present Status, Issues and Problems

The Western Megapolis Development Project is the flagship development initiative of the present government. This is a master plan of investments comprised of several mega projects aimed at transforming the entire Western Province into a metropolitan region by 2030. All governments since independence pushed for similar mega investment projects, such as the Accelerated Mahaweli Development Project and a string of ambitious infrastructure projects in post-war Sri Lanka encompassing expressways and road development, seaports, airports and energy projects. The preparation and evaluation of such projects are critical on two fronts: first, that they pass economic feasibility assessments given the heavy financial costs involved and repayment of loans, especially foreign currency denominated loans on non-concessional terms; second, that environment impact assessments are carried out to safeguard the country's natural resources and ensure sustainable development outcomes. Infrastructure development projects have resulted in both positive and negative outcomes. Learning from past experiences and improving the criteria for selection of projects, systematic evaluation and efficient implementation of them are critically important. The same applies to other non-infrastructure development projects as well. Coordinated action across multiple agencies and ministries remains weak in project planning and implementation.

2.12.2. Likely Social and Environmental Impacts

- Projects are usually aimed at increasing economic welfare of society, by undertaking mandatory Social Impact Assessments (SIAs). However, poor social acceptability observed with regards to certain projects indicates that the existing SIA process is not capable of addressing social concerns fully.
- Poorly planned and selected projects can lead to significant environmental and eco-system damage and/or displacement of communities that leads to social dissension.
- Poorly planned and implemented projects can generate significant financial losses to the country, worsening the debt burden over time.
- Lack of coordination in planning and implementation generates economic inefficiencies and raises the cost burden on the country with little or no economic benefits to the population
- Ineffective institutional mechanisms and safeguards creates loopholes for systemic corruption and malpractices to take hold
- Although Sri Lanka has over three decade's experience of undertaking Environmental Impact Assessment (EIA) procedures, there have been occasions when even approved projects had to be abandoned or delayed due to environmental concerns. Such delays lead to lower economic output in the long-term.

2.12.3. Remedies, Measures and Implementation

- Establish a national project identification criterion on a decision making hierarchy that takes the National Physical Planning Policy (NPPP), Sustainable Development Goals (SDGs) and National Economic Policy (NEP) as the primary guidelines.
- All major public sector projects should be identified on the guidelines that originate from strategic needs of the NPPP, SDGs and the NEP.
- Create public awareness of NPPP, SDGs and NEP through appropriate measures.
- Private sector projects that address strategic needs of NPPP, SDGs and NEP should also be encouraged after aligning them with the broad national criterion.
- Carry out strategic environmental and social assessments (SESA) for selected spatial areas and broad economic sectors that help to identify strategic projects.
- Strengthen post-implementation monitoring of projects according to project approving documents
- Institutional mechanisms must be strengthened in project planning and implementation, financial oversight and procurement.

2.13. Corruption

2.13.1. Present Status, Issues and Problem Areas

Weak institutional structures and rule of law lead to non-transparency and lack of accountability in decision making that often manifests in high levels of corruption within a country's economic system. It tends to retard investor confidence and economic inefficiency, whereby a country operates at a sub-optimum level; endemic corruption also holds wider and more important consequences for social cohesion and rule of law. Indeed, in recognition of the importance of tackling corruption in any development effort, SDG 16 calls for a strong commitment to reducing corruption and bribery in all their forms (target 16.5). In 2016, Sri Lanka was placed at 95 (out of 176 countries) on Transparency International's Corruption Perceptions Index, which ranks states based on how corrupt a country's public sector is perceived to be. On a scale of 0 (highly corrupt) to 100 (very clean), Sri Lanka received a score of 36, which was well below the average score of 43 that year. The index reveals that the country did worse off than in previous years, where it received scores of 37 (2015) and 38 (2014), respectively.

2.13.2. Likely Social and Environmental Impacts

- Corruption holds the potential to 'delay, distort and divert economic growth'.
- Corruption excludes the poor from public services, exacerbating poverty.
- It undermines the positive outcomes of social assistance programmes by diverting financial resources away from the poor, making them more deprived and vulnerable

- Empirical studies also point to a negative correlation between corruption and the quality of public services¹⁶
- Institutionalized corruption carries significant risks to environment sustainability with inadequate safeguards against illegal deforestation, mining, wildlife poaching and the proliferation of other such offences.
- Perceptions of a breakdown in law and order and lack of access to justice can ignite significant social unrest in society

2.13.3. Remedies, Measures and Implementation

- Strengthen financial oversight at all levels of administration, including at the legislature
- Ensure integrity and independence of the Auditor General's Department
- Enact and enforce necessary legislation to promote transparency and accountability such as the Right to Information, Audit Act, declaration of assets, etc.
- Strengthen procedures and strictly follow guidelines on government procurement
- Apply rule of law on charges of corruption and fraud
- Strengthen independence of established agencies and bodies tasked with investigating and tackling corruption and fraud
- Drawing from the recommendations laid out by the UN Convention Against Corruption, the government should take measures to enhance accounting and auditing standards in the private sector as well.

2.14. Managing Global Risks

2.14.1. Present Status, Issues and Problem Areas

In an increasingly globalised world, small economies such as Sri Lanka's have gained more opportunities to develop through outward oriented economic policy engagements in the areas of trade, finance and labour. However, the prolonged economic downturn for many advanced economies following the global financial crisis of 2007/08 and the rise of China as a strong market competitor have seen a resurgence of rising populist sentiment and efforts to claw back national economic sovereignty. Despite the resultant policy uncertainties, the Asian region is expected to remain as the pivot of global growth, driven by domestic reforms in emerging economies such as China and India. For Sri Lanka, the risks and challenges of global developments are multiple, due to low consumer demand in key export markets such as the US and EU as global trade flows slow, rising commodity prices that herald a recent resurgence international oil prices, and turmoil in the Middle East that endangers the strong growth in earnings from worker remittances. As Sri Lanka attempts to revive its flagging export performance, a strategic approach to bilateral, regional and multilateral engagements with trading partners will need to be implemented to ensure export

¹⁶ Gupta et al. "Corruption and the Provision of Health Care and Education Services." *The Political Economy of Corruption*. London: Routledge, 2001

growth momentum, access to FDI and other forms of development finance in order to navigate the emerging turbulent global economic developments.

2.14.2. Likely Social and Environmental Impacts

- The micro-specialization of the manufacturing process creates greater scope for small and medium enterprises to plug into global value chains, improving opportunities for inclusive growth
- Growth of the services sector and services exports in particular allows more women to enter the labour force under more flexible and accommodating work conditions
- Sri Lanka will no longer have preferential access to the UK – the largest destination in the EU for Sri Lankan exports – under the European Union's (EU) GSP+ programme once it leaves the EU (Brexit)
- China's economic restructure will likely see outward flows of investment that have the potential to relocate to Sri Lanka, which would become a boon for growth beyond urban areas
- The withdrawal of US commitments to the Paris Agreement could jeopardize the entire cooperation framework on environmental commitments
- New regional and mega-regional trade agreements (e.g. TPP) are setting environmental standards within its commitments. Similarly, environmental standards and commitments on sustainable development are also set for Sri Lanka under regional programmes such as the GSP+

2.14.3. Remedies, Measures and Implementation

- Diversify export basket both in terms of products and markets in order to reduce dependence on EU and US. The Asian region is expected to be one of the most dynamic regions and holds considerable potential to strengthen Sri Lanka's external sector
- Seek economic partnership arrangements with Asian economies and groupings to promote exports and attract FDI
- Expand relations with growing Asian neighbours to take advantage of regional initiatives such as China's One-Belt-One-Road (OBOR) programme
- Engage with new agencies such as the Asian Infrastructure Investment Bank (AIIB) to access new forms of development finance
- Create a suitable environment for domestic entrepreneurship to explore "green technology" in order to reduce Sri Lanka's dependence on non-renewable energy sources and volatile consumer product markets such as oil

C. CLUSTERS: ECONOMY, ENVIRONMENT, SOCIETY

C3. ENVIRONMENT: CRITICAL ISSUES, IMPACTS AND SOLUTIONS

3.1. Land Degradation

3.1.1. Present Status, Issues and Problem Areas

Nearly one third of the land in Sri Lanka is subjected to soil erosion, the erodible proportion ranging from less than 10 per cent in some districts to over 50 per cent in others. Severe erosion takes place in the hill country on sloping lands under market gardens (vegetables and potatoes) tobacco, poorly managed seedling tea and chena cultivation. Erosion is also a threat to agricultural production in rainfed farming areas in the dry zone. The depletion of valuable top soil due to erosion has been attributed to the decline in yields of major food crops as well as five plantation crops over the past several decades.

Part of the soil that is removed is conveyed via rivers and streams leading to sedimentation of reservoirs and downstream floods. Recent studies undertaken within the Upper Mahaweli catchment have shown high rates of sediment yield in some rivers. Sedimentation is also taking place in small village tanks in the dry zone.

Clearing land for gem mining too has contributed to severe erosion and pollution, the latter caused by washing schist near streams and scattering debris from the schist into soil. Several factors including the number of informal (unregistered) mines, pressure from unionized gem miners, lack of capital in the small mines, and a lack of cohesion in gem mining policies stand in the way of attempts to control degradation due to gem mining.¹⁷

Unsustainable mechanized river sand mining is having severe impacts on the country's river system, including the Deduru-Oya River which has been deeply damaged and degraded as a result. Due to uncontrolled and illogical extraction of sand, the depth to groundwater has deepened to 12-15 m and goes down to 30 m in certain places. Over-mining in the Nilwala River too has led to many problems like salinization of public drinking water, collapse of river bank and loss of river land. River sand mining and inland sand mining along the Walawe River during the past two decades has deepened the riverbed by an average of three to four meters, while there are some points where it has dropped by more than six meters.

The catchment of the Mahaweli River is the source of water for five large reservoirs meant to serve multiple socio-economic objectives. Studies have shown that siltation and eutrophication of these reservoirs are very high. The Government had implemented a number of projects and programmes on watershed management and soil conservation in the area, yet the achievements of these efforts have fallen far short of expectations. Sri Lanka's approach to land degradation has been confined

¹⁷ National Report on Desertification/Land Degradation in Sri Lanka

so far to the limited technical and administrative approaches that related land degradation, measured in physical terms to prevailing land use practices.

Deforestation, which is another manifestation of land degradation, is continuing to have an impact, although terrestrial biodiversity and forest loss has slowed down in recent times due in part to the war that prevailed and in part to long term donor assistance. The quality of the forests has also declined due mainly to shifting cultivation, illicit felling of trees and encroachments.

The demand for timber and wood products for household, industrial and infrastructure needs has the biggest impact on deforestation. The annual sawn-wood consumption per 1000 persons in 1993 was estimated to be 31 m³ (MFE, 1995). Although this is comparatively lower than Malaysia (216.9m³), Thailand (67.4m³), Korea (112m³) and USA (485m³), sawn-wood demand is projected to grow from 0.544 million m³ in 1993 to 0.885 million m³ in 2020, at a rate of 12,600 m³ per year. Demand for plywood and other wood-based panels are predicted to increase, at rates of 2.8 per cent and 3.5 per cent respectively per year (MFE, 1995). As predicted by the Sri Lanka Forestry Sector Master Plan, if the current trends continue unchecked and wood imports are not promoted, the country will face an increasing shortage of sawn wood.

3.1.2. Likely Social and Economic Impacts

- Depletion of soil fertility leading to loss of productivity of agricultural lands.
- Communities will be affected by low quality public drinking water due to salinization resulting from over-mining of river sand.
- Adverse health effects, including possible epidemics due to abandoned mining pits.
- Domestic rice production and hydro power generation may be severely impacted due to degradation of watersheds.
- Additional cost burden to communities who are required to purchase and transport fertile soil for vegetable cultivations in up country due to loss of top soil.

3.1.3. Remedies, Measures and Implementation

- Increase the capabilities of institutions involved in land resource management to enable them to perform their roles effectively.
- A rationalization and re-definition of mandates and responsibilities of institutions should be undertaken to avoid or minimize conflicts of interests.
- Provide assistance to Provincial Councils and Pradeshiya Sabhas to undertake environmental management and develop a mechanism to overcome improper use of funding by various funding sources. The need to establish appropriate sub-national level institutions to enable Provincial Councils to discharge environment related responsibilities placed on them should be explored.
- Promote the greater participation of Pradeshiya Sabhas, NGOs and universities in combating land degradation.
- Develop the necessary policy, institutional and regulatory framework to accommodate the private sector in combating land degradation.
- Enhance the land use planning process by improving the current system through usage of built capacity for deforestation and degradation of forests.

- Implement existing laws and regulations pertaining to land degradation and forest offences.
- Review existing legislation pertaining to land degradation to rectify deficiencies and the laws to be made more effective and easier to coordinate.
- Bring in policies to ensure that the natural habitats of animals such as monkeys and elephants are not be disrupted.
- Demarcate forest estates and conserve critical watersheds.
- Implement the proposals in the Forestry Master Plan which also promotes the multiple use forests with the participation of communities and private sector.
- Reforest the country and increase the tree cover wherever appropriate including urban areas and rural areas.
- Use low impact development in storm water management in urban areas.
- Encourage the long term involvement of a donor agency in a particular sub sector.
- Effective projects and programmes to combat watershed degradation and promote soil conservation to be planned with an understanding of both social and institutional causes of land degradation.

3.2. Water Pollution

3.2.1. Present Status, Issues and Problem Areas

Surface and ground water pollution occurs in urban dump sites, high input agricultural areas, lagoons and tsunami affected areas. Almost all the industrial waste water after treatment as per legal standards is discharged to surface water bodies. Also safe drinking water is diminishing in some parts of the country due to contamination with both solid and liquid waste streams, oil spills, agrochemicals, salt water intrusion etc.

3.2.2. Likely economic and social impacts

- Obstructions to fishery practices as well as ecosystem health due to oil spills and other causes contaminating estuarine and marine waters.
- Water extracted from ground without permission and proper care by farms and industries leading to shortage of good quality water for human use.
- Cleaning water bodies incur high economic and social cost including curtailing employment of fishery communities.
- Loss of storage capacity of water bodies leading to disasters such as flooding which results in high restoration costs.
- Health hazards due to contaminated water and soil.
- Long term yield loss as a result of excessive agro chemical use and soil degradation.
- High production cost of paddy and other agro products due to use of excessive agro chemicals by farmers.
- Diminishing yield of agro produce in Sri Lanka and the high costs of the products compared to other producing countries resulting high imports.

3.2.3. Remedies, Measures and Implementation

- Adopt Polluter Pay Principle.
- Municipalities need to find appropriate locations as waste dumps.
- Strictly maintain reservations in water bodies in line with the National Environmental Act, Mahaweli Authority Act and Irrigation Ordinance.
- Strictly enforce the legislation on Marine Environment Protection Authority in terms of pollution of marine water bodies.
- Conduct full cost accounting of the damages, Natural Resource Damage Assessments and compulsory liability.
- Encourage and incentivize the zero liquid discharge systems in industries.

3.3. Solid waste

3.3.1. Present Status, Issues and Problem Areas

In Sri Lanka local authorities collects about 2680 tonnes of solid waste out of about 6400 tonnes of solid waste generated per day. The total waste collected from Western province amounts to about 1750 tons and the solid waste collection from the Colombo city alone is about 650-700 tonnes. Due to non-availability of established engineered and sanitary landfill sites most of the local authorities practice open dumping of the collected solid waste in marshy lands and vacant lands. Though a few sites are covered with solid layers from time to time most of the dumpsites are open and many wild animals including elephants are now feeding themselves from these dump sites. These dumpsites are eyesores, breeding grounds for flies and mosquitoes. The resulting environmental and social impacts of them are highly detrimental nationally. The solid wastes collected by local authorities are mixed and therefore has no economic value. As a result the resource recovery from the solid waste very small and not properly organized. Pilisaru program of the Central Environmental Authority has financially and technically assisted several local authorities to establish composting plants. Most of the industrial solid wastes are collected by authorized collectors and most of the recoverable wastes are reused or recycled and a major portion of hazardous solid wastes are co processed by Puttalam Cement plant. E waste the newly emerging waste category is still a problem in the country. Though part of the collected e waste is exported for recycling a huge amount of uncollected e waste is distributed in households and other workplaces. Though the Central Government, Provincial and local Government authorities spend heavily the state of solid waste management can be much improved benefitting the environment and the society. (Reference: Report by Prof Hemanthi Ranasinghe).

3.3.2. Likely social and economic impacts

- Possibility of spread of epidemics due to unsanitary conditions created by haphazard waste disposal.
- Possible damage to property and loss of lives due to disasters such as landslides of dumpsites or fire due to landfill gases etc causing heavy expenditure to both community and the government

- Dumpsite leachate contaminating nearby drinking water bodies resulting in water unsuitable for human consumption
- Bad odor and visual pollution leading to mental stress among the dwellers in the vicinity.
- Blockage of waterways leading to floods and inundating houses damaging property and life.
- Impact on tourism revenue due to unaesthetic nature of the country especially in urban areas.
- Mixed wastes has no value and create a loss of resources to the country.

3.3.3. Remedies, Measures and Implementation

- Implement the National Waste Management Policy and Strategies
- Take measures to realise the Pilisaru Project targets and objectives.
- Promote country wide programmes on recycling, reducing and rethinking of waste at municipality levels.
- Establish waste sorting centers in large cities to increase economic value of recovered resources.
- Facilitate private sector in their efforts in environmental management including recycling.
- Encourage circular economy where waste becomes a resource.
- Discourage the use of polythene and plastics.
- Switch to biodegradable plastics for packaging materials wherever appropriate.
- Introduce proper collection and disposal methods for hazardous waste.
- Introduce an incentive scheme- with a practical solution to collect reusable/recyclable material
- Using principle of industrial symbiosis, establish a nation-wide waste exchange where industries can buy segregated waste for their use.
- Set Up a central waste recycling park and establish recycling industries for all major resource types (plastics, paper, textile pieces, glass, construction materials, wood wastes etc) and showcase proper recycling of different material and provide training to interested investors.
- Ban free issue of bags by shops – enable the law regarding this.
- Incentivize small industries in private sector to commence recycling industries.
- Using small scale pilot projects and programmes promote education and awareness of communities in waste management with special reference to 3Rs.
- Engage communities in the waste management by using them for key activities.

3.4. Urgent Problems - Chronic Kidney Disease, Dengue

3.4.1. Present Status, Issues and Problem Areas

For centuries Sri Lanka has used a sustainable agricultural system which did not cause any negative impacts to the environment or the society. However during the last few decades with an intention of increasing the agricultural output the traditional agriculture was replaced by agro chemical based farming leading to serious environmental and social issues. According to the chemical profile of 2002 and 2012, the per capita agro chemical consumption has increased from about 22 kgs in 2002 to 50 kgs in 2012. One of the major health impacts causing human life among the farmers has emerged in the form of chronic kidney disease due to this high chemical intensive agricultural

practices. Unlike the common kidney disease among all types of people the chronic Kidney disease (CKDu) is threatening to destroy our farmer community. On the other hand the inadequate attention paid to environmental cleanliness by community and the local authorities a new epidemic is emerging in the form of Dengue. This disease is spreading predominantly in urban areas where solid waste management is poor and low income/underserved people are dwelling and water bodies are contaminated with debris.in 2017 the disease has increased to an epidemic level and a large number of persons exceeding 70,000 are effected by dengue killing about 300? These issues have a direct impact on family earnings which will contribute to a decrease in economic standing of the communities. Besides, these impacts will have a negative influence on tourism one of the major income earners for the country. ¹⁸

3.4.2. Likely Social and Economic Impacts

- Death and debilitation due to disease resulting in adverse family and cultural impacts.
- High government expenditure to manage the disease.
- Loss of revenue from tourism.
- Reduced workforce for agriculture and industry.

3.4.3. Remedies, Measures and Implementation

- Encourage a clean environment by all – using incentives, penalties and standards.
- Encourage and resort to disease prevention which is more successful than management.
- Introduce a health insurance scheme, especially for people who are vulnerable to CKDu.
- Advocate communities to undertake regular health checkups to enable early detection.
- Invest in appropriate infrastructure for disease prevention.
- Use an interdisciplinary approach in both disease prevention and management as there are multi stakeholders in the process.
- Provide facilities to research institutions for new research in nationally important areas.
- Community education and empowerment to manage their own vicinities to prevent diseases like dengue.

3.5. Air pollution

3.5.1. Present Status, Issues and Problem Areas

Emissions from urban traffic, power plants, etc.

Air Pollution is serious environmental problem in all urban areas but has become a major concern in cities such as Colombo and Kandy. In the recent past Kandy air pollution has aggravated mainly due to vehicular exhaust. In most urban areas the vehicle population has increased many fold and their exhaust has the highest contribution to air pollution. The gases emitted by the vehicles include

¹⁸ Chronic Kidney Disease (CKD) in Sri Lanka - Current Research Evidence Justification: A Review Sunethra Kanthi Gunatilake ^{1*}, S. Sunil Samaratunga ² and Ruvini Takshala Rubasinghe

carbon monoxide and dioxide, SOX's and NOX's, hydrocarbons, soot and dust. Some of these gases contribute to global warming, some to acid rain and other to respiratory illnesses such as asthma. There are situations where some of the emissions are carcinogenic causing serious illnesses to working population. Fumes from diesel vehicles are especially harmful and these emissions are caused by inferior quality diesel fuel, poor vehicle conditions and overloading. Most of these emissions in addition to the detrimental health impacts caused by them to humans and other living beings also damage building materials such as concrete, iron and steel, rubber causing long term impacts to infrastructure. In addition to vehicle industries as well as thermal power plants too emit a large volume of gasses mentioned above aggravating the situation further. Air quality in Colombo is monitored continuously in a couple of sites, near fort railway station and Meteorological Department premises and the sulphur dioxide level exceeded the WHO recommended values as far back in 1996. The scheme of vehicle exhaust testing has made some changes to improve the level of vehicle conditions and removal of lead from gasoline has removed lead fumes from the air. Nevertheless there is a long way to go for Si Lankan urban areas to improve air quality standards to a much desirable level.(Reference: "Environmental Pollution in Sri Lanka - A review" by O A Illeperuma).

3.5.2. Likely Social and Economic Impacts

- Unhealthy and sick workforce leading to lowering of productivity and industry competitiveness.
- Increase in health costs due to poor health of vulnerable groups such as children and poor.
- Health costs in treating air pollution related diseases.
- Damage to important tourist sites and attractions, from soot, dust and acid rain leading to loss of visitors to these sites.
- Loss of revenue from tourism due to air pollution, especially in cities.
- Emissions from power plants contributing to acid rain and affecting plantations in certain areas

3.5.3. Remedies, Measures and Implementation

- Introduce more renewable energy technologies phasing out non-renewables which are more environment damaging.
- Strictly enforce environmental laws to all emitting sites.
- Implement transport management action plan with modern dedicated bus lanes, mono rail or uni rails, expressways, carpooling, using alternative working hours or home based work schedules etc.
- Facilitating enterprises with low interest/no interest credit to introduce pollution free plants and equipment.
- Provide duty free facilities to import electric vehicles and introduce enhanced taxes to petrol/diesel vehicles.
- Facilitate setting up of solar operated vehicle battery charging stations all over the country.
- Provide facilities to research institute/universities for conducting research on bio fuels/hydrogen energy and other renewable energy sources
- Facilitate transfer of technologies to use methane instead of kerosene and LP gas for household activities and in transport.

- Encourage and educate dairy and other farmers on biogas production.

3.6. Balanced Inclusive Green Growth (BIGG) (*also explained in Introduction and Overview, Box B.1*)

3.6.1. Present Status, Issues and Problem Areas

Efficiency of natural resource use; Sustainable consumption and production

Sri Lanka has been a signatory to all relevant multilateral environmental agreements (MEAs) and over the last several years have taken steps to exceed the performance of obligatory requirements. Several projects have been undertaken to improve the environment and social life and to encompass sustainability issue in the national development. Sri Lanka has being a active partner in all projects started by UN,EU world bank and other international funding agencies with an effective track record. Sri Lanka is considered a prior candidate for most of the pilot projects in South Asian countries by UN agencies due to its past achievements. Currently, Sri Lanka enjoys an enviable place with a satisfactory Human Development Index with a low Ecological Footprint. With very minor adjustments to its economic development plans Sri Lanka will be able to reach a quite high level of Human Development Index without damaging the natural resource base and keeping the EF low. The commitment by the country to SDGs and the other emerging MEAs has provided the major boost to Sri Lankan Sustainable Development agenda and The EU funded Switch Asia project on Sustainable Consumption and Production policy support program, the only pilot project in South Asia is supporting the country to develop a major policy on Sustainable consumption and Production (SCP) which contribute to SDG goal No 12. The proposed secretariat for SDGs under Ministry of Sustainable Development and Wild life and the vision 2030, Sri Lanka Next, will form the nucleus for effective implementation of 17 SDGs and its 162 targets by 2030 making Sri Lanka one of the sustainably developed high middle income country.

3.6.2. Likely positive social and economic impacts

- A contented and happier society with improved wellbeing.
- Lesser waste generation and disposal to environment.
- More educated and caring youth engaged in national activities.
- Clean and green surroundings with fresh air and water and healthy eco systems.
- Reduced cost of disaster management as Eco DRR and Circular Economy concepts will be in practice.
- Intelligently used and conserved natural eco systems and bio diversity benefitting economy through increased tourism.
- Green products and services through the application of environmentally sustainable technologies and eco innovation.
- Life cycle management of resources and products and services leading to waste free society.
- Attraction of more tourists due to ecologically and socially conducive country

3.6.3. Implementation

- If BIGG is implemented, there will be less adverse environmental repercussions facilitating sustainable development.
- Introduce environmental education and sustainable consumption and production as well as 3Rpractices from grade 1 up to university levels.
- Enforcement of environmental regulation without favour or bias where needed.
- Introduce the Sustainable Consumption and Production Policy and supporting instruments and tools.
- Promote eco-tourism and other special forms of tourism to attract high caliber tourists.
- Introduce and enforce labels, organic certification and similar market based tools to create responsible community groups.
- Establish and empower community based sustainability groups/societies to actively engage in inclusive green growth.

C. CLUSTERS: ECONOMY, ENVIRONMENT, SOCIETY

C4. SOCIETY: CRITICAL ISSUES, IMPACTS AND SOLUTIONS

4.1. Poverty & Inequality (*also discussed under Cross-cutting Themes*)

4.1.1. Present Status, Issues and Problem Areas

Absolute poverty in the country has declined substantially over the last several decades so the elimination of abject poverty is an achievable goal provided evidence-based policies and interventions are adopted, both in the short as well as medium terms. On the other hand, income inequality and social disparities and inequities based on such factors as age, gender, class, ethnicity, caste, disability and residence have become more pronounced during the same period necessitating the adoption of effective public policies in the areas of taxation and redistribution through increased social spending in critical areas like education, skill development, health, social security, and access to justice (especially to protect marginalized people like indigenous groups).

4.1.2. Likely Economic and Environmental Impacts

Interactions with:

Economy: Inequality and poverty encourage people to migrate to cities and overseas looking for greener pastures creating major labour market dislocations including labor shortages and wage inflation. These in turn affect critical sectors of the economy. Poverty affects the nutritional and health status of labour resulting in low productivity, absenteeism, etc.

Environment: Poverty encourages encroachment on public land and environmentally sensitive resources like wetlands, forests and reservations. Rural urban migration that results in unplanned urban growth lead to overcrowding, congestion and environmental pollution. Unplanned or ad hoc public and private investments result in serious environmental issues that could be avoided if proper regulatory and approval procedures are followed.

4.1.3. Remedies, Measures and Implementation

Increase productive employment in rural, estate and urban areas by promoting agricultural production, agro-based industries and manufacturing, particularly in strategically important areas. Develop social infrastructure in peripheral areas to curb rural urban migration. Public and private investments need to be preceded by comprehensive regulatory and approval procedures. Strengthen regulatory and approving agencies where they are currently weak such as provincial and local authorities. A persisting issue regarding equality of opportunity is on the basis of gender and age. In this regard high rate of unemployment among women and youth is particular educated but disadvantaged youth are serious issues that need to be addressed... through sustainable state intervention.

4.2. Basic Needs and Rights

4.2.1. Present Status, Issues and Problem Areas

In spite of social provision of health, education and income support, there is still a significant section of the population deprived of their basic needs such as adequate food, housing, health care, education and justice. These could be addressed through well targeted interventions at national, provincial and local levels such as social housing for the poor, access to garden plots for food production, legal aid, etc.

4.2.2. Likely Economic and Environmental Impacts

Interactions with:

Economy: the economy needs to maintain a balance between exports on one hand and the production of basic commodities needed by the people on the other, in particular the low income groups.

4.2.3. Remedies, Measures and Implementation

Public policy to recognize the need to satisfy the basic needs of the people and support ventures that make a direct contribution to meeting the above needs

4.3. Peace and Reconciliation (*also discussed under Themes: Cross-cutting*)

4.3.1. Present Status, Issues and Problem Areas

Even though the violent and prolonged armed conflict connected to ethnic issues came to an end in 2009, ethno-religious tensions persist and threaten relative peace in the country. Current efforts on the part of state and non-state institutions to promote reconciliation do not seem to be adequate.

Many commitments under national and international law in regard to Transitional Justice after the end of the armed conflict in 2009 remain unfulfilled. Peace building for a conflict free society requires addressing root causes, after the end of the armed conflict. Responding to the specific needs of persons affected by the conflict as victims of violence (in the north-east and south) seems essential for social and political stability that will help achieve economic growth. SDG 16 and SL Treaty commitments under international law and global policy address this reality, and we need to cross reference, as necessary. In addition to Treaty commitments, Sri Lanka has also made a number of important commitments pursuant to UN Human Rights Council Resolutions 30/1 of 2015 and 34/1 of 2017, as well as in relation to GSP+ re-gaining access to European markets. Fulfilling these commitments would strengthen national unity, equity and the rule of law, contributing to a more inviting investment climate.

4.3.2. Likely Economic and Environmental Impacts

Interactions with:

Economy: the lack of reconciliation between communities and growing ethno-religious tensions in the country create a sense of instability and uncertainty in the minds of many people and discourages long term economic investments. The same situation on one hand, encourages many youth to look for opportunities outside the country and on the other, prevents Sri Lankans living abroad from considering a return to the country, depriving the country of a significant reverse flow of many skilled persons.

4.3.3. Remedies, Measures and Implementation

A coordinated national program of reconciliation is critically important to reduce ethno-religious tensions in the country in order to create a peaceful environment that is critically important to facilitate sustainable economic and social development. The cabinet has already approved a National Reconciliation Policy that now requires implementation in a concrete plan of action. Such a program should be multi-sectoral, covering education, media, civil society and political parties. The government's trilingual policy needs to be implemented effectively through education, state institutions and state employment. Besides language issues, ethno-religious tensions and disparities, more pervasive social and regional disparities need to be addressed as well. The reconciliation mechanisms to be created pursuant to UN HRC 30/1 are a critical part of the reconciliation process. They include an Office on Missing Persons (OMP), a Reparations Authority, A Truth and Reconciliation Commission (TRC) and a special judicial mechanism that will enhance public confidence in justice, accountability and the rule of law.

4.4. Social Inclusion

4.4.1. Present Status, Issues and Problem Areas

Though the country has sustained public provision of education, basic healthcare and other services, the operation of the market forces in all sectors has created inequalities in many areas, and have exerted economic and social pressure on a significant section of the population, particularly in rural and estate areas. As a result, many marginalized segments of the population have a sense of social exclusion in economic and social opportunities. Many educated rural youth continue to feel that they are disadvantaged and try to express their grievances through all sorts of agitations. Access to healthcare, quality education, decent employment, etc. continues to be unequally distributed and this situation needs to be transformed.

4.4.2. Likely Economic and Environmental Impacts

Interactions with:

Economy: the present domination of the economy by the service sector and the informal sector has created a distorted economic structure, denying secure and lucrative livelihoods for a large section of the population. Informal sector workers may earn enough to live on a day to day basis

but the lack of access to social security and increasing costs of health, education and transport create a sense of social exclusion and relative deprivation.

Environment: The groups marginalized by the market encroach on environmental resources including sensitive areas.

4.4.3. Remedies, Measures and Implementation

Adopt evidence based social policies backed by adequate funding to address issues of social insecurity and social exclusion.

4.5. Balanced Inclusive Green Growth (BIGG) (also discussed in Introduction and Overview, Box B.1)

4.5.1. Present Status, Issues and Problem Areas

Focus is on urban centered, export-led growth, including export of skilled and unskilled labour. Sustainable use of environmental resources to benefit all in terms of productive employment, open spaces, clean water, renewable energy, food production, public transportation, etc. is the way forward to promote green and inclusive development.

4.5.2. Likely Economic and Environmental Impacts

Interactions with:

Economy: both production of commodities and provision of services can be assessed on the basis of criteria that measure sustainability and green growth.

Environment: the promotion of a green economy and green employment is directly connected to both the natural as well as the built environment.

4.5.3. Remedies, Measures and Implementation

The need to phase out certain non-renewable raw materials and energy sources and their replacement with greener materials and energy offer opportunities to open up new lines of production and service provision. These need to be explored and exploited as rapidly as possible. The large extents of land that have been abandoned in all parts of the country can be made full use of to promote the production of green raw materials, medicinal plants and food.

4.6. Social Justice – Rights Based, beyond Basic Needs

4.6.1. Present Status, Issues and Problem Areas

Many people in the country lack a living wage or minimum income, access to basic social services, legal aid to those who cannot afford professional legal services, justice when their rights are violated.

4.6.2. Likely Economic and Environmental Impacts

Interactions with:

Economy: rule of law and justice are critically important to the functioning of the economy. Social justice is a key factor underpinning peace, harmony and contentment. Peace, harmony and contentment provide a conducive environment for economic development.

Environment: some of the points made earlier apply here.

4.6.3. Remedies, Measures and Implementation

There are many gaps in the economic and social opportunity structures in the country. As a result, many do not have equal economic and social opportunities. It is necessary to fill these gaps by identifying and taking measures to address them.

4.7. Constitutional Reforms and Devolution (*also discussed under Themes: Cross-cutting*)

4.7.1. Present Status, Issues and Problem Areas

Constitutional reforms are needed to devolve governance responsibilities to provincial and local authorities in order to reduce centralized control in many fields. There are also gaps in the areas of fundamental rights in view of the country's international treaty obligations and SDG's. Justiciability of social and economic rights in local courts is also a nagging issue that needs attention.

4.7.2. Likely Economic and Environmental Impacts

Interactions with:

Economy: Constitutional reforms also need to pay greater attention to government's obligation as trustee of public resources to use them in order to advance the socio-economic status of entire population paying special attention to the need to balance economic and social development.

Environment: weak regulatory mechanisms lead to abuse of environmental resources resulting in environmental degradation and loss of biodiversity.

4.7.3. Remedies, Measures and Implementation

Strengthen the chapter on fundamental rights in conformity with international treaty obligations and SDG's. Make provision for the justiciability of economic and social rights. Strengthen democratic and accountable governance by ensuring independent Commissions to monitor government action, actions of non-state actors, while ensuring the independence of the judiciary and law enforcement agencies, including the AG's office and public administration. Strengthening state and non-state agencies working in the areas of national unity and reconciliation among communities can also facilitate peace and harmony, a key prerequisite for protection and well-being of all citizens. Steps also need to be taken to establish zero tolerance of the use of torture in criminal investigation. Corruption that has undermined the proper functioning of many institutions and reinforced inequities in society can be stamped out by providing adequate resources to relevant institutions to carry out independent, professional investigation and prosecution. Those

who are under investigation and those who have been found guilty of corrupt practices should be barred from holding or seeking public office.

4.8. Social Protection

4.8.1. Present Status, Issues and Problem Areas

The lack of social protection is a major challenge that a majority of people in the country grapple with even on a day to day basis. Many elderly people cannot retire from work due to lack of a regular income. Most disabled people are forced to beg on the streets or go from house to house asking for help. Low income people face difficulties due to lack of well-designed health insurance policies. Inadequate support from the state forces children to beg for food and other necessities. In this regard, widespread violence against women and children not only undermines their safety, security and right but also denies them the life chances they deserve. These often leads to social and economic exclusion.

4.8.2. Likely Economic and Environmental Impacts

Economy: the economy does not create adequate regular jobs, forcing more and more people into the informal sector and casual employment which account for more than half of gainful employment. The structure of the corporate sector needs to be revamped in order to achieve the above objective.

Environment: vulnerable groups live in degraded areas, further worsening conditions.

4.8.3. Remedies, Measures and Implementation

Old age Pensions, employment and income security, disability support, child endowments, and national health insurance. Effective measures by law enforcement and national and criminal justice system to address violence against women and children need to be taken to ensure justice and opportunity to them.

4.9. Decent Work

4.9.1. Present Status, Issues and Problem Areas

A significant segment of the employed people engages in work that is dirty, dangerous, insecure and dehumanizing. Waste collection and disposal, loading and unloading of heavy material, cleaning, mining, environmental services, etc. Most people end up in such work situations due to their own lack of educational and other credentials. Yet, the functions they perform are very important for the well-being of the others. Hence the need to create better working conditions for them and take measures to enhance their dignity.

4.9.2. Likely Economic and Environmental Impacts

Economy: The present structure of the country's economy forces many people to rely in irregular, insecure and usage without any social benefits. So the structure of the economic needs to be revamped to create decent employment with social security.

Environment: The work described above is important for maintaining environmental quality and combating environmental pollution. The development of technological solutions and use of machinery can help reduce or even eliminate some of the unsafe work done manually today.

4.9.3. Remedies, Measures and Implementation

Introduce technology and modern work instruments and implements to reduce or eliminate adverse effects of such work on health, safety and well-being of workers.

C. CLUSTERS: ECONOMY, ENVIRONMENT, SOCIETY

C5. SUSTAINABILITY PERSPECTIVE – 2020 AND BEYOND

5.1. Economy

The current policy framework of Sri Lanka is shaped by the overall vision of development of the government presented in "The Five Point Plan: A New Country in 60 Months" in 2015. The five goals of development under the Five Point Plan (FPP) include (1) generating one million employment opportunities; (2) enhancing income levels; (3) development of rural economies; (4) ensuring land ownership to rural and estate sectors, the middleclass and government employees; and (5) creating a wide and a strong middle class (Department of National Planning (DNP), 2016). These goals are reiterated in the government's latest "Vision 2025" policy document¹⁹ released in September 2017, which spells out a course of reforms to make the country more competitive and raise all Sri Lankans' standards of living. The goals presented in these policy documents share many similarities with the SDGs, thus holding promise for achieving sizeable economic progress in the coming years.

In the context of the current economic status and problem areas (as discussed under each critical issue) and the policy agenda of the government, the DNP has identified several measures that the country intends to adopt in meeting specified targets, most of which are echoed in the Vision 2025 document.. Table 1 below provides an overview of recommended short- to medium-term measures to be taken for different indicators of economic prosperity, and the current and likely situation in 2020 and beyond.

Table 1: Achieving Economic Prosperity: Measures, Current and Likely Future Status

Goal	Indicator	Proposed Measures for Meeting Targets	Status in 2016	Targets set for 2020 ²⁰
SDG 8/ FPP1/FP P2/FPP3	GDP growth rate	Promotion of decent job creation, improving labour productivity through skills development, developing a pension scheme for all workers by amalgamating existing schemes, enhancing skills of migrant workers and exploring new markets	4.4%	7%
	GDP per capita		US\$3,835	US\$5,797
	Public Investment	A focus on public social and economic infrastructure projects, while creating space for local and foreign private investors to invest in directly productive and profit-oriented ventures	5.2% of GDP	5.7% of GDP
	Private investment		25.1% of GDP	25.8% of GDP
SDG17	Budget deficit	-Reforms relating to coverage, compliance and tax administration to increase government	-5.4% of GDP	-3.5% of GDP

¹⁹ Vision 2025, Min. of Finance, 2017, Govt. of Sri Lanka.

²⁰ Anticipated Targets of National Planning Department

Goal	Indicator	Proposed Measures for Meeting Targets	Status in 2016	Targets set for 2020 ²⁰
		revenue -Rationalizing government expenditure through reduction of waste and elimination of corruption		
		-Encouraging export product specialization and market diversification		
	Current account balance	-Implementing trade facilitation commitments -Phase out various para-tariffs -Reviewing and renegotiating existing FTAs and entering into new FTAs with dynamic Asian economies	-2.4% of GDP Exports worth USD10 billion	2.2% of GDP Exports worth USD20 billion
	FDI	-Improving business regulatory and operational environment by restructuring regulatory institutions -Moving towards a low tax and tariff business environment with simplified and transparent administrative procedures -Identifying and removing delays and complexities in obtaining land leases -Integrating SMEs into the formal sector	Doing Business rank 110	Reach rank below 70
SDG9/ FPP3				
	Infrastructure	Creating an efficient transport network connecting large and emerging cities, townships, economic centers and rural hubs		Better road network
		Increasing public transport contribution to passenger movement	58%	65%
	Innovation	Increased investment in technology and research	Rs. 3,195 Mn	Rs.4,961 Mn
SDG1/S DG2/ FPP2	Agricultural productivity	Investments in the National Food Production Programme, establishment of agricultural mega zones, strengthening of value chains development, establishment of an Agricultural Marketing Authority, establishment of the Agriculture Modernization Authority, and the formation of farmer centric large scale agro organizations and cooperatives Promotion of private sector participation and PPPs to modernize the sector	Rs. 11,680 Mn	Rs. 18,135 Mn
	Resilient agricultural practices	Investments in crop production and improvement to promote new hybrid and high yielding varieties of crops	Rs.2,779 Mn	Rs. 2,976 Mn
		Investments in seed and planting material to establish seed cultivation farms	Rs. 480 Mn	Rs. 913 Mn
	Nutritional status	Implement a national nutritional and food safety programme	Rs. 450 Mn (2017)	Rs. 1,500 Mn

Source: Department of National Planning, 2017, *Public Investment Programme 2017-2020*

Vision 2025 also reiterates previous pledges to increase direct taxes, increase public revenue to 16% of GDP, and allow a floating exchange rate. Additionally, through fiscal consolidation efforts involving a forward-looking liability management strategy, it is hoped to bring the debt-to-GDP ratio down from the current 79% to 70% by 2020. Ongoing trade negotiations with India, Singapore, and China will continue, along with a trade adjustment program – including the enforcement of anti-dumping laws – to lessen competition impacts on domestic firms.

Making scientific forecasts for the future is however a challenging task, given the prevailing uncertainties in the current economy. It is important to monitor progress regularly and take necessary corrective action if any of the indicators are not on track to achieve the desired targets. It is also imperative that Sri Lanka integrates its economy closely with the global economy through strengthened trade and financial relations to maximize the chances of realizing the set targets. A simultaneous focus on providing adequate safety nets to safeguard the poor and vulnerable will help in ensuring that growth is inclusive, as recognized in Vision 2025. Also essential are reforms in fiscal, trade, investment and labour market policies – as discussed in previous sections – to remove existing impediments to achieving higher rates of economic growth that will eventually take the country to upper middle-income status.

Under a more realistic and conservative economic growth estimate of around 5%, GDP will increase from the present US\$ 81.3 billion (US\$ 79.7 billion in 2010 constant prices²¹) to US\$ 124 billion in 2025 and to a further US\$ 158 billion by 2030. Assuming a constant population growth rate of 1.1% in the coming years, Sri Lanka will cross the US\$ 5,000 per capita GDP mark in 2024, reaching a per capita GDP of US\$ 5,285 by 2025, and US\$ 6,386 by 2030.²²

In 2025, such a growth trajectory would place Sri Lanka at a level comparable to that of present-day upper middle-income countries such as Thailand in Southeast Asia, Fiji in the Pacific, South Africa in the African region, and Colombia in South America. Sri Lanka's per capita GDP level in 2030 would be similar to that of the average of countries in the East Asia and Pacific, excluding high income countries. Sustainable development issues and prospects in those countries would provide useful pointers to the kinds of economic problems Sri Lanka is likely to face in 2025 and 2030.

5.2. Environment

In 2030 with the implementation of sustainable development addenda through SDGs and other national green policies the Sri Lanka seeks to enjoy a pollution free, clean and green environment with high quality of life for its people and inclusive green growth. Specific policies and efforts are needed to ensure that green growth is inclusive and that environmental sustainability is not achieved at the expense of greater equity and poverty alleviation.

With the vision to achieve sustained economic growth that is socially equitable, ecologically sound with peace and stability, the country is moving towards a National Sustainable Development Strategy. As an extended effort to this with special attention to climate change adaptation and mitigation, the country through the Ministry of Mahaweli Development and Environment recently promoted the Blue Green Development Strategy for sustainable development. Sri Lanka has several

²¹ World Bank, 2017, *World Development Indicators*.

²² These calculations are based on the standard compound annual growth rate formula. The future GDP level is given by: $x(1 + r)^n$, where x is the current GDP level, r is the GDP growth rate, and n is the number of years.

environmental initiatives and self-imposed targets which are positive achievements. The targets established through the Initiatives by H E the President to make agriculture organic, and increase the forest cover to 35%, and sectoral targets such as use of renewable energy for generating 20% of electricity by 2020, the introduction of a campaign for solar based electricity supply for households and commercial buildings and net-metering are key examples. There are many departments and institutions established for sound implementation of the policies and regulations at national, provincial and local level.

However, there are fundamental obstacles that impede the achievement of the above goals, which need to be identified and rectified. The implementation of the policies and regulations had been weak due to various issues including very poor coordination and communication among the departments and institutions. This weakness has led to waste of financial, physical and human resources without benefits to the country. Therefore the country has to develop a clear mechanism to improve the inter-departmental and inter-institutional coordination. This is a prerequisite for effective implementation of the policy framework. Further it is required to mobilise the stakeholders for greater collaborations and cooperation in development and implementation of the green policies and plans.

The country needs to mobilize all the public sector institutions to achieve these targets and obtain the commitment from the private sector and civil society to actively engage in the national programs through financial and non-financial incentives.

The key areas which needs immediate addressing are health, solid waste management, agriculture and transport. To drive for a healthy nation we have to ensure our environment is clean which has become a top priority. Management of solid waste has become a serious and urgent issue especially in the urban areas. The engagement of community through awareness, training and obtaining the support of community based organizations and non-governmental organizations for waste segregation at the point of origin is going to be one of the major strategies for effective solid waste management. The trust build through engagement will motivate the community groups to assist in this key issue of solid waste management.

Use of technology to provide resource recovery from segregated waste can be done through the private sector. Providing incentives and green credit to SMEs will encourage them to start many recycling industries or even expand existing recycling industries for plastic, paper, rubber, textile glass and metals. SMEs can start up compost and bio gas plant at small scale which can support the replacement of chemical fertilizer by organic fertilizer. The long term solutions such as sanitary landfills, waste to energy projects which need high investment and long lead times can be introduced later if necessary for other types of wastes.

The eradication of CKDu by having an effective interdisciplinary approach which takes on the perspectives of all the stakeholders in delivering a sound solution to the recipient, will ensure a safe and secure life for them. Encouraging the replacement of agro chemicals and chemical fertilizers through the use of natural fertilizers and bio dynamic farming practices and will permanently eradicate the future catastrophes such as CKDu.

Another major benefit from organic agriculture will be the reduction of water pollution from agricultural activities. To eliminate the impacts due to pollution of water bodies stringent measures have to be taken. Introducing wastewater discharge fee system which is delayed for the last fifteen years will ensure all business enterprises to reduce consumption of water as well as reduction of discharged pollution load. Awareness at school level on the preciousness of clean water and the

need for protection of it will make all future generations acting more responsibly. All water bodies needs to be protected by having buffer zones as prescribed by the relevant legislation.

A major contribution to air pollution is vehicular traffic. Planning for pollution free transport in the long term with long range transport systems can reduce vehicle congestion and air pollution. The Ministry of Megapolis and Cities has a long-term plan for changing the current patterns of transport. The short-term plans for dedicated lanes for buses, rapid bus transit systems, and building flyovers at key junctions will ease our traffic problem and reduce air pollution. Encouraging people to switch to electric cars and setting up of solar charging stations through providing tax concessions and incentives to private sector will eliminate the air pollution. Government strategies to discourage fossil fuel use for transport, industry and power generation through various financial and non-financial measures will further improve our air quality.

Implementation of zonal arrangements as per the UDA plan for siting industries, setting up housing schemes and condominiums commercial areas is going to be a key requirement in effective land use. The implementation of green building guidelines for public sector buildings, proposed green public procurement plan and development of eco villages are going to contribute green economic growth with inclusive community engagement.

The environmental vision for the future is a clean and green country. The engagement of today's school children who are going to be future citizens is utmost important. Creating awareness, training and their involvement in environment related project and activities will make them responsible to be champions of the change.

The 2020 Vision is to mobilize all groups, including the public sector, private sector and especially school children through awareness, training and motivation, and to initiate all actions as a step towards the 2030 vision.

5.3. Society

2020 is close. It is not realistic for us to expect a drastic change in the present situation within such a short period. On the other hand, if the appropriate policy measures and other interventions are introduced and implemented from now on, it is reasonable to expect some significant improvement by 2020. This is true with respect to most of the social issues discussed above. On the other hand, our approach to addressing social issues should be multifaceted. In other words, a concerted effort must be made to address diverse issues simultaneously, not in a piecemeal fashion.

If a national, multi-sectoral action plan is developed and implemented, progress can be measured and monitored based on a set of indicators dealing with the social issues discussed in the report. Since some of the social issues are structurally rooted, significant change in the present situation with respect to such social issues cannot be expected by 2020. On the other hand, it would be possible to achieve significant progress with respect to all indicators by 2025 provided rational policies and effective measures are put into place during 2017. Monitoring and measurement of progress can be greatly facilitated by a multi-agency platform that brings together all relevant agencies in order to share information and take follow up action. This platform would be housed in a national secretariat established for the purpose.

Even though it is not possible to provide data on the levels of achievement by 2020 with respect to social issues, it is reasonable to assume that significant progress can be made in the next three

years in regard to policy and program development and the commencement of their implementation. If these initial steps are taken without further delay, by 2025, impressive results can be achieved in relation to almost all the issues. For instance, absolute poverty could be eliminated by 2025, while a substantial reduction in income inequality could be achieved by 2025 provided effective measures are taken to redistribute income through a progressive taxation regime, with corresponding increases in social investment in critically important sectors such as education, research and development, health and public transport.

The following conditions would facilitate the consolidation of social, economic and environmental gains made over the next decade or so, thereby helping Sri Lanka to reach the SDG by 2030. The country needs to take full advantage of the emerging global development policy consensus, where social and environmental issues have been recognized as priority areas for national and global interventions. Those issues that have been clearly identified in this document can be addressed effectively only through evidence based public policies relating to taxation, human resource development, in particular R&D, health and transport, social security, gender equality, social cohesion, etc. If state interventions are effected through multi-sectoral and multi-stakeholder action, by 2025, the country could become economically more developed and equitable, socially cohesive and just and politically more integrated and responsive, ensuring greater social equality, peace, justice and ethno-religious harmony. Such conditions would encourage people to live contented lives, and not be forced to leave the country looking for more lucrative employment and greener pastures elsewhere.

S – SECTORS

S. SECTORS

S1. AGRICULTURE AND FOOD²³

1. Current Status

Sri Lanka's population remains primarily rural based and engaged in agricultural activities, except in the western province. Crop cultivation in Sri Lanka is categorized in several different ways such as by type of crop, size of holding and agro-ecology. The most popular categorization is by type of crop, i.e domestic food crops, plantation crops and minor export crops. Categorization by size of holding entails small holdings under which almost all crops are cultivated, and large holdings where about one fifth of the plantation crops along with a few large sugar cane estates and cashew plantations are held under. Yet another way to categorize crop cultivation is by agro-ecological terms, as wet zone agriculture and dry zone agriculture. Almost the entire extent of plantation agriculture is in the wet zone, while about three fourths of domestic food agriculture with nearly 90 per cent of the paddy crop is from the dry zone. About 70 per cent of this paddy crop is served by major, medium and minor irrigation systems due to inadequate and irregular rain fall.

Rain-fed and irrigated agriculture contributes to 83 per cent of domestic food (other than fish) and to over 25 per cent of Sri Lankan exports. At least 30 per cent of the population is heavily dependent on agriculture. The major export crops (tea, rubber, coconut and spices) represent the largest contribution (35 per cent) to the agricultural GDP followed by paddy (29 per cent), the staple food crop in Sri Lanka. The rest comes from fruits, vegetables, and livestock products. The small but significant livestock sub sector accounts at present to 0.8 per cent of GDP and 10 per cent of value added by agriculture.

2. Critical Issues, Impacts and Solutions

2.1. Present Status, Issues and Problem Areas

2.1.1. Emerging Risks

Changing weather patterns and in particular, the rainfall pattern in recent years have emerged as the prime risk for the entire agriculture sector including food crops, export crops and livestock. Arguably, the next main risk arises from the low profitability of smallholder farms leading to the increasing reluctance of rural youth to engage in agriculture resulting in severe labour shortages. These two risks in combination pose a major challenge to the sustainability of the agriculture sector. Fragmentation of land holdings, land degradation, and food waste and destruction of produce, are other risks developing over a long period of time. Weak and fragmented supply chains and the resulting marketing issues also contribute to the low profitability of the sector. Continuing high incidence of rural poverty and increasing health concerns, including the chronic kidney disease, must be added to this list of challenges.

²³ Writing Team: Anura Ekanayake (Leader), Gerry Jayawardena, S.R.K. Aruppola

2.1.2. Climate Change / Drought

Climate research has revealed that over the last century or so, the mean temperature of the island has risen along with an increased variability in rainfall. Whether the total rainfall has changed is yet unclear. Long term projections, however, suggest that the temperature will rise further with increased rainfall in the wet zone along with a reduction in rainfall in the dry zone.

A series of droughts and floods experienced during the years 2015 – 17 impacted on agriculture. There were severe droughts, heavy rains and flooding in 2015 while in 2016, the country experienced its worst drought in 40 years. This resulted in a poor Maha 2016/17 cropping season, with at least a 35 per cent reduction in cultivation. In the Yala 2017 cropping season, the total cultivation was expected to be 50 per cent or more below the average with the total water availability in the major reservoirs at a mere 29 per cent of capacity at the commencement of the season. The May 2017 floods which severely affected most of the wet zone of Sri Lanka further aggravated weather-related adverse impacts on both food and non-food agriculture. Reliable estimates are not available at this stage as to what the overall impact of this extreme weather will be on agriculture during 2017 with the drought continuing in the Northern Province, North Central Province and the North Western Province. The overall water level in reservoirs was at 18 per cent in the beginning of August 2017 compared to 47 per cent at the same time in the previous year. Whether there will be sufficient water for a full cultivation in Maha 2017/18 is also unclear. Such extreme climatic events can have significant impacts on both food and non-food crops and result in serious repercussions on the national food security and foreign exchange earnings, while causing severe hardships to the large number of families that are dependent fully or partially on agriculture.

Sri Lanka became self-sufficient in rice in the 1990s with rice substituting for a portion of imported wheat consumption. There were significant increases in production of other crops, including oil crops (soybeans, groundnut), root crops (cassava, potatoes and sweet potatoes), vegetables (tomatoes, onions) and spices. However, this situation may not be sustainable if the recent increase in the frequency of floods and droughts continue unabated.

As per the official rainfall forecast for April, May and June (AMJ) 2017 for Sri Lanka, downscaling of global climate models predicted below-average rainfall in Colombo, Kalutara, Galle, Matara, Gampaha, Puttlam, Kurunegala, Kegalle, Ratnapura, and Kandy districts and above average rainfall for all other districts during AMJ 2017. This forecast was based on the prevailing global climate conditions and forecasts from different climate models from around the world. The sharp difference between this forecast and the actual turn of events serve to illustrate the enormous challenges in forecasting seasonal weather in Sri Lanka.

2.1.3. Labour Shortage

Around one-third of Sri Lanka's population is dependent on agriculture. Yet the value added by agriculture to GDP is less than 10 per cent. Naturally, 85 per cent of the poor in Sri Lanka are in rural areas where agriculture is the main economic activity. About 45 per cent of the poor are below the age of 25 years. The average wage of an agriculture worker in 2015 was half that of a services worker and two thirds of an industrial worker. Rural unemployment accounted for 80 per cent of total unemployment in Sri Lanka. Yet the entire agriculture sector covering domestic food agriculture, plantation agriculture and minor export crops suffers from an acute labour shortage. Unemployment is highest among the rural youth. First time job seekers appear to wait for the ideal job that meets their aspirations.

It should be noted that the lack of interest shown by the youth for agriculture stems from reasons more complex than merely low wages. Agriculture may be unattractive to the young also because it does not meet their aspirations in general.

2.1.4. Land Degradation

It has been estimated that nearly one third of the land in Sri Lanka is subjected to soil erosion, the erodible proportion ranging from less than 10 per cent in some districts to over 50 per cent in others. It is commonly believed that the depletion of soil fertility has led to a loss of productivity of agricultural lands in the country. The maintenance of crop yield in spite of depleted soil fertility may be explained by the heavy reliance on chemical fertilizer. Saltwater intrusion would also adversely affect irrigation networks and agricultural yields.

2.1.5. Land Tenure

As per the Census of Agriculture (2002), the average size of a small holding in Sri Lanka declined by about 64 per cent over the period 1946-2012 from 1.3 ha to 0.47 ha. About 1.65 million smallholder farmers operate on an average area that is less than 2 ha and contribute 80 per cent of the total annual food production. Such small holdings operating as separate economic and decision making entities cannot engage meaningfully in commercial agriculture due to their poor access to capital, technology, value chains and markets. Most farm lands in the dry zone and many in the wet zone are held by small holders on temporary permits. The case for land consolidation and allowing market forces to operate for commercial agriculture has been made from time to time over the years. This has been deferred repeatedly due to fears of potentially adverse socio – political implications. The present government has declared its intention to transfer full land ownership to those who farm on temporary permits. As an alternative to the free operation of market forces in relation to land, other means of effective / operational land consolidation have also been tried out. The formation of farmer societies of various forms and farmer companies are examples. Both public and private lands occupied by the military, in the North and East in particular, are being returned to civilian owners.

2.1.6. Poverty

Although absolute poverty in Sri Lanka declined from 22.7 to 6.7 per cent from 2002 to 2012/13, a quarter of all Sri Lankans remain nearly poor, defined by living above the national poverty line (about US\$ 1.5) but below US\$ 2.50 per day (in 2005 PPP terms). Repeated crop failures can make these nearly poor fall in to the poor category quite easily. There are areas in the North Western Province in particular where there have been four continuous seasons of rice crop failure to date.

2.2. Likely Economic, Social and Environmental Impacts

- **Land** - While the cultivated extent of paddy has been projected to remain constant at 1,100,000 ha over the period concerned, other crop extents are expected to increase by 60 per cent from 367,000 ha to 590,000 ha. Accordingly the total cultivated extent of crops will increase by 15

per cent from 1,467,000 ha to 1,690,000 ha. It is not clear as to where this extra 223,000 ha of land will come from. There will be serious environmental concerns if this to be obtained via deforestation or by clearing other sensitive eco systems.

- **Water** – In view of the recent experience a serious concern has arisen as to whether there will be sufficient water for cultivating even the current extents of land, let alone any increase, at the current levels of water used for crops.
- **Labour** – The labour requirement to cultivate all the expected land will increase by 27 per cent under the current technology mix. Already there are severe labour shortages in all sectors including agriculture, with demands for labour imports for construction, hospitality and manufacturing. The mega infrastructure projects such as Port City, Mega Polis and other urban centres and the resulting expansion in urban economic activities will further reduce labour available for agriculture.
- **Capital** – Clearly more private capital will be required for operations. At the same time, greater public investments will be required for irrigation and other infrastructure.
- **Productivity** – The crop productivity is expected to go up all-round in this scenario. Paddy yield will rise from 4.26 t/ha to 5.81 t/ha. Maze yield will rise from 3.57 t/ha to 5.0 t/ha. The key question is whether this will happen under the current high input technology. If so, this implies an increase in the use of agro chemicals with potential adverse consequences on land and water quality, and human health.
- If Sri Lanka continues to concentrate on agriculture that is heavily dependent on water and labour as at present, with climate change and the developments in the rest of the economy, the following adverse effects will be likely: The economy will have even lower value added from agriculture, and food imports may rise; If the imported food costs more than domestic produce, the food cost will go up; Rural poverty will increase and nutrition standards in general may deteriorate.

2.3. Remedies, Measures and Implementation

1. Enhance the capacity and the ability to better forecast seasonal rainfall and provide early warnings on extreme events. This will require investments in training people as well as in acquiring modern technology covering both hardware and software. Results from this activity, however, can only be expected in the medium to long term since appropriate forecasting models will have to be developed along with the collection of required data.
2. Develop institutional arrangements to speedily respond to early weather warning signals. The multitude of relevant agencies must effectively work together. They must be fully leveraged to use the latest information technology for assembling such data, analysing them and for rapid real time dissemination of such information to farmers and other stake holders. This activity can yield short term results.
3. Drought tolerant crop varieties and cropping patterns which consume less water must be developed and made available to farmers. Sustained high investments in R&D by the public sector as well as the private sector are required to achieve this together with effective agricultural extension. Appropriate changes in the investment incentive structure must be considered. Medium to long term results are possible.
4. Incentivize farmers to adopt water saving cropping patterns and cultural practices. Accordingly, farm subsidies and other farm support must be adjusted. An example is the recent change in the fertilizer subsidy to a cash grant where farmers can use it as they please thereby reducing

overuse of synthetic fertilizer. The cultivation of short term varieties can be encouraged for example by lower insurance premiums and subsidized seed material. This activity can provide short term results

5. Provide farmers with technical solutions which save water, labour and agro chemicals. For example, the following are essential: mechanical row seeding and weeding, increasing the capacity of the soil to retain moisture, rainwater harvesting, micro irrigation using solar pumps, and more information to farmers on how to select crops to match the soil quality. This requires access to knowledge as well as appropriate machinery and equipment. This activity can result in short to medium term results
6. Educate farmers on the need to conserve water and the use of new technology for farming, value addition and marketing. Medium to long term results can be obtained thus.
7. Organise farmers to overcome the scale constraint so that less water using crops can be produced, stored, value added and marketed profitably. This will enable the provision of effective credit, input supply, storage as well as insurance in a sustainable / commercially viable manner. The recently inaugurated "Gramashakthi" programme and the people's companies therein can be integrated with commercial value chains with the organized private sector. This will provide a "win-win" solution for the farmers and the private sector as well as the state. There are many success stories where farmer groups have engaged in commercial value chains and these can be replicated. This activity can provide short to medium term results.
8. Fully leverage the recent advances in information technology and increased mobile telephone penetration to provide real time weather, pest and disease, as well as market data to farmers and village level officials. Short term results can be obtained via this activity. Several best case examples of such are available in Sri Lanka.
9. Educate consumers at large on better nutrition and appropriate changes in food habits. Arguably, healthy food consumption with reduced starch and sugar, and increased consumption of fruits and vegetables may somewhat reduce the present high dependence on water for agriculture overall. Medium to long term results are possible.

Elements of the nine point action plan proposed above have been discussed and even partly implemented by the authorities concerned in a fragmented manner over the years. What is required, however, is a firm commitment to implement all of them together in an integrated manner even though the potential benefits will be realized over short, medium and long term time horizons.

The actions 3 – 6 listed above may be described as risk minimizing strategies as against the current short term / seasonal profit maximization approach based on a high input / high output strategy using highly input responsive crop varieties which are less water stress tolerant. To an extent, however, highly profitable cash crop cultivation is incorporated in the crop mix of farms via actions 7 – 8, farm level profits will increase even in the short term.

Apart from action No. 3, which is of a long term nature for perennial crops, all other actions listed above are equally applicable to plantation agriculture and minor export crops.

3. Sustainability Perspective – 2020 and Beyond

2020

The domestic rice output for the year 2017 is estimated by UN / WFP to be sufficient for just over seven months. This is a sharp deterioration from a more or less self-sufficient position in the decade before 2016. As per the GDP calculations of the Department of Census and Statistics, the agriculture sector declined by 2.9 per cent in Q2 2017 in spite of sharply improved tea prices.

If Maha 2017/18 is also below par due to continuing water shortages, the year 2018 is unlikely to be a favourable year for agriculture. As per WFP farm household debts have doubled over the last couple of years and the shortage of capital will add to the negative effects on the sector. There will be just one more year to reach 2020 and so the outlook in terms of domestic food availability, nutrition and farm incomes by 2020 does not appear to be encouraging.

2025 – 2030

A sustainable positive outcome is achievable if the nine point action frame outlined earlier is implemented.

The potential agriculture sector scenario beyond 2020 has to be seen in the light of the likely developments in the rest of the economy. With a less than 10 per cent value addition to the GDP at present, agriculture cannot be the leading force in the economy. Nevertheless it can become a much more productive and efficient sector, providing affordable nutrition to the populace in a sustainable manner while providing a high standard of living for those engaged in agriculture. Export Agriculture covering both traditional export crops and non-traditional crops such as fruits and vegetables, flowers and foliage can make a significant contribution to the sector, if modern technology is used for growing and value addition.

The proposed development of Megapolis, other urban centres, and the associated physical infrastructure development will speed up the structural transformation of the economy. The resulting shift of labour from agriculture will begin to reduce the pressure on sensitive eco systems and enable land consolidation. This also will encourage mechanization and increase capital intensity. The increase in disposable incomes all round as a result of overall economic development can result in a shift in demand from rice to fruits, vegetables, fish and dairy products encouraging diversification towards high value less water dependent crops. All this, however, cannot be assumed to happen automatically. A guided transformation is required. If not, the rural poor will suffer in the process. For the long term sustainability of the sector, a heightened awareness of the potential impacts of technical barriers to trade as well as FTAs are required.

S. SECTORS

S2. EDUCATION²⁴

1. Current Status

The different stages of education that prevail in Sri Lanka can be classified as follows:

- Early childhood care and education (ECCE).
- General education (school education).
- Technical and vocational education and training.
- Tertiary and university education.

ECCE spans from birth to five years of age. The general (school) education span is 13 years' duration, i.e. from 5 to 18 years of age. At present, education is compulsory for children from 5 to 16 years. Under the new education reforms proposed in 2015, the government has taken a policy decision to implement 13 years of mandatory education. When the new policy comes into effect, those who leave school after the compulsory span will have further opportunities in vocational education and training while those who successfully complete secondary education will continue to have the opportunity to join universities or tertiary institutes for higher education.

While the current education portfolio encompasses school education, vocational and technical education, higher and tertiary education, it is vital that there are interconnected practices in this education continuum. This linkage is especially important when it comes to policymaking and planning. Implementation should also be a coordinated activity.

2. Critical Issues, Impacts and Solutions

2.1. Early Childhood Care and Education (ECCE)

In Sri Lanka, ECCE is received by children aged 3-5 years, but the 0-3 age group is not covered. Early childhood care and development (ECCD) is a devolved function provided by local government authorities while a significant number of ECCE centers are run by private individuals, religious organisations, NGOs, INGOs and other charity (non-profit) organizations. Statistics show that 17,023 ECCE centres with about 29,341 teachers are functioning in the country. Yet, ECCE remains a missed opportunity for some children, as ECCE is not equally extended to all neighbourhoods.

2.1.1. Present Status, Issues and Problem Areas

The national policy and the regulatory framework on pre-primary education are not equally followed by service providers thus creating issues in terms of consistency of quality and standards. Participation in pre-primary education is low compared to most middle- and high-income

²⁴ Writing Team: Madhura Wehella (Leader), Jayantha Balasooriya

countries. In Sri Lanka, reportedly, around 60 per cent of children receive pre-primary education, yet participation of children from low income families remains low. Moreover, statistics on ECCE are not being updated.

Lack of a national policy and strategic plan detailing systematic service delivery and quality assurance mechanisms for ECCE provision, under investment of public resources, and ECCE being left largely to private sector financing and provision are critical issues.

2.1.2. Likely Economic, Social and Environmental Impacts

The opportunity to promote economic growth and social equity will be hampered as international evidence demonstrates that investment in ECCE brings high cumulative returns and is one of the most cost-effective ways to promote economic growth and social equity.

2.1.3 Remedies, Measures and Implementation

A national policy framework and a comprehensive strategic plan for ECCE specifying a collaborative regulatory mechanism and a systematic service delivery mechanism for ECCE through the public and private sector must be developed. The policy framework should encapsulate uniform standards to ensure quality of service delivery. Regulatory mechanism should embed possible ECCE models, an effective ECCE teacher education model, resourcing strategy, possible public sector interventions to encourage private sector providers, and an efficient monitoring and evaluation mechanism along with regular data gathering practices. To enable the country to achieve universal enrolment in ECCE, the service delivery mechanism should ensure a country-wide network of ECCE while providing children from low income households with publicly funded ECCE services.

2.2. General (School) Education

2.2.1. Present Status, Issues and Problem Areas

Sri Lanka provides free-education from the primary stage to the first degree level in university education. To ensure that every child has access to schooling, a network of schools is established throughout the island with needed resources. All teachers in these schools are appointed and paid for by the government. The students enjoy a package of welfare services which includes free textbooks, school uniforms (through vouchers or similar kind), midday meals, free health services including dental treatment, scholarships and bursaries for deserving students and subsidized transport. Children with special educational needs (SEN), and disabilities are provided with special facilities to ensure equal opportunities in line with vertical equity principles. Some of the problem areas are as follows:

- There is a lack of equal provision and access to quality education across the country. These include inequities in delivery of services and facilities i.e. non-equitable teacher distribution, supply of teachers of unequal standards and training leading to difference in the quality of teaching, supply of insufficient services and facilities for children with special needs and children in need of psychosocial counseling, supply of unequal facilities for higher order education spaces such as science and mathematics laboratories and also of aesthetics studios and sports facilities. Overall, there is lack of public funding to support many of these areas.

- At present, the curriculum does not effectively integrate and embed skills into the courses of study such that students can develop and demonstrate a broad range of skills for employment or for further studies. Furthermore, the school syllabus is too large and ineffective, the courses of study are irrelevant to the world of work, and the skills set required for employment is not supported. Since last several decades, it is evident that the mismatch between the education and the need of the world of work has led to many social, economic and political issues. There is also inadequate focus on promoting research and development.
- The country has universal access to primary and secondary education, yet 12 per cent of children do not complete secondary education up to grade 11. The survival rate (SR) to grade 11 is 88 per cent and the SR for girls (90 per cent) is higher than for boys (86 per cent). Some of the contributory factors are poverty and the need to support families - especially with respect to boys causing higher dropout rates - transport problems, health issues, early marriages, irrelevance of the courses of study to the world of work, focus on academic attainment and national examinations in the school system without due recognition, encouragement and support for students wishing to follow vocational training and education, and poor service delivery in certain areas.
- Inadequate achievement of student learning outcomes²⁵ is also a critical issue resulting from inadequate teacher standards and training, teaching methodologies that are not learner-centered and assessment systems that are not part of the learning and teaching process, and poorly resourced schools with inadequate funding in the form of direct school grants that can be used to improve student learning based on the school's need. In addition, a heavy academic workload and over-emphasis on examinations at the primary (grade 5 scholarship) and upper secondary stages (GCE OL and AL) detracts students from learning the normal curriculum and drives exam-targeted learning.
- In Sri Lanka, teacher recruitment includes those who have formal institution-based training i.e. NCoE national diploma holders and BEd degree holders. But BA and BSc degree holders without formal pre-service teacher education are also recruited. A significant number of graduates are recruited without such pre-service teacher education qualifications which impacts on their teaching ability. Further, the professional training in the NCOEs is inadequate and some curricula are still not well designed to reflect modern trends and needs in teaching and learning.
- There is also an insufficient number of qualified teachers to teach English as a subject in schools together with inadequacies in the English language curriculum and textbooks. This results in a lack of opportunities for students to study in bilingual mode.
- There is a general unwillingness of teachers to work in rural schools due to poor facilities and resources in rural areas, lack of incentives to serve in difficult areas and low salaries. Furthermore, administrative issues are a barrier to implementation of accepted norm-based teacher transfer regulations dictated by policy.
- Another issue is that inadequate attention is given to civic education, a subject in the school curriculum which incorporates topics of justice, multi-ethnic and multi-religious harmony, values and ethics. It is a compulsory subject only up to grade 9 and becomes optional in grades 10 and 11. The subject is not offered in grades 12 and 13.

²⁵Evidenced by national assessments of student achievements at grades 4 and 8 (2012-2016) conducted by the National Education Research and Evaluation Centre (NEREC) of the University of Colombo, commissioned by the Ministry of Education.

- There is no legislation specific to the education of students with special educational needs (SEN) in Sri Lanka. A policy document that sets out the national policy on SEN is absent. All children with SEN are not being identified in the country. Many teachers have a limited awareness of the range of SEN and how to provide for these appropriately. There are limited human and financial resources, limited equipment in special education and negative attitudes regarding SEN. Training and professional development in SEN are not of a sufficiently high standard. Teachers with SEN qualifications chose to work in other departments/subjects contributing to the teacher shortage. The staff shortfall of SEN teachers is approximately 36 per cent. In general, there is a lack of accountability of the system of provision of SEN.
- The accountability framework in the education system is practiced poorly due to an absence of strict controls or monitoring. Due regard is not given to client satisfaction or the speedy service delivery to beneficiaries.
- While policymaking and decision-making should be evidence-based, resort to their ad-hoc practice has resulted in the introduction of a number of polices with short-term objectives. As such, policies have been imposed without analyzing the real need of the system, creating adverse impacts on the long-term development of the education sector in the country.
- Currently, there is no proper mechanism to identify and meet the needs of gifted and talented students although their thinking and innovation are largely needed for creating a knowledge-based society and economy (see Box S2.1).

Box S2.1 Special Schools and Facilities for Talented Teachers

Many countries are seeking to promote innovation education. The models are still being worked out. Even if proven models exist, they would have to be adapted to Sri Lankan conditions. It is too early and too risky to try to introduce innovation directly into school curricula. What is needed is space for experimentation and adaptation in innovation education. For example, Sri Lanka could create space for a few "magnet schools" with various specializations and different admission criteria that can exist as islands of diversity within the school systems at the secondary level. Ideally, they will be operated in close collaboration with industry associations who will provide the linkages to companies and possibly provide some of the financing. At the tertiary level, a variety of initiatives could be launched, that learn from, and build upon the experience gained over several years at the University of Moratuwa

Contributed by: Rohan Samarajeewa

2.2.2. Likely Economic, Social and Environmental Impacts

- Children disadvantaged by educational inequality leave school with little readily marketable educational qualifications and skills to equip them for jobs in the labour market which impacts on their life choices as well as the economic growth and social development of the country.
- Educational inequality between rural and urban regions in the country cause tensions between affected groups of people. Disadvantaged provinces and regions are unable to develop economically and prosper.
- Differentiated demand for schools with good resources causes heterogeneity of the school system.

- Inability of school completers to use English as a source and means to access economic opportunities in the national and international labour market providing knowledge based services.
- Absence of an innovative culture, R&D practices and evidence-based policy and practices hamper economic development and whole system improvement.
- Decreased quality of human capital required for future economic, social and political development of the country and democratic participation.
- Lack of adequate facilities and resources for mentally and physically differently-abled children result in many early drop outs from the education system creating social issues.
- Disempowerment of children with special educational needs make them less productive and less able to contribute to national development.
- Absence of opportunities to acquire basic values, ethics and attitudes at a young age can impact on their contribution to society as adults.

2.2.3. Remedies, Measures and Implementation

- Identify equity gaps within Sri Lanka's education system and address all service delivery inequities.
- In order to meet the aspirations of those who wish to join the world of work early, promote technical, professional and vocational education opportunities, as an alternative pathway at upper secondary stage of school education.
- Diversify and modernize the curriculum in order to address present and future demands in the local and international labour markets. The use of modern technologies should be encouraged to enhance learning.
- Establish a better-articulated outcome based curriculum integrating and embedding skills (cognitive and well as socio-emotional) focusing on the underlying objective that all children should be successful learners, confident individuals, responsible citizens and effective contributors (Singapore and Scotland share this focus).
- Promote a school system that, through the curriculum, lays a strong social and cultural foundation that promotes multi-ethnic and multi-religious harmony and encourages strong civic values, ethics and patterns of behavior consistent with a strong democracy and social justice system.
- Promote international languages (e.g. English), STEM subjects (Science, Technology, Engineering and Mathematics) and professional subjects (e.g. medicine, engineering, paramedicine etc.) that will help employability. Knowledge of the arts must be encouraged and linked to the STEM subjects.
- Strengthen vertical and horizontal linkages between school education and tertiary/higher education sectors. Establish wide networks of tertiary and higher education institutions and universities.
- Establish a systematic career guidance system in the school system to help children understand their capabilities at an early stage and develop their aspirations to make informed learning and career choices as they progress through school. Children need to be given a realistic picture of the world of work and understand the skills that are in demand.

- Identify and provide special support for children from poor households, transport subsidies, better coordination with the Ministry of Health for identification and follow-up of students with health related issues and a strengthened health and nutrition programme already implemented in schools.
- Improve teacher professionalism, standards and training as the quality of teaching is a key factor in improving children's learning and the outcomes they achieve. Ensure recruitment of professionally qualified personnel who have formal pre-service teacher education and training as teachers on a norm-based, school-based recruitment policy.
- Modernize training of new teachers with curriculum upgrades to make them enquiring professionals who are able to use technology and data to enhance learning and teaching.
- Promote use of modern teaching-learning methods which enhance students' practical engagements in learning (e.g. innovative, research-based, assignment-based methods).
- Introduce a general policy of bilingual education and related policies to ensure that bilingual teachers have the required training both in-service and pre-service. Provide better teaching resources to support teachers of English language and bilingual education.
- Establish a professional council for teachers to maintain quality and standards of teacher development.
- Improve the existing institutional framework of teacher education by upgrading NCoEs up to degree awarding level, establishing links between NCoEs, NIE and local universities to produce graduate teachers, strengthening the network of Teacher Learning Centers to provide Continuing Professional Development (CPD) for teachers in each education zone.
- Introduce a teacher license system and performance system to improve teacher effectiveness. Further, introduce a system for quality assurance in private education institutes.
- Implement a teacher transfer system between national and provincial schools as an interim approach until such time a school-based teacher recruitment policy is in place.
- Establish a teacher incentive system for encouraging service in difficult areas.
- Improve attainment of learning outcomes in the classroom and make assessment an essential part of the curriculum not separated from learning and teaching. Assessment information should be used effectively to support children's progress in their learning and for further development of the curriculum.
- Benchmark GCE OL and AL qualifications with international examinations.
- Implement a systematic process to provide school grants.
- Review and improve the primary and secondary English language curriculum and textbooks.
- Formulate legislation specific to the education of students with SEN in order to provide a framework for policies, promote inclusion, empower students and parents, make the whole system of provision for SEN more accountable and contribute to better student learning outcomes. Legislation on special education is a key indicator of inclusion.
- Prepare a policy document that sets out the national policy on SEN including future strategies for SEN provision and practice.
- Improve the inclusive education concepts, teaching and learning processes and learning environments. Provide human resources to support effective inclusion as most schools are committed to being inclusive.

- Introduce new mechanism for resourcing special education institutions based on vertical equity principles and adequacy criteria. Provide adequate human resources and physical facilities for SEN units and schools.
- Develop a social charter for students with SEN for ensuring their educational rights, provision of educational opportunities for them with national standards and ensure the social commitments for their education and well-being.
- Upgrade the SEN curriculum in the National Colleges of Education (NCoEs) to improve pre-service training in SEN provision.
- Include training on identifying and meeting the needs of gifted and talented children in the NCoE SEN curriculum
- Restructure the overall governance structure in the system of education.
- Devolve decision-making powers and authorities to implementation levels.
- Establish an evidence-based policy and planning culture in the system.
- Promote research and development practices for policymaking.
- Introduce systematic accountability framework.
- Develop a policy statement about gifted and talented students describing how they may be identified and their needs met. Introduce new programmes for gifted and talented students.
- Promote development of young professionals at different levels (i.e. school, zonal, provincial and, national).

2.3. Technical and Vocational Education and Training

2.3.1. Present Status, Issues and Problem Areas

The technical and vocational education and training (TVET) sector in Sri Lanka is the leader in producing skilled-labour for the national and international labour markets. The government is investing a significant amount of public funds for the expansion of the TVET sector and provides TVET programmes free of charge. There is, however, a lack of high quality and labour market relevance of the TVET programmes offered in the country due to the weak linkages between suppliers of training, end users and market demands. Curricula are out-dated and the quality is questionable. Attention to work habits and attitudes and competency in English language is not strong.

2.3.2. Likely Economic, Environmental and Social Impacts

- Minimal labour market benefits from TVET.
- Prospective employees are inadequately prepared for placement in emerging enterprises in spite of heavy government investment TVET sector.
- Prevalence of skill shortages in the country and lowered productivity of the formal and informal business sectors.
- Inability to attract foreign direct investment due to the country's inability to produce flexible workers.

2.3.3. Remedies, Measures and Implementation Solutions

- Develop a systematic mechanism for quality and relevance of TVET sector programmes.
- Support systematic reforms in the TVET sector particularly to match training supply with demand by creating strong linkages between training supply end users and market demands.
- Promote private sector involvements (OJT) in the TVET sector.
- Establish a systematic career counselling system to give sound careers advice to young people.

2.4. Tertiary and University Education

2.4.1. Present Status, Issues and Problem Areas

University and higher education sectors in Sri Lanka are mainly state owned. There are also many private higher education institutions and many of them are affiliated to overseas universities awarding foreign degrees.

The country is unable to cope with the demand for higher education through public sector universities and higher education institutions as they have limited capacity for enrolment of students qualified to enter university. This has become a serious issue in the education sector in the country.

There is also insufficient focus on graduate training on Research and Development (R&D) and the creation of an environment conducive to new knowledge generation, discovery and innovation in universities. A dearth of professionally qualified and experienced staff to create such an environment and lack of opportunities for R&D may be contributory factors.

There is a mismatch between higher education provision and labour market demand due to uneven response of universities to design and offer courses related to labour market needs. Poor quality of some curricula and instruction methods as well as inadequate achievement in improving proficiency in the English language and softy skills which are essential for progress in the work place are some current issues.

2.4.2. Likely Economic, Social and Environmental Impacts

- Graduates have difficulty finding jobs creating unemployment of educated youth.
- Loss of higher education opportunities for qualified students.
- Insufficient contribution of R&D to economic growth and development.
- Lack of innovations.
- Low employer satisfaction and confidence in the quality of new graduates as their knowledge and skills are not aligned to the labour market.

2.4.3. Remedies, Measures and Implementation Solutions

- Diversify and modernize the curriculum of universities and other higher education institutions in order to address present and future demands in the local and international labour markets.
- Expand tertiary and higher education opportunities in the state sector.

- Promote public-private partnership (PPP) programmes to expand opportunities for higher education.
- Modernize university teaching and learning needs in line with international practices.
- Supply qualified academic staff with exposure to R&D through foreign higher degrees and training.
- Promote R&D practices and establish an R&D culture in the system through formation of research cells and university-based consulting in each of the universities and development of strong links with industry.
- Improve the quality of higher education and English language proficiency.
- Encourage all university staff members without exception to participate in R&D programmes.
- Promote a university administrative culture supportive of research
- Promote research and innovation outcomes in all university faculties.
- Delegate more authority and decision-making powers to universities.

2.5. Inter-linkages among the Sectors

2.5.1. Present Status, Issues and Problem Areas

Inconsistent and contradictory policies and practices are seen across the education sector due to the division of the education portfolio to different subsectors and the lack of communication between the respective authorities. There are poor linkages between sub-sectors (school education, technical and vocational and higher education) and poor sectoral linkages.

Non-equitable distribution of investment for education has been caused by variations and inconsistencies in investment among the different sub-sectors of education, changing priorities of education and the absence of a systematic mechanism for resourcing education, especially among the sub-sectors.

2.5.2. Likely Economic, Environmental and Social Impacts

- Inconsistencies and contradictions among sub-sectors within the education sector that will adversely affect the holistic development of the education sector.
- Assessing investment in education on an year-by-year basis without considering it as a long-term capital investment which will lead to holistic development of the country results in difficulties in planning and implementing policy in a consistent manner.

2.5.3. Remedies, Measures and Implementation Solutions

- Improve communication between respective authorities in the sub-sectors of education.
- Establish linkages between the sub-sectors (school education, technical and vocational education, tertiary and higher education).
- Establish linkages between education and relevant sectors.
- Develop a systematic mechanism for resourcing education.
- Increase significantly the proportion of public investment in education.

3. Sustainability Perspective – 2020 and beyond

To ensure sustainability of the strategic recommendations proposed for the education sector, it is recommended that a master-plan be developed identifying short-term actions for 2020, medium-term projects and programmes for 2025 and long-term programmes for 2030. Moreover, the commitments of financial and other necessary resources through the national budget should be ensured for sustainable implementation of the proposed master plan. Given that Sri Lanka's public spending is relatively low compared to other middle-income countries, it is important to increase the public expenditure on education across provinces and urban and rural areas, to address issues of access, equity and inclusiveness, as well as to improve the quality and relevance of education.

In keeping with the vision of Sri Lanka as an upper middle income economy by 2030, the education system should be providing not only a basic standard of quality education for everyone (including adult education), but also high-end educational opportunities for the most gifted students using the latest technology, curricula and teaching methods available in advanced countries. Therefore, the cooperation and commitment of the political leadership, policymakers, technocrats and educators are essential to achieve the expected outcomes of this futuristic agenda proposed for the education sector by 2030.

S. SECTORS

S3. ENERGY²⁶

1. Current Status

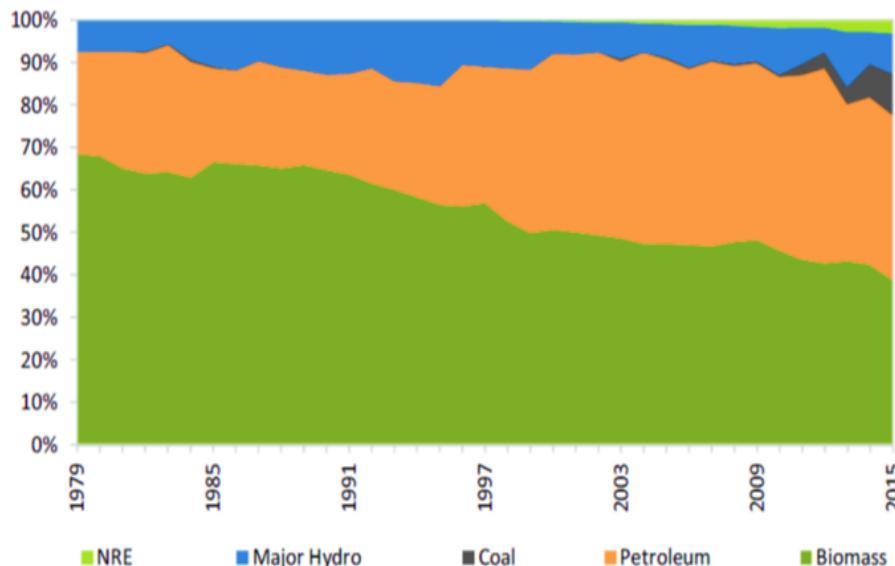
The energy sector in Sri Lanka has evolved from a predominantly indigenous primary energy supply base to a predominantly imported primary energy supply base. Prior to the mid-nineties, the main primary energy sources which were biomass, hydro and imported petroleum have now given way to a mix of biomass, hydro, petroleum and coal. The share of indigenous biomass supply as a percentage has dropped from 47.3 per cent to 38.8 per cent over this period (Table S3.1 for primary energy supply for the period 2005 to 2015). A more dramatic turn of events is traced from 1979 where the share of imported petroleum and coal in the primary energy supply of the country will continue to grow in the foreseeable future draining the country's foreign earnings (Figure S3.1).

Table S3.1. Primary Energy Supply by Source

ktoe	2005	2010	2012	2013	2014	2015
Biomass	4,668.3	4,954.0	4,861.7	4,814.3	4,911.2	4,830.5
Petroleum	4,289.7	4,420.5	5,219.6	4,102.5	4,556.8	4,840.0
Coal	64.9	59.9	455.9	479.7	920.7	1,239.0
Major Hydro	773.4	1,197.2	654.4	1,442.4	875.9	1,177.1
New Renewable Energy	71.0	179.7	180.6	286.7	301.2	366.2
Total	9,867.3	10,811.4	11,372.2	11,126.7	11,565.8	12,452.6
PJ						
Biomass	195.5	207.4	203.5	201.6	205.6	202.2
Petroleum	179.6	185.1	218.5	171.8	190.8	202.6
Coal	2.7	2.5	19.1	20.1	38.5	51.9
Major Hydro	32.4	50.1	27.4	60.4	36.7	49.3
New Renewable Energy	3.0	7.5	7.6	12.0	12.6	15.3
Total	413.1	452.7	476.1	465.9	484.2	521.4
%						
Biomass	47.3	45.8	42.8	43.3	42.5	38.8
Petroleum	43.5	40.9	45.9	36.9	39.4	38.9
Coal	0.7	0.6	4.0	4.3	8.0	9.9
Major Hydro	7.8	11.1	5.7	13.0	7.6	9.5
New Renewable Energy	0.7	1.7	1.6	2.6	2.6	2.9

²⁶ Writing team: Shavi Fernando (Leader), Tilak Siyambalapitiya, Harsha Wickramasinghe, and Randika Wijekoon

Figure S3.1. Share of Primary Energy Supply



Source: *Energy Balance Table 2015*, Sri Lanka Sustainable Energy Authority

Although the per capita energy consumption too has been growing in the past, Sri Lanka's energy intensity of the economy is low, using 0.46TJ of commercial energy to produce a million LKR of GDP. The main reason that Sri Lanka is comfortable with such low energy intensity figures is the dominance of the services sector that has surpassed industrial and agricultural sector outputs. How the energy intensity will vary in the future depends on any structural changes expected in the economy. However, Sri Lanka cannot be complacent when in reality many countries that have developed in the recent past have taken a rigorous path of industrialisation that will surely result in an increase in the energy intensity of the country.

2. Critical Issues and Solutions

2.1. High Cost of Electricity Generation

2.1.1. Present Status, Issues and Problem Areas

The cost of generation decreased with the commissioning of the Norochcholai coal-fired power plant. The average cost of generation (excluding transmission and distribution expenses) that was 18.34 LKR/kWh as sold in 2013, declined to 13.83 LKR/kWh by 2015 - a 25 per cent reduction. The government then cancelled the Trincomalee (Sampur) power plant project in 2015, which was already behind schedule from its planned commissioning in 2016. To bridge the gap, a large number of smaller and very inefficient diesel or heavy fuel burning power plants are being imported in large scale. Contracts for existing oil burning power plants which the government allowed to lapse with much publicity, have since been recalled to operate in desperate attempts to bridge the gap and avoid blackouts following the government's directive to cancel the Sampur power plant. In 2016, the Public Utilities Commission (PUCSL) approved only a portion of CEB's plan, to include only diesel or heavy fuel burning power plants. Such power plants will use expensive oil, and the threat that Sri Lanka will return to the era of high electricity prices is real. The upward trend of costs has already commenced. A systematic approach to the project to import LNG is lacking, with the government relying on unsolicited proposals, which have for the past two years, failed to

materialise. The estimated incremental cost of burning diesel or fuel oil, instead of coal, to produce electricity is about USD40 million (Rs 6000 million) per month, and the incurring this expenditure has already commenced.

There has been a lack of commitment to adhere to proper and scientific assessment of plans and implementation principles in the electricity generation expansion projects. Irrational and illogical advice given to decision makers is highly detrimental in the long run.

2.1.2. Likely Impacts and Consequences of Problems

Economic:

- The future fuel mix which was in favour of coal is definitely shifting towards diesel or heavy fuel, with very serious costs to the economy.

Social:

- A burden to consumers, as the high cost will be gradually passed down through electricity bills and other means (taxes), as the government will have to raise funds to import the high cost of oil that is required to run these power generation sets.

Environmental:

- As the imported generation sets will avoid the requirement to comply with an EIA, these sets (some of which are on-rent) as an aggregate will result in a very high magnitude of emissions. The CEB-procured, large scale power plants of 300MW capacity, will have to comply with the environmental standards but it is unlikely that the carbon foot print will greatly reduce. It should be recognized that if and when LNG is made available, there will be environmental gains. However, coal plants too can be designed to comply well with local environmental standards.

2.1.3. Remedies, Measures and Implementation

- Implement the long term least cost generation expansion plan of the CEB. If needed, cross checking and reviews by international experts can be carried out, but there should be a total commitment to implement it after such review. Two such reviews have been recently conducted.
- Unscientific and baseless advice to the government must be avoided.

2.2. High and Irrational Electricity Prices and Price Structure

2.2.1. Present Status, Issues and Problem Areas

Sri Lanka is perceived to be a country with high electricity tariffs in the region. Comparison of prices with other countries for each customer category indicates that Sri Lanka's prices are in the mid-range. Current (2017) electricity prices require a 12 per cent increase to enable the CEB to collect revenue to match the PUC-approved costs. It is not meaningful to compare the average price of electricity with other countries, as tariff making in most countries is based on various technical, commercial and social considerations and distortions. Over the years, and especially after the PUCSL's tariff methodology became operational in 2011, there is greater transparency in allowed

costs to CEB and LECO, although the prices (tariffs) have not been adequately rebalanced through a fully rational process.

There is a lack of a transparent and rational tariff making policy and a roadmap to reach the policy target (though the PUCSL framework provides for it). Sri Lanka should see a gradual shift to rational and transparent tariff making which perhaps may be the only positive outcome in the foreseeable future.

2.2.2. Likely Impacts and Consequences of Problems

Economic:

- High prices affecting sectors that drive the economy will be detrimental. They should be set in a manner that the supply industry, while recovering its cost, minimizes losses.

Social:

- Domestic tariffs are very low for low-user categories, offering a cushion to the low consumers ensuring that their basic electricity needs for lighting, ventilation, refrigeration (to a certain extent) and entertainment can be met within reasonable limits of the household budget. Since the public engages in other activities such as patronizing shops, sending children to schools and using hospital services, the tariff for these service providers are high which has an indirect cost passed on to the consumers. In this case, almost all sectors of the society will be affected by the distorted price structure and the high price levels.

Environmental:

- High prices may tend to encourage conservation of energy be it petroleum or electricity. This is a positive effect.

On the other hand, the "Time of use tariff" – which by itself is an excellent Demand Side Management (DSM) tool discouraging the use of electricity from the grid at peak times - compels some hoteliers, industrialists and commercial establishments to use very inefficient small diesel or even petrol generators for short durations that can be very harmful to the local environment. This is no longer relevant as the operational costs of generators are higher than all peak-time prices in TOU, except the (optional) TOU tariff for HH. Hence this may be removed, while retaining the TOU.

2.2.3. Remedies, Measures and Implementation

- Allow the PUCSL and CEB together with LECO to re-negotiate and arrive at a proper tariff structure and road map for tariff reforms and rebalancing to achieve the government's policy guideline requiring all customers to be charged a cost-reflective price. The government should not intervene except in the manner legally provided for.
- The tariff making should meaningfully incorporate DSM initiatives mapped by the SLSEA.

2.3. Reliability of Supply

2.3.1. Present Status, Issues and Problem Areas

The reliability of supply is a serious requirement especially for industries and to attract FDIs for development. The reliability of supply is poor at the distribution level and the stability against

generation outages is poor at the grid level. Although the reliability of the transmission grid is high on a national scale, there are still areas to improve in rural electricity supply schemes. Indicators that measure reliability of supply at the national level are loss of load probability and N-1 criteria. These are well within acceptable norms, though the very nature of the geographic locations of power plants and concentration of 900 MW in one location will cause unexpected situations to arise especially during times of inclement weather events. These are to be expected though not acceptable. In the distribution sector, there are indicators such as System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) which are monitored on a regular monthly basis. These factors too are quite at acceptable levels though some feeders may have very severe indices.

Indiscriminate implementation of power projects and embedded generation that depend on hydro, wind and solar without proper planning or protection systems in place is observed in the energy sector together with a situation where decision making is based on more socio - political drivers than technical drivers.

2.3.2. Likely Impacts and Consequences of Problems

Economic:

- Low reliability is a serious impediment to the growth of the economy. Instances such as local level supply interruptions whether planned or otherwise are detrimental. However there had been many projects in the T&D sectors for improvement especially with ADB and Japanese funding. These efforts are continuing with the hope that there will not be serious impacts to the economy.

Social:

- The public is inconvenienced by sudden power failures and such failures will erode public confidence in the utility.

Environmental:

- Reliability may have the least impact on the environment, although it can be misunderstood by the public who may try to purchase standby generators causing local environmental impacts which can be very severe for residents in the immediate vicinity.

2.3.3. Remedies, Measures and Implementation

- Base the entire management of the system from the planning stage to implementation (timing and locations) and operation on well proven scientific studies and on high level research into handling intermittency issues related to the introduction of renewable sources for generation and also a thorough review of system technical parameters in the whole system.

2.4. Inappropriate Generation Mix and Need for Lower Cost Generation

2.4.1. Present Status, Issues and Problem Areas

Sri Lanka produced 95 per cent of its electricity requirements from hydropower in 1995. Over the next 20 years, the generating system went through a transition, from a hydro-dominated system to a mixed hydro-thermal system. From year 2000 onwards, the share of thermal generation remained above 50 per cent, except in years 2010 and 2013 (which were good hydrological years).

While the transition to thermal generation was inevitable, lower cost coal-fired generation proposals were delayed for decades, and replaced with diesel or fuel oil burning power plants at approximately three times the cost.

Sri Lanka was one of the first countries to allow (i) private participation in power generation, and (ii) private sector led development of smaller power plants using renewable energy resources. All private investment on thermal power plants were in oil-burning plants, which helped keep load shedding at bay since 2002 but caused generation costs (excluding transmission and distribution) to reach its highest ever value of 18.34 Rs/kWh by 2013. With the coal-fired power plant in operation, the cost of generation has since declined to 12.67 Rs/kWh in 2016. However, with the increasing demand being met with diesel generation (in the absence of new coal-fired power plants), the forecast cost of generation for the year 2017 has increased to about 14.66 Rs/kWh, causing a requirement for tariffs in 2017 to be increased by 12 per cent. Tariffs, however, were not increased in 2017.

Successive governments intervened when CEB followed legal procedures to plan the generating system for the longer term, and to implement the plan. Interventions are continuing. Ad-hoc policy directives by successive governments on the types, fuels to be used and the location of major power plants resulted in no major power plants being built, and short-term solutions (diesel power plants) being implemented when a crisis approached. Emergency power has been contracted again in 2016 for the first time since 2001 and is presently operational.

2.4.2. Likely Impacts and Consequences of Problems

Economic:

- While international fuel prices remain stable, the cost of electricity production is increasing in Sri Lanka, owing to the increased use of diesel for power generation. This will adversely affect the balance of payments.
- Although the PUCSL has not been able to either secure a government subsidy for CEB or to implement a tariff increase, the CEB will require to further borrow funds for short-term cash requirements. The increasing debt of the CEB would further aggravate the delicate financial balance in the sector.

Social:

- Either a tariff increase or increasing CEB debts would cause losses to the sector, which would require to be finally paid by the society.
- Lending to the CEB ties up valuable capital of state banks, which should otherwise be used for productive investments.

Environmental:

Diesel power plants that replace coal and gas-fired power plants cause pollution at local levels.

2.4.3. Remedies, Measures and Implementation

- Allow the CEB to follow the procedures laid out in the Electricity Act 2009, to plan and implement generation projects, without government interference. Demand performance from the CEB to implement projects on-schedule, and make the CEB fully accountable to generation costs.

2.5. Energy Wastage and Losses on Supply Side

2.5.1. Present Status, Issues and Problem Areas

The PUCSL has conducted a detailed study and established targets for losses in each segment of the transmission and distribution network. CEB power plants operate without a power purchase agreement or a similar document that would hold the power plant staff responsible for its reliable and efficient operation. In independent power producers, since the payment is related to power plant availability and net energy dispatched, power plant efficiency improvement is a mandatory requirement in such profit oriented companies. Heat rate testing is not conducted in frequent intervals, although the PUCSL has given specific instructions to conduct such heat rate tests. Losses in transmission and distribution have the potential to be reduced to 7.5 per cent of net generation. This is a workable target and all licensees (CEB Transmission, CEB distribution and LECO) should be encouraged to work towards the target specified for each segment of their respective networks.

Lack of awareness and attention, and inadequate scientific analysis of losses among CEB transmission and CEB distribution are some of the causes of this issue. Although, regulatory loss targets are established for transmission and distribution licensees, CEB licensees do not adhere to the targets. This is because allowed revenue and income are not separated across the transmission and distribution licensees of the CEB. Good performance or underperformance is not rewarded or penalized, as it is in LECO, because allowed revenues are not matched with the end-of-year profits that should be reported by each licensee of CEB.

2.5.2. Likely Impacts and Consequences of Problems

Economic:

- Excessive losses within power plants and in the transmission and distribution network are wasteful, and cause electricity costs to be unnecessarily higher.

Social:

- The society believes that a large share of electricity is lost in the network. Information needs to be clearly published by the licensees and the PUCSL.

Environmental:

- Energy losses would result in unnecessary environmental impacts, which would be best avoided.

2.5.3. Remedies, Measures and Implementation

- Introduce financial separation of each generation, transmission and distribution entity of CEB, making each unit accountable for its key performance indices (KPIs), including loss targets.
- Incentives to be based on meeting KPIs, including loss targets.

2.6. Raising the Share of Renewables

2.6.1. Present Status, Issues and Problem Areas

Sri Lanka ranks high among countries which have a significant contribution from renewable energy in electricity generation. Raising the share of renewable energy is desired but has technical and financial implications.

Sri Lanka's share of renewable energy in the primary energy mix was 75 per cent in 1980, and has since declined to 51 per cent by 2015. Lower growth in biomass supply and use, compared with rapid growth rates in petroleum used for transport, and the growing demand for electricity being supplied with oil and coal are the main reasons for the declining share of renewable sources in the national energy mix. In electricity generation, the share of renewable energy has declined from 88 per cent in 1980 to 49 per cent in 2015. In a good hydrological year (eg: 2013), the share of renewable energy in electricity generation reached 60 per cent. Worldwide enthusiasm, declining capital costs and Sri Lanka's rich resources have generated interest among stakeholders in Sri Lanka to further increase the share of renewable energy based electricity generation. All major hydropower plants are owned by CEB Generation Licensee.

Under the small power producer programme, there are about 200 small power producers, supplying the grid on a feed-in-tariff. Owing to lower investment and higher capacity factor, most such private power plants are mini-hydros developed since 1996, while wind, solar and biomass power plants were developed after the technology-specific, cost-reflective feed-in-tariffs were announced since 2008. The ambitious target of meeting 10 per cent of generation from New Renewable Energy (NRE), which includes all renewable resources, other than the large hydropower projects set for year 2015 in the National Energy Policy of 2008, was met a year ahead of schedule in 2015, and now stands at 11.4 per cent. With the rising demand for electricity, the share of renewable energy is bound to shrink if the present mode of implementation is continued. Large scale deployment of renewable energy projects and a dedicated programme to promote rooftop solar PV might hold the key to achieve the 20 per cent target (by 2020) set for the NRE sector. Since 2010, net-metered connection of electricity generation from renewable energy sources was allowed, where customers were allowed to connect their generation to the grid, bank any surplus on a daily basis, and carry forward any remaining credit to the subsequent month. In 2016, this scheme was enhanced where customers were given the option of selling any surplus to the grid at a price of Rs 22 per kWh. The estimated capacity of such rooftop solar PV reached 80 MW by April 2017.

One of the primary concerns of the utilities in integrating more NRE projects to the national grid is the variability and seasonality of almost all the renewable energy sources. Seasonality, daily variations and intermittency of renewable energy sources for power generation requires backup capacity to be held in reserve (to counter seasonality) and backup capacity kept in operation (to counter intermittency). As Sri Lanka's non-renewable capacity is largely held with diesel power plants, such operational backup is expensive, while the single coal-fired power plant is operated on the base all the time to ensure economic production of electricity. Besides, both diesel power plants and renewable energy power plants do not offer stability to the grid, but cause instability, thus further compromising the overall reliability of the electricity supply. Sri Lanka does not have the ability to recover from a single generator loss without affecting customer supply, which is already available in all countries, except smaller island economies. The situation will aggravate if renewable energy is added in larger quantities without matching generation from base load power plants. Apart from the stability issue, the lack of transmission capacity in power lines and also in grid sub-stations is hampering the integration of more renewables to the national grid. These developments incur heavy expenditure and are beyond the reach of most private sector developers. There is also widespread misunderstanding of the impacts of renewable energy systems on grid stability, electricity economics and reliability. Hence careful evaluation of the impacts of renewables on the operation of the national electricity system is required.

2.6.2. Likely Impacts and Consequences of Problems

Economic:

- Increasing the share of renewable energy requires careful management to ensure the cost of electricity supply, and the reliability of supply are not compromised. Seasonality (hydro and wind, as well as biomass supplies), intermittency (wind and solar) or renewable sources, require management of costs and technical performance to ensure that Sri Lanka's grid does not go back to the era of uncertainty that prevailed in the 20th century. When Sri Lanka has almost a 100 per cent renewable energy-based generating system, load shedding was the norm once in a few years; load shedding was implemented in years 1974, 1979, 1983, 1987, 1992, 1996, 2001 and 2002. Whenever load shedding was implemented, the economy suffered immensely, as shown in drops in industrial and commercial sector value additions. Furthermore, in certain years, load shedding was avoided through heavy expenditure on small hired diesel power plants (eg. 1997, 1998, 1999, 2000, 2003, 2016, 2017), to overcome the uncertainty of renewable sources and to bridge the capacity gap owing to delays in major power plants. These expenses were directly or indirectly passed on to electricity customers, resulting in higher economic costs.
- Renewable energy is indigenous and increased share reduces the vulnerability to world market prices for fuel. Hence gradual decrease of fossil fuel energy through replacement with renewable resources is seen as a method for reducing the import burden of a country. At present, the NRE sector is contributing to save more than Rs 25 billion worth of fuel imports to Sri Lanka. Although some argue that import of expensive renewable energy equipment nullifies such benefits, recent studies by SLSEA indicate that most of the proven NRE technologies generate sufficient electricity to payback the initial costs within a period of 3-5 years. Compared to large scale fossil fuel power plants, renewable energy plants such as small hydro power plants can be built with local expertise in many places, contributing to reduce regional disparities.

Social:

- The society appreciates the addition of more renewable energy with some lobbying strongly for a 100 per cent renewable energy-based electricity generating system. Yet, technical and economic limitations require a cautious approach, so as not to further compromise the reliability of the power supply and burden the customers with further price increases. Given the distributed nature of renewable energy, these projects demand considerable land resources from many locations across the country. Some technologies such as small hydro and wind can have a significant impact on communities by way of curtailing access to resources (water) and other nuisances (noise and construction impacts). Hence large scale opposition to NRE projects (more specifically small hydro projects) is seen from the general public in project site locations. Therefore, it is critical that stakeholder communities are informed through consultations regarding projects, to avoid conflict and opposition from those that might be adversely impacted.

Environmental:

- Compared to other infrastructure projects, NRE projects pose very little impact to the environment when in operation. However, a considerable burden is expected from this equipment at disposal stage. There are hence positive impacts on the environment when the share of renewable energy is increased. At present, a large number of projects remains without

being developed, due to technical, social, political and economic reasons though NRE projects are implemented after careful investigation of environmental impacts.

2.6.3. Remedies, Measures and Implementation

- Maintain a good balance between renewables and conventional generation to ensure technical and economic stability of the grid supply. CEB's long-term plan, associated studies and international reviews of the plan have confirmed that the government's targets for 20 per cent of renewables (excluding large hydro) can be met, provided major power plants (coal-fired and R-LNG fired) too are built. Studies, however, have confirmed that Sri Lanka will not reach the required reliability level of being resilient against the outage of a large generator, with such a rapid development of renewable energy-based generation, amidst a pool of diesel and hydropower, which too have little contribution to stability.
- Conduct a careful study of the NRE resources and electricity demand that would yield a road map for integration of more renewable energy with definite capacities. Such information can be used to develop an NRE integration plan which can be used to encourage public and private sector investments in the sector.
- Improve the transmission infrastructure substantially to transmit the power generated from NRE sources to load centres. The Government should make such investments to realise the NRE integration plan implementation. Such development programmes can also launch large scale NRE projects, typically in the range of 100MW which will contribute in required measures towards the 20 per cent target.

2.7. Increasing Debt Portfolio

2.7.1. Present Status, Issues and Problem Areas

Debt portfolio of CEB has increased immensely over the years, from 34 per cent of the capital at the end of 2007 to a highest of 72.9 per cent of the capital at the end of 2012. After conversion of debt of Rs 161.7 billion to equity by the GOSL in 2014, the share of debt still remains high at 48.7 per cent at the end of 2016. Timely implementation of existing long term expansion plans in generation and transmission, and distribution system expansion plans will cause the debt portfolio to increase to a level beyond 65 per cent of the capital by 2025.

Since mid-1990s, the power system of Sri Lanka has gone through many large changes, including change in the generation mix from almost 100 per cent hydro to 50 per cent hydro and other renewables and 50 per cent thermal in recent years. There has also been an increase of power system reliability such as avoidance of load shedding and an increased electrification from 45 per cent households in 1995 to near 100 per cent households at present. All these changes complementing each other in achieving energy policy elements of the National Energy Policy of 2008, have either caused an increase in the operating cost or required large investments in infrastructure which the CEB has been unable to meet with the revenue earned through sale of electricity.

Since 2000, the CEB has repeatedly reported losses except in 2003, 2010, 2013 and 2015. In 2016, selling at an average price of LKR 16.18 per kWh against the average cost of supply of LKR 17.37,

CEB incurred a loss of Rs 14.5 billion. Prior to 2000, CEB had never reported a loss²⁷. High generation costs, low retail tariffs to the household category, and non-payment of subsidies are the main reasons for the losses reported.

High reliance on oil fired generation in the past had made the CEB highly vulnerable to oil prices. Increasing oil prices coupled with the inability to pass it through to electricity users have imposed severe constraints on the cash flow of the CEB affecting its profitability and the ability to service its debt to the government. Furthermore, the CEB has financed the continually increasing working capital requirement with short term commercial borrowings adding more to its debt and diluting its debt service ability. Commissioning of Sri Lanka's first coal fired power plant in 2012 resulted in a significant reduction in the average cost of supply improving the cash flow of CEB assisting it to repay most of its short-term debt from commercial banks. Commissioning power plants with low operating cost will improve the CEB's ability to overcome the present debt burden.

Adoption of a cost pass through tariff methodology in 2010 was expected to resolve many financial issues of CEB, by achieving cost reflectivity in tariff and recognising the actual subsidy to be received from the government by financially ring fencing generation, transmission and distribution businesses of CEB. However, after six years from introduction, the tariff methodology is yet to be fully implemented by both CEB and the PUCSL. Hence the retail tariff lag far from cost reflectivity and subsidies due from the government is not clearly recognised.

Thus the main factors contributing to CEB's increasing debt portfolio have been; (i) large investments made in generation, transmission and distribution assets in order to improve the quality and reliability of electricity supply and make grid electricity available to all parts of Sri Lanka and (ii) the deficit between revenue collected and cost of supply.

2.7.2. Likely Impacts and Consequences of Problems

Economic:

- Debt taken by the CEB over the years has positive and negative impacts on the economy of Sri Lanka. Investments that CEB made in power sector infrastructure over the last two decades have resulted in improvements in the quality of supply and increased access to grid electricity and both have directly and indirectly assisted economic development in Sri Lanka. Availability of uninterrupted and low cost electricity is a factor conducive for foreign direct investments while extending access to electricity has assisted rural economic development in many ways.
- As one of the largest borrowers in Sri Lanka from bilateral and multilateral funding agencies, CEB borrowings have constrained other sectors of the economy by means of limitations in borrowing capacity, increased taxes to repay loans and depreciation of the rupee.

Social:

- Similar to the economy, the society at large has benefitted from investments CEB has made over the years. Expansion of access to electricity has improved living standards, increased employment opportunities and provided better connectivity through improved communication and access to information. However, a majority of the society reaps these benefits below the cost of electricity supply. Without full implementation of the tariff methodology, the subsidy required to supply electricity below the cost is not known. This

²⁷Sri Lanka Energy Balance, Sri Lanka Sustainable Energy Authority

unrecognized and unpaid subsidy results in shortfalls in the cash flow of CEB and inability to service its debt. Irrespective of the CEB's default to the government however, the government continues to repay loans to lending agencies with taxes collected from the society.

Environmental:

- The large debt portfolio has affected the investment capacity of CEB. Hence, at times, it may affect CEB's ability to invest in capital intensive energy efficient options and may force the CEB to select the less efficient option which requires a lower investment.

2.7.3. Remedies, Measures and Implementation

Recovery of the actual cost of supply by the CEB is essential in recovering from the current dire situation. Full implementation of the tariff methodology will ensure recovery of the cost of supply providing sufficient cash flows to meet energy costs and service its debt. In addition, the return on assets guaranteed by the tariff methodology, together with a portion of allowed depreciation can be used to meet a part of future investments, reducing the requirement to borrow. Furthermore, financial ring fencing generation, transmission and distribution businesses of CEB and establishment of the bulk supply transaction account recommended by the tariff methodology, will result in recognition of the subsidy due from GOSL for providing electricity below the cost of supply to a majority of the household category. Recovery of cost of supply by means of tariff and GOSL subsidy, and return on assets will lead the CEB to financial sustainability in the long term.

2.8. Managing Private Sector Investments

2.8.1. Present Status, Issues and Problem Areas

An institutional mechanism for managing the private sector investment in the power sector is not functional at present. As per the procurement guidelines for private sector infrastructure projects on BOO/BOT/BOOT basis published in January 1998, the Bureau of Infrastructure Investment (BII) of the Board of Investment of Sri Lanka (BOI) will function as the promoting, facilitating and coordinating agency. BII is no more in existence. Hence, the applicable laws and policies are not clear at the moment and institutional structures are not defined. Procurement Guidelines 2006 for Goods and Works has no reference to BOO/BOT/BOOT projects financed/ developed by the private investors.

Few institutions facilitate private sector investments in the energy sector. Sri Lanka Sustainable Energy Authority (SLSEA), which allocates renewable energy resources, acts as a facilitator for investment in the renewable subsector, especially in streamlining the authorization processes of various government Institutions. The Board of Investment, Petroleum Resources Development Secretariat (PRDS) and the recently established Public Private Partnership Unit of the Finance Ministry are the other key institutions that facilitate investment in the energy sector.

Under the provisions of the Sri Lanka Electricity Act No. 20 of 2009, the electricity generation sector is open for private investments and if a particular investment is larger than a 25MW plant capacity, a government shareholding is required. The said Act requires open bidding for generation plant procurement and the related procurement guidelines are already published by the PUCSL. In the petroleum sector, the PRDS is in the process of tendering the resource development areas for

upstream development, while the downstream sector (except for common infrastructure) is partially liberalized and open for private investment. The ministry in charge of petroleum resources development, which acts as the regulator, also contributes in facilitating private investment in the petroleum sector.

There is lack of a clear policy and varying modalities often tied to private finances that can greatly endanger the whole process of procurement of power plants in a manner that will benefit the country. The National Procurement Guidelines too should ensure the procurement of such plants to ensure value for money and cost effectiveness of such procurement. Hence if private sector participation is expected in power projects, the procurement guidelines need to be amended to suit present context.

2.8.2. Likely Impacts and Consequences of Problems

Economic:

- There is a direct impact on the economy that financing the power sector by private financing will release the government from the burden of sourcing either bilateral or multilateral funding in the power sector. However, this should not bring about undesirable economic consequences such as tied government to government loans without adequate flexibility in sourcing the best technically sound generating facilities.

Social:

- It is not clear if the source of funding will be an issue for the society as long as least cost principles in planning and plants that conform to the requirements of the utility are purchased. However only competitive bidding for such procurement will ensure lowest tariffs under the IPP or PPP mechanisms as otherwise, the society will be affected due to high tariffs.

Environment:

- There should not be any significant environmental burden as long as the investments are done following competitive bidding and the plants that are purchased conform to all environmental standards.

2.8.3. Remedies, Measures and Implementation

- To enhance the potential for more private sector investments in the electricity sector, there should be a clear policy on which basis such investments are to be procured. Very often, the structure of securing investments, the type and specification of the plants to be procured are incomparable even in an environment of competitive bidding. There is a greater tendency for unsolicited proposals to be considered when efforts are made to secure private sector financing of power plants. There is also a need to strengthen the role played by the SLSEA in facilitating renewable energy sector investments. Establishment of a proper regulatory regime is a prerequisite for downstream petroleum sector investments.
- Amend procurement guidelines appropriately to attract private sector participation.

2.9. Large Investment Need for Infra-Structure Development in the Power & Energy Sector

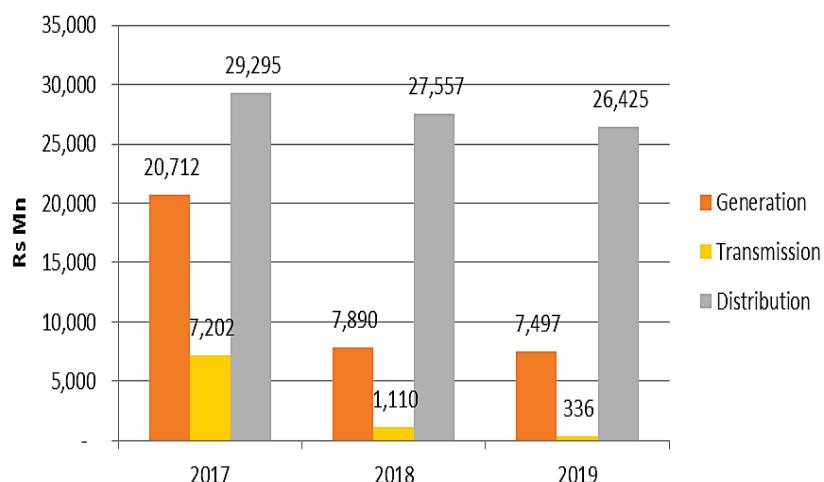
2.9.1. Present Status, Issues and Problem Areas

Growth in the power and energy sector is coupled with the country's economic growth and generally requires large investments for infrastructure development. Ensuring the proper and timely implementation of energy sector infrastructure is crucial to driving the economy and sourcing funds for such large-scale investment is challenging for a developing economy.

In the power sector, the electricity demand and the capacity is expected to nearly double by 2030. The generation expansion alone requires nearly USD 550M each year on average for the next 20 year period. Further investments are needed for the transmission and distribution system development. Prioritizing all these investments together with other sector requirements is important to enhance economic competitiveness and the welfare of the country.

Power sector investments are capital intensive in nature and have a long economic life time. Any unnecessary delay in investments will entail even more serious economic impacts in terms of the ability to meet the demand. Until the end of 2019, these investments are shown in Figure S3.2.

Figure S3.2. Power Sector Investments until 2020



2.9.2. Likely Impacts and Consequences of Problems

Economic:

- The investment requirement of power and energy sector is relatively high, and efficient management of the investments will contribute to the country's economic performance. The funds required for investment in new power facilities could be in the form of government funds, private funds (such as Independent Power Producers-IPP and Joint Ventures-JV) and Public and Private Partnerships (PPP). The funding could be obtained through sources such as Official Development Assistance (ODA), export credit, local commercial loans, concessionary loans and grants by other developed countries. Though these options have their own merits and demerits to varying degrees, the total cost of capital and the financial cost of capital are ultimately borne by the public/economy directly or indirectly. The energy intensity of the economy should be given consideration. Careful analysis of the economic impact of energy sector projects is very

important as they can affect the macroeconomic stability in the long run and can enhance the economic competitiveness of the country in the region.

Social:

- As the energy sector investments directly influence the national economy, it will affect the country's fiscal policy. Even though the sector is cross subsidized it will ultimately affect the public. The benefits received and the costs borne by different parts of the society is important in managing the energy sector.

The country is almost 99 per cent (98.71 per cent in June 2016) electrified and has nearly 6 million (5,964,194 by the end of 2016) consumers. As the electricity service is accessible in almost all parts of the country, it is the affordability that comes next, both for the individual and a society at large. Implementing a development plan with the least economic cost and acceptable reliability level can ensure the affordability and the reliability of the service for consumers as well as other stakeholders.

Environment:

- Large scale projects do have environmental impacts and it is the mitigation of such impacts that is important. Power and energy sector has the highest contribution towards global environmental implications as well as certain impacts on the local environment. One of the main challenges is that the environmental impact mitigation cost is added to the high capital costs required for essential energy sector projects. Decarbonizing the electricity sector is less complex compared to other forms of energy use. National commitments and international support play a major role in realising such mitigation measures in the sector. The latest long term generation expansion plan has identified an energy mix scenario at an additional cost for the next three years, including a higher percentage of low carbon technologies. In terms of local environmental impact mitigation, as a country with stringent environment regulations, each large-scale energy project has to undergo a strict environmental impact assessment

2.9.3. Remedies, Measures and Implementation

- Identify the most economically efficient trajectories for sector development with clear and consistent policy objectives.
- Promote energy efficiency and other DSM measures for the efficient utilization of the infrastructure.
- Timely implementation of pre-determined projects and ensuring maximum benefit to the economy by each individual project.

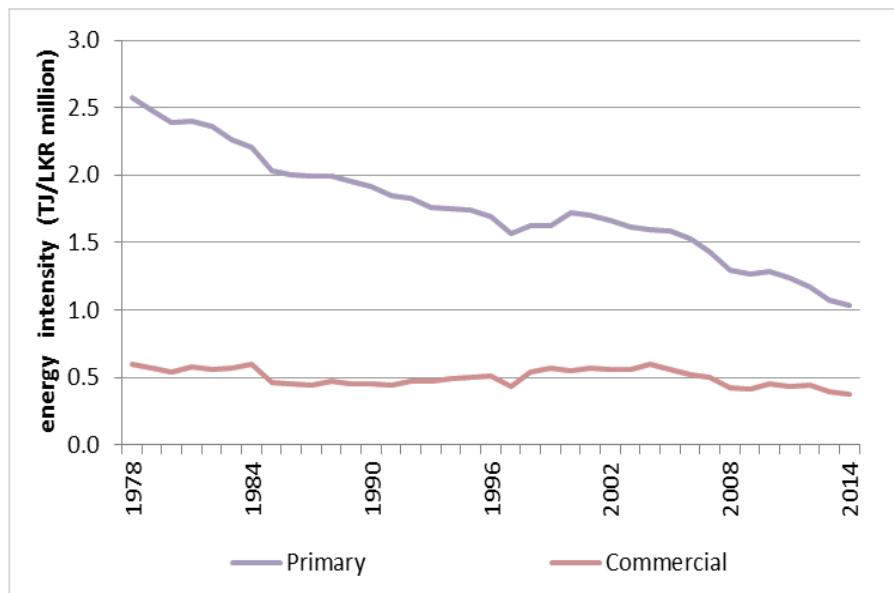
2.10. Inadequate Energy Efficiency Measures

2.10.1. Present Status, Issues and Problem Areas

There is a considerable potential for energy efficiency in the country, not only in electricity sector but also in thermal and transport sectors. Compared to most countries in the region, almost all the necessary elements for a successful EE&C effort are available in the country. However, the implementation of energy efficiency projects in the country is at a very low level at present except in the transmission and distribution loss reduction in the electricity sector. The energy intensity of the economy is showing long term stability. This means that with a relatively lower quantity of

energy, the country is producing more economic output. This declining trend of the energy intensity of economy is presented below.

Figure S3.3. Energy Intensities of Economy



It is noticeable that the commercial energy intensity has remained at the same level for a considerable period. Despite these favourable conditions, there is vast potential to improve energy efficiency in many end user applications. Among the constituents of this potential, a recent study by the Sri Lanka Sustainable Energy Authority (SEA) identified key thrust areas which can have a deep impact as presented in Table S3.2.

Table S3.2. Key Thrust Areas and Energy Saving Potential by 2020

Technology	Saving by 2020 GWh
Efficient Lighting	549.1
Efficient Fans	298.2
Efficient Motors	248.2
Efficient Refrigerators	227.3
Energy Management System &BMS	212.2
Eliminating Incandescent lamps	139.4
Efficient Air Conditioning	125.4
Green Buildings	44.7
Efficient Pumps	43.4
Other	7.1
Total	1,895.0

Similar opportunities could be found in both thermal energy and transport energy systems, but the lack of credible data and lack of a coherent policy in these sectors limits this discussion to the electricity sector.

The Sri Lanka Sustainable Energy Authority (SEA) has identified many barriers to implementation of energy efficiency and conservation (EE&C) projects. SEA has initiated many programmes in the EE&C sphere and is supported by a well-developed policy and regular regime. However, there are many barriers to the implementation of EE&C tasks in the country which can be grouped to five main clusters as below:

- (i) Policy & Regulatory;
- (ii) Economic & Financial;
- (iii) Institutional & Relationship;
- (iv) Technology & Information; and
- (v) Knowledge & Investments;

In essence, this means a failure of the energy efficiency market, despite the vast potential available.

2.10.2. Likely Impacts and Consequences of Problems

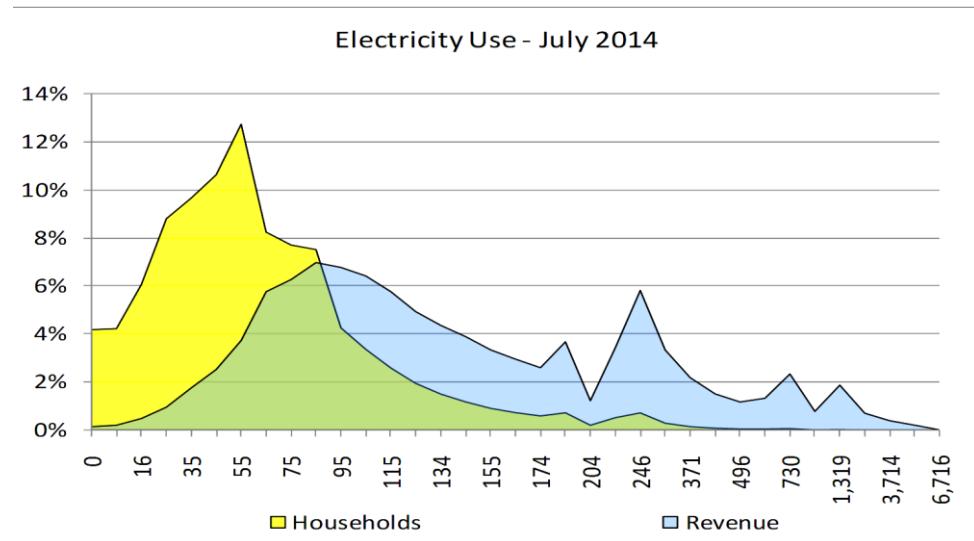
Economic:

- The room left for inefficient use of electricity at all end user points is a direct result of the higher cost of efficient technologies and lower price of electricity as perceived by a particular end user group. Consumers are compelled to buy cheaper equipment with poor energy performance, and waste energy since the additional cost of better equipment cannot be recovered from energy savings when energy is sold at very low prices. However, the resultant situation causes considerable economic loss as the electricity sold at low prices is actually worth much more than the value perceived by the consumer at national level. The prevalent scheme of things can cause large scale damage to the national economy.

Social:

- A majority of Sri Lankan residential consumers use less than 90kWh of electricity in a month. This majority group is provided with a standard electricity connection and energy at a price much lower than the average cost of generation. This group is considered to be low income families, with little or no disposable income to afford efficient appliances. Hence many homes are still using incandescent lamps as the primary source of lighting causing significant contribution to peak electricity demand in the country. Removal of tariff subsidies granted to this low income groups can have large scale social upheavals. Nevertheless, it must be mentioned that electricity remains a very low impact item on the budget of these families, often a fraction of their expenditure on communication and entertainment. Figure S3.4 below shows the frequency distribution of residential customers of the whole country in the month of July 2014.

Figure S3.4. Frequency Distribution of Customers at Different Usage levels (kWh per month)



Environmental:

- Efficient use of any resource is an attempt to lessen the environmental burden. Hence energy efficiency is considered by the International Energy Agency (IEA) as the first fuel, meaning it should be considered as the first priority. Irrespective of the mercury pollution scare, the compact fluorescent lamp (CFL) promotion saw a reduction of peak electricity demand by a margin of 300MW, avoiding a large volume of CO₂ emissions from peak power generators. If sufficient safeguards can be built into programmes to deal with the waste generated from the replaced obsolete equipment, energy efficiency can be seen as the most environmentally benign intervention to arrest the growth of demand in the electricity sector.

2.10.3. Remedies, Measures and Implementation

- In order to deploy a large-scale EE&C effort, these barriers have to be systematically removed. As the primary tool in unlocking the EE&C market, the removal barriers were grouped to each of the eight key thrusts identified by the SEA as packages of measures. Implementation of the programme will be targeted to serve three market segments, i.e. industrial, commercial and residential/SME/Government segments. The first two market segments will be served mainly by the utilities, in association with Energy Services Companies (ESCOs), energy auditors, energy managers and a panel of consultants. The large volume residential/SME/government segment will be served by SEA through an appliance control initiative. These implementation strategies will also contribute to creating a strong market for energy efficiency and nurture an ecosystem to sustain the market development.
- The urgency of assignment succeeded in attracting unwavering political commitment and close coordination of many entities, which prompted SEA to name the programme as Operation DSM. The programme will be led by a Presidential Task Force (PTF) and guided by a National Steering Committee (NSC) and implemented by a Programme Management Unit (PMU) within the SEA.

- The ODSM will be a joint effort of several closely networked entities, whose relationships will be governed by a well-developed transaction processing system (TPS). This TPS will keep a close tab on actual energy savings and fund flows to establish a good monitoring, reporting and verification (MRV) framework. Smart grid and smart metering technologies will be the foundation of this TPS and also facilitate the accounting aspects of the automated demand response (ADR) elements in the ODSM.

2.11. Environmental and Social Concerns - Carbon Emissions

2.11.1. Present Status, Issues and Problem Areas

Energy sector, being a main driving sector of the economy, has a significant impact on both global and local environment as well as social implications. The country's energy sector is gradually transforming from a very low carbon status two decades ago to a fossil fuel based sector, but is also ambitious about maintaining its green credentials in the sector as a long term strategy.

Sri Lanka's CO₂ emission was 16.74 million tons in 2014 and this represents 0.05 per cent of the global total carbon emission. Nearly 48 per cent of country's carbon emission comes from the transport sector and 41 per cent is from the electricity sector. The electricity sector, being less complex than the transport sector in terms of decarbonizing, has seen several measures initiated by CEB to reduce carbon emissions while maintaining the economic cost at optimum level. However it is still a costly option.

2.11.2 Remedies, Measures and Implementation

Sri Lanka, being highly vulnerable to climate change impacts has adopted many policy measures that would result in climate change adaptation and mitigation although emission levels are much less than the global values. It is estimated that the total emission contribution of GHG emissions from Sri Lanka is as minute as 0.05 per cent of the global total. Even though the Kyoto Protocol has not imposed any obligation for non-Annex I countries, Sri Lanka also ratified the Kyoto Protocol as a non-Annex I country in 2002. Sri Lanka has also ratified the Paris agreement on SDG.

- The CEB has taken steps to reduce emissions through efficient technologies for coal power plants by introducing high efficient super critical technology instead of subcritical technologies. By introducing high efficient technologies, CO₂ emissions could be reduced by 12-16 per cent compared with subcritical technologies. The CEB has initiated to develop remaining major hydro power projects although they involve higher capital cost.
- In LTGEP, other renewable energy share is optimized and maintained at more than 20 per cent by 2020 onwards and would result in reduction of emissions from power generation considerably. With the proposed introduction of 3x200MW Pumped Storage Power Plant and high ORE, green credentials of the system would be maintained at around 50 per cent of the country's energy share.
- In February 2009, the Ministry of Environment and Natural Resources as the Designated National Authority (DNA), to the UNFCCC and Kyoto Protocol, at the time, developed a draft National CDM Policy. The CDM allows emission reduction projects in developing countries to earn Certified Emission Reduction (CER) credits, which can be traded and used by industrialized countries to meet part of their emission reduction targets under the Kyoto

Protocol. In Sri Lanka, the key sectors to implement CDM projects can be identified as energy, industry, transport, agriculture, waste management, forestry and plantation. Among these, the energy sector has been identified as having the highest potential.

First CDM project in Sri Lanka was registered in 2005 with UNFCCC. By end 2013, 17 projects have been registered. CEB has undertaken one of the large scale projects which is Broadlands Hydro Power Project. The estimated emission reduction from the project is approximately 83 kilo tonnes of CO₂ equivalent per annum.

- Sri Lanka has initiated a carbon crediting programme with the World Bank where the emission reductions above the NDC targets will be transferred to the Carbon Partnership Facility (CPF) of the World Bank. The CEB acts as the trustee and any private power producer who is willing to join the scheme will have to transfer the carbon credits through the CEB. Carbon revenue received in this manner may be used to overcome technical and financial barriers for renewable development.

There are different pricing approaches to determine the terms of the carbon finance payment. Diverse country and sectoral context as well as relationship with countries' NDC targets also need to be considered during the process of price determination.

Since there is no valid market reference point, various techniques such as administrative pricing including incremental cost analysis, investment analysis, economic evaluation or auctions can be used. Economic evaluation option under administrative pricing can be carried out without the need of detailed data. The price should be determined by negotiation between buyers and sellers taking into account the sellers' willingness to accept and buyers' willingness to pay.

3. Sustainability Perspective – 2020 and Beyond

2020

Renewable energy options show promise for the future. Sri Lanka is a tropical country, blessed with abundant sunshine. We have moderate wind speeds, but being a small land mass exposed to the sea, the wind persists (for most parts of the year) near the coastal belt especially in the north western to northern land mass and south eastern land mass. There are very high winds (mostly seasonal) in the hill country and wind gaps as well. Sri Lanka could also plant fast growing tree crops suitable for biomass based power generation. Most of our garbage is bio-degradable hence if there is any energy to be extracted one popular method would be anaerobic digestion and a small quantity of energy derived through the thermal route.

Most of renewable energy systems such as Solar PV both small scale roof top and MW scale grid connected power plants, wind, and to a certain extent biomass are being actively pursued by the private sector in particular, and CEB in the case of wind. There are also a few waste to energy projects being pursued.

Sri Lanka will continue to be a green country as far as the energy scenario is concerned. Most of our large traditional and small scale hydro resources have been almost fully harnessed. The renewable energy share in the primary energy supply including biomass and hydro has dropped from about 80 per cent in the late 1970s to about 48 per cent in 2015, although there has been an appreciable increase in terms of contribution of renewable energy in the primary energy supply.

This means that though there has been a shift in certain categories, especially in the urban household energy mix, the country is making good progress in the utilization of renewable energy sources.

Increased penetration of renewable energy and distributed electricity generation with customer participation requires careful management of the transmission and distribution network. This will ensure the quality and continuity of electricity supply to all customers, in line with the increasing reliability needed in a modern economy. Implementation of demand management initiatives that include wide and discretionary participation by customers to manage and save energy, responding to utility signals on price and other incentives, require advanced metering infrastructure. CEB and LECO have already commenced pilot implementation of smart metering infrastructure, and will implement several more pilot projects in 2018 and 2019. Further, smart and pre-paid meters would be provided on request to any customer, starting in 2018, to enable customers to manage and monitor their own consumption, with or without utility intervention.

2025-2030

The draft "National Energy Policy and Strategies of Sri Lanka" states: "A paradigm shift of policy is envisaged to defend and improve the share of renewables in the primary energy supply from the 55 per cent level maintained during the last decade". This supports the Intended Nationally Determined Contributions (INDCs) according to the Paris agreement (COP 21) and SDGs. Sri Lanka is committed to reducing GHG emissions by 20 per cent (4 per cent unconditional and 16 per cent conditional) from the business as usual scenario.

In keeping with the above targets 414MW of Wind and 410MW of Solar by 2020 and 894MW of Wind and 1009MW of Solar are to be introduced by 2030 according to the 2018/2037 LTGEP. This will greatly reduce the GHG emissions by about 20 per cent in the power sector alone.

Implementation of "smart" and sustainable initiatives will complement the renewable energy initiatives in the electricity sector, to facilitate a wide range of distributed generation, smart grid, smart metering and demand management options that are planned. These initiatives will sustain future developments, including climate change related commitments, and technological progress such as electrified railways, autonomous electric cars, smart city requirements, etc.

S4. HEALTH²⁸

1. Current Status

Sri Lanka is known for its effective health service delivery at a reasonable cost when compared with other countries. There have been significant achievements in preventive and curative services in the government led health delivery system. Notable strides have been made in increasing life expectancy and reducing some of the common killers associated with child and maternal mortality. Major progress has been made on increasing access to clean water and sanitation, elimination of malaria, poliomyelitis, filariasis, control of vaccine preventable diseases, tuberculosis, and the spread of HIV/AIDS. However, many more efforts are needed to fully eradicate a wide range of diseases and address many different persistent and emerging health issues such as non-communicable diseases (NCDs - cardiovascular disease, chronic respiratory disease, chronic kidney disease, trauma, mental health, and cancer) and other health challenges of an ageing population.

The main strengths of the healthcare system in the past have been its equity, system efficiency, good health outcomes, and relatively low costs for government and households. It afforded the poor protection against financial risk of illness. Most out of pocket expenditure fell on the richer households. However, the pattern is changing with increase of NCDs.

The main weaknesses arise from under-funding or not rationalizing development priorities such as skewed investment for specialized care, while compromising primary care, which can form a wide base for greater coverage if the delivery scope changes to address the current needs i.e. hospital services do not meet the demands for services and amenities of discerning individuals who are forced to seek care from private sector institutions. In the long run, this may destabilize the health system and undermine political support for government health services.

The system has also failed to keep pace with modern techniques to manage treatment of chronic NCDs, with lack of funding hampering re-orientation. Consumer expectations have increased as regards better health care amenities, consumer oriented service approach by staff, and organizational flexibility made possible by technology. This gap too cannot be bridged without the necessary financial support.

2. Critical Issues, Impacts and Solutions

2.1. Issues and Problem Areas

2.1.1. Declining Public Sector Funding

The fiscal deficit has resulted in mounting public debt, constant pressure on the exchange rate, and the inability of the government to increase social expenditures or to invest in needed physical infrastructure. This has unfortunately led to the Sri Lankan public health services being severely

²⁸ Writing Team: P.A. Gooneratne (Leader), Ruvaize Haniffa, Palitha Bandara, Ajit Amarasingha, and Maruieanne Samaraweera

underfunded, which hampers the ability of the system to sustain itself in the face of a growing ageing population, changing epidemiology and medical progress.

2.1.2. Overcrowding in City Hospitals

It should be borne in mind that the reduced funding and unequal distribution of health resources has caused congestion in the larger hospitals, and a gradual decline in physical infrastructure and quality of healthcare amenities. Overcrowding in city hospitals causes strain on personnel and breakdown of infrastructure, possible misdiagnosis or negligence causing longer stays in hospitals, potential spread of communicable diseases, and patients not getting optimal level of care as medical teams can spend less time with each patient. As patients continue to seek a reasonable standard of healthcare, and are called upon to sustain even higher levels of 'out of pocket' expenditure, this will have negative political consequences as well.

2.1.3. Aging Population

With low fertility rates and high life expectancy, Sri Lanka will be one of the most rapidly ageing societies in Asia in the coming decades. This demographic shift is already reflected in the age structure of the population, which is no longer pyramidal as in most developing countries.

2.1.4. Changing Disease Patterns Requiring New Adaptations

The changing disease patterns from communicable to non-communicable diseases now require a different type of health service, with more attention given to continuity of care due to chronicity of conditions such as diabetes, hypertension, ischemic heart disease, stroke, chronic kidney disease, and mental health problems which are of high prevalence. This shift also requires prevention strategies that are family oriented and personalized. Management of these health conditions require a universal coverage of a range of services to be available at primary level, supported with appropriate referral for specialized care, training and community education.

2.1.5. Inadequate Attention to Primary Care

Sri Lanka has developed its specialized hospitals to an extent that the patients prefer to seek health care at the specialist hospitals even for minor ailments (base hospitals and above) whilst bypassing primary level institutions that are closer to home. The health budget has been supporting the expansion of specialized facilities which leave primary level facilities less developed and unattractive to the public.

Decentralization has also contributed to an unequal distribution of health resources, and expanded specialized services, thus reducing the funding for primary care. The lack of a referral/ gatekeeping system to filter access to specialized services, accentuates the by-passing of primary level care and congestion at major hospitals. Chronic diseases are not catered for and the individual is left to negotiate his/her own way through this problem entailing much out of pocket expenditure.

According to the annual health bulletin 2014, the number of patients seeking OPD treatment at state healthcare units was 55 M i.e. ten times more than those seeking admission to state hospitals (4.9 M). More than 95 per cent of in-patient provision is dominated by the state sector, whereas the out-patient load is shared with the private sector. MOH facilities form a network of over 1000 institutions. Most Sri Lankans live within 3 km of a public health facility. Most out-patient services

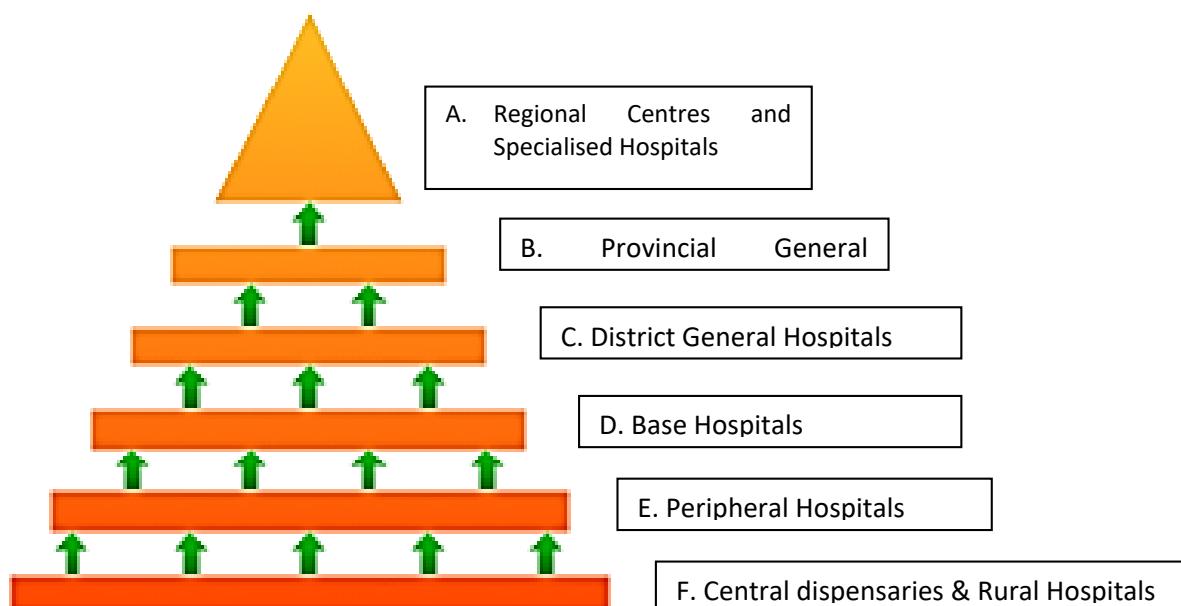
are provided by government medical officers. The above 55M does not include patients seen in the private sector (approximately 50M) and by general practitioners which are estimated to be approximately 15M per annum.

2.1.6. Maternal and Infant Mortality Rates

Although better than most South Asian countries, maternal mortality rates need to further reduce from the current rate of 30 per 100,000 live births while Infant mortality rates need to further reduce from the current rate of 11 per 1000 live births. Contributory factor may be archaic beliefs and persistent taboos.

2.2. Remedies, Measures and Implementation

Establish a hierarchical Cluster System as follows:



The proposed structure will encompass the following categories of Health Care Units.

Facilities	Categories of Hospitals					
	A	B	C	D	E	F
	Regional	Provincial	District	Base	Peripheral	Rural
Cardiac Surgery	*					
Cardiology	*	*	*			
Neurosurgery	*					
Neurology	*	*	*			
Oncology	*					
Nephrology with Dialysis	*	*	*			

Urology	*	*	*			
Plastic Surgery	*					
Transplants	*					
Facio – Maxillary Surgery	*					
IVF	*					
Psychiatry	*	*	*			
Gastroenterology	*	*	*			
Orthopaedics	*	*	*			
Ophthalmology	*	*	*	*		
ENT	*	*	*	*		
Accident & Emergency	*	*	*	*		
MRI	*					
CT Scanner	*	*				
Lab Services	*	*	*	*	*	
Blood Bank	*	*	*	*		
General Surgery	*	*	*	*		
General Medicine	*	*	*	*		
Paediatrics	*	*	*	*		
Obstetrics & Gynaecology	*	*	*	*		
Radiology	*	*	*	*		
Dental Services	*	*	*	*		
Anaesthesia	*	*	*	*		
Micro Biology	*	*	*			
Histopathology	*	*	*			
Dermatology	*	*	*	*		
Psychiatry	*	*				
Forensic Medicine	*	*	*			
Stroke Unit	*	*				
Physiotherapy	*	*	*	*		
Endocrinology	*	*	*			
Ambulance Service	*	*	*	*	*	
OPD	*	*	*	*	*	*
Geriatrics	*	*	*			
Pharmacy	*	*	*	*		

- In order to raise the standard of healthcare provision throughout the country and optimize use of state-sector hospitals, healthcare units must be classified based on their facilities and expertise, and a standard package of services assigned to each category. It would also be necessary to introduce a referral system, easy access to patient records, training, community education, and IT systems to increase efficiency. Furthermore, issues of equity and access to preventive and curative health and nutrition services should be addressed.

- Reorganize the existing healthcare facilities in the curative system, to accommodate referrals and back referrals to ensure continuity of care. This includes the allocation of resources for doctors, availability of essential medicines and access to lab tests.
- A supervision tool to be developed and pre-tested, and given to provincial health authorities to supervise primary care institutions as a circular.
- Request the UGC and medical faculties to focus on education reform to develop relevant competencies for primary care.
- Establish monitoring systems to ensure availability of medicines at primary care units.
- Introduce an incentive structure for MOs in primary care.
- Design pathways to career progression for MO's in primary care.
- Develop outreach support mechanisms - where specialists in apex hospital can provide clinical guidance to doctors in surrounding primary care hospitals - to build confidence - for better patient care.
- Conduct public education on sanitation, healthcare standards, and sustainable lifestyles (diet, exercise, etc.).
- Increase aged-care facilities and age-friendly facilities in public areas.
- Increase inpatient, outpatient and laboratory services.

3. Sustainability Perspective – 2020 and Beyond

By 2020, a transparent procurement system would be established, to deliver quality non-consumables and consumables. Electronic medical record keeping would be set up. The government would control and manage the issue and use of hazardous materials. All patients would be registered under a board certified general practitioner.

In the 2025-2030 period, Sri Lanka should be able to maintain a vibrant, sustainable and customer-centric national healthcare system that ensures healthcare options and good health outcomes to all Sri Lankans, making the best use of available resources. A countrywide national health insurance scheme would be established, and public private partnerships would become more prevalent. By 2030 it will be possible for all Sri Lankans to experience an international standard of health care in any part of the country with facilities to obtain a patient's health records at any given time, making use of electronic technology. This would encompass alternative medicine (ayurveda, homeopathy, yunani, siddha, etc.) facilities which would, along with International accreditation, enhance prospects for medical tourism. The public private partnership combined with a national health financing scheme will ensure affordable Health for all, including the uninterrupted availability of essential drugs and other consumables according to the grade of the institution, thereby making the SDG-Health vision come true by 2030.

S5. MARINE RESOURCES²⁹

1. Current Status

Oceans play a vital role along three dimensions of sustainable development –social, economic and environmental. As an island nation, oceans are also an essential component of the Sustainable Development agenda. The oceans cover 70 per cent of the Earth's surface and host the largest connected ecosystem, playing an important role in climate stability, oxygen generation, nutrient cycling, food production and coastal protection. There is a growing dependency on the ecosystem services provided by oceans including transportation; food through fisheries and aquaculture; and new uses such as the generation of renewable energy, mining of materials, development of new pharmaceuticals, and tourism. However, many of these services depend on the health of the ocean.

The growing population in Sri Lanka will increasingly depend upon the wealth of living and non-living marine resources. Fish contributes to food security by providing more than 65 per cent of animal protein required for human nutrition. The fishing industry and its associated infrastructure have become an important economic factor in coastal areas. The fisheries sector directly employs around 275,000 people and provides indirect employment to an equal number of people. In 2014, export earnings from fisheries were 2.4 per cent of total exports.

Sri Lanka owns an exclusive economic zone of nearly seven times its land area. Its contribution to GDP, however, is less than two per cent. Free access to ocean resources and services has put strong pressures on marine ecosystems, ranging from overfishing and reckless resource extraction to marine pollution. About 57 per cent of the fish stock was estimated to have been fully exploited by 2009 and the percentage of the marine fish stock that is overexploited and outside safe biological limits is increasing.

Oceans also absorb about 30 per cent of the carbon dioxide produced by humans, and there has been a 26 per cent rise in ocean acidification since the beginning of the industrial revolution. Marine pollution, an overwhelming proportion of which comes from land-based sources, is reaching alarming levels, with an average of 13,000 pieces of plastic litter found in every square kilometer of ocean. Sri Lanka is ranked 153th amongst countries in Ocean Health Index developed by Halpern et al. (2012), indicating a bad state of ecosystem health.

Regardless of these threats, the mitigation of marine environmental problems and approaches to sustainable use and development of marine resources have been accorded very low priority. There is growing awareness of the life-supporting role of the oceans and the associated need for concentrating on oceanic affairs in overall economic and human development. International cooperation and negotiations are required to use marine resources that meet the needs of future generations. The creation of a comprehensive underlying set of oceanic sustainability indicators would help assess the current status of marine systems, diagnose on-going trends, and provide information for forward-looking and sustainable ocean governance.

²⁹ Writing Team: Kamal Ranatunge (Leader), Ariyaseela Wicremanayaka, and Upali Amarasinghe.

The term “Blue Economy” or “Blue Growth” has surged into common policy usage all over the world and Sri Lanka is not an exception. The “blue economy” concept seeks to promote economic growth, social inclusion, and preservation or improvement of livelihoods while ensuring environmental sustainability. At its core is the decoupling of socioeconomic development through ocean-related sectors and activities from environmental and [ecosystem/ecological] degradation.

The oceans also serve as a huge laboratory and source for ‘blue’ biotechnology, an array of substances for medical research, food additives, pharmaceutical and cosmetic industries. Coastal waters provide sand and gravel and afford an opportunity to extract salt through the desalination of seawater. Minerals such as tin, titanium, manganese nodules and even gold and diamonds can be exploited from the shallow coastal waters. The oceans are also an important source of renewable and non-renewable energy. They provide offshore wind, as well as ocean thermal and tidal power and hold the potential to facilitate algae-based production of hydrogen. Of immense importance is the use of ocean and coastal waters for maritime transport. As shipping has always been the most cost-effective method for transporting commodities over great distances, the shipbuilding industry and world trade routes have developed in parallel.

2. Critical Issues, Impacts and Solutions

Critical issues fall under the following three key areas, also linked to SDG Goal 14 Life below water;

1. Marine pollution.
2. Sustainable utilization, governance, resilience and research
3. Marine resources.

2.1. Marine Pollution

2.1.1. Present Status, Issues and Problem Areas

- **Coastal water pollution** - Sri Lanka’s coastal waters are heavily polluted with agrochemicals, heavy metals, plastics, and radioactive substances, etc., mainly from land-based activities.
- **Eutrophication** - Eutrophication is caused by the accumulation of nutrients in coastal waters originating from agriculture, industry, and sewage in surface waters. Eutrophication leading to algae blooms can change the turbidity of seawater and limit light penetration. As the algal bloom recedes, the degradation processes of plant material stimulated by bacteria consume large amounts of oxygen, causing dead zones in deep water layers. Some microscopic algae can cause harmful algae blooms (HAB) when occurring in large numbers, with the potential to produce toxins with harmful effects on humans and animals
- **Ocean warming and acidification** - Continually increasing atmospheric carbon emissions cause significant ocean warming and stress due to acidification. An increase in heat leads to changes in the water temperature, stronger stratification, sea level rise, and changes in ocean currents. At the same time, warming and increased stratification leads to ocean deoxygenation and an expansion of oxygen minimum zones, especially off equatorial upwelling areas.

Ocean acidification occurs very slowly and any mitigation will be very costly with low or no impact. A critical issue is acidification due to the excessive production of CO₂, which when dissolved in seawater is very corrosive for marine organisms bearing CaCO₃ skeletons. It is therefore important to protect the coastal and marine carbon sinks, and this needs to be a top priority for the country in the short term.

- **Marine Debris** - Sri Lanka is ranked fifth among the worst countries in terms of mismanaged debris, and therefore has to focus greater attention on marine debris issues. Marine debris is not monitored in a standard way and data is sparse. Most marine litter is made up of barely degradable plastics. The main sources of marine litter are river runoff, fishing, and garbage dumping. A greater threat is due to micro plastic particles which are ingested by zooplankton and dispersed into the food chain, through digestive systems and also in tissues and body fluids. Sri Lanka has not yet identified marine debris as a separate entity and categorizes it under solid waste. According to a preliminary study, much of the marine debris is land based, ending up in the ocean through river runoff. More than 95 per cent of the marine debris is locally generated and 98 per cent is plastic. About 55 per cent of the plastics are packaging material (mostly one-time use), Styrofoam cups, flex grocery bags and beverage bottles.
- **Marine Invasive Alien Species (IAS)** – Recent investigations have recognized more than twenty species of globally known marine invasive alien species in our coastal waters, mainly in ports, spreading through ballast water and ship hull fouling.
- **Shipping and fisheries based waste** - Lack of port infrastructure such as waste reception facilities for ships and fishing vessels can lead to illegal dumping of large amounts of waste by ships and fishing vessels.
- **Lack of a proper mechanism to combat large scale oil spills** - Sri Lanka lies close to the East-West shipping route and the country is rich in many sensitive ecosystems around the coast. Therefore, any shipping accident can have a detrimental impact on coastal and marine ecosystems.
- **Coastal erosion** – This is caused by unplanned/poorly planned coastal structures, sand mining in rivers and coastal areas resulting in less sand for beach nourishment.
- **Lack of regional and international collaboration and cooperation** - Most of the issues in the marine environment are complex and not well understood. Therefore, more collaboration and cooperation are needed, in particular among fragmented state institutions -- to combat transboundary issues such as marine debris and non-native species spread.

2.1.2. Remedies, Measures and Implementation

Coastal water pollution

- Measure and monitor key pollutants along the coast. Obtain blue flag certification for key tourist attraction beaches around the country to continuously monitor coastal water pollution.
- Reduce all forms of pollutants finding their way to the ocean.

Eutrophication

- Establish central treatment facilities.
- Measure and monitor nutrient loading.
- Urgently implement measures to stop raw sewage dumping in the sea and only after treatment. This will not only benefit coastal ecosystems but also human health from improved sanitation facilities.

Ocean warming and acidification

- Improve carbon sequestration by protecting mangroves, sea grass, corals, etc. as an immediate and continuous activity.

- Reduce carbon emission in line with commitments to the Kyoto Protocol.
- Implement programmes for the protection and restoration of key coastal and marine ecosystems which serve as carbon sinks.

Marine Debris

- Enhance cooperation with developed nations with better debris management technology such as Korea to address the issue.
- Develop integrated plans to combat solid waste management issues, with reuse, recycling, waste to energy and incineration.
- Establish a fund for plastic recycle/reuse using “polluter-pay strategy”. Large-scale plastic producers and importers should be responsible for managing waste. Such fund to be used to support projects that increase resource efficiency, reuse, recovery and recycling and decrease waste for landfill.
- Limit use and find alternatives for plastic material (packaging and wrappers). Make office environments free from single use plastic material by developing new regulations. Introduce policies to discourage government institutions from using plastic for printing, decorating, etc.
- Conduct baseline surveys to find out debris sources. Quantify marine debris as number of items per square kilometre or square metre area.

Marine Invasive Alien Species (IAS)

- Increase understanding of IAS through primary research and constant long-term monitoring (eg. creating a blacklist). Once established it is nearly impossible to eradicate. Therefore, early warning and immediate remedies are the best option.
- Adopt guidelines for control and management of ships' biofouling to minimize the transfer of invasive aquatic species (Biofouling Guidelines) ([IMO resolution MEPC 207\(62\)](#)).
- Sign IMO ballast water convention and convention on Control of Harmful Anti-fouling Systems on Ships.
- Develop national regulations for ship hull cleaning based on IMO guidelines.

Shipping and fisheries-based waste

- Develop port infrastructure for waste reception based on international standards. Fishery harbours should have facilities for dumping unusable nets and other fishing gear.
- Create awareness for fisher communities and sailors on proper disposal of waste.

Lack of a proper mechanism to combat large scale oil spills

- Develop infrastructure, equipment and training to handle large scale oil spills.
- Develop capacity development and training of first respondents.
- Strengthen and implement the National Oil Spill Contingency Plan (NOSCOP).

Coastal erosion

- Develop, strengthen and implement policies and introduce stringent laws and regulations for coastal construction and sand mining.

Lack of regional and international collaboration and cooperation

- Enhance collaboration and obtain cooperation from SAARC, SACEP, IMO, GLOBALLAST, etc.
- Increase international collaboration.

2.2. Sustainable Utilization, Governance, Resilience and Research

2.2.1. Present Status, Issues and Problem Areas

There is increasing human dependence on coastal resources though with a globally unequal distribution of demand, provisioning, vulnerabilities, and threats. This may seriously threaten the resilience and adaptive capacity of both human and natural coastal sub-systems, especially in developing countries. Thus, coastal zones with their communities, resources and natural habitats require prudent management to build resilience through successful adaptive strategies.

Oceans and ocean resources should reflect the ecosystem approach as the primary framework for action under the Convention on Biological Diversity (CBD 1992) aimed at managing the ecological system as a whole by integrating land, water, and living resources. Sri Lanka is yet to apply an ecosystem approach for managing marine and coastal environments.

The critical issues identified under this section are:

- **Lack of coordination for governance** - Sri Lanka has several regulations and institutions to manage marine and coastal environments though with overlapping mandates and without much coordination. Therefore, it is imperative that the government establishes a central governing body for marine affairs and study the existing policies related to marine and coastal ecosystems and their management. Despite the country's dependence on the ocean, there is no government ministry on ocean affairs.
- **Lack of integrated and multi-level Ocean Governance** - A framework to guide sustainable development of the oceans and coasts can be inspired by the Marine Spatial Planning (MSP) approach. MSP is a promising way to simultaneously achieve social, economic, and ecological objectives by means of a more rational and scientifically-based organization on the use of ocean space. The approach should be ecosystem- and area-based, integrated, adaptive, strategic, and participatory. Furthermore, MSP needs to be linked to Integrated Coastal Management (ICM). ICM and MSP provide useful policy platforms to frame and resolve spatial conflicts and conflicting interests in the pursuit of coastal resilience.
- **Less resilient and more fragile ecosystems** - Key sensitive ecosystems such as coral reefs, mangroves and sea grass beds are under serious threat indicating that our oceans are less resilient to changes. Coral reefs in particular are very fragile and fast disappearing due to bleaching, smothering, competition with seaweeds and diseases.
- **Marine Protected Areas** - Marine Protected Areas (MPAs) are a key management tool although increasing evidence shows that many fail to achieve conservation objectives. The limited extent of MPAs in Sri Lanka was reported at 1.3 per cent in 2014. Most MPAs are not managed, and resource extraction and habitat degradation continue unabated. Declaration and management of MPAs take place without adequate consideration of the ecology, socioeconomic realities, or long-term management sustainability. Managers focus more on the creation of new legislation and protected areas rather than ensuring the implementation of existing regulations and management of existing protected areas. Poor coordination and lack of serious political will have also hindered successful resource management. MPA managers

have to contend with coastal communities that directly depend on marine resources for their sustenance. Poor implementation of already identified SAM sites is also a concern. A more integrated approach and decisions based on an analysis of all relevant criteria combined with a concerted and genuine effort towards implementing strategies and achieving predetermined targets is needed for effective management of MPAs and the sustainable use of marine resources in Sri Lanka.

- **Modify/ introduce new regulations for key ecosystems and species** - Sri Lanka needs to update or develop new regulations for key marine ecosystems and threatened species.
- **Inadequate scientific knowledge and research capacity** - Marine research is not given priority and there is a lack of interest and funding in this area. Facilities for marine research and exploration are in a rudimentary stage and a national institution fully fledged for ocean explorations and innovations is essential. Such an institute should extensively collaborate with other regional and international institutes and should be an independent national body where other research institutes and universities have free access and ability to collaborate. Further the institute should be tailored for cutting edge research and innovations for postgraduate qualifications. Sharing of knowledge is also limited as scientists tend to work in isolation hindering the quality of marine research. There is also considerable overlapping in institutional mandates and gaps in the existing legal framework. There is, however, considerable progress underway to develop a Marine Environmental Baseline Information Network (MEBIN) initiated by the Petroleum Resources Development Secretariat.
- **Lack of awareness and right attitudes towards marine ecosystems** - Marine ecosystems give little priority to any conservation framework. Although Sri Lanka is an island nation, school curricula do not adequately focus on the country's important ocean and ocean resources and ecosystems.
- **Limited skills, capacities and competencies among managers** - Marine ecosystem-related knowledge and skills and strategic skills development in relation to the marine ecosystem and marine resources management form an area that is currently undeveloped.
- **Illegal land acquisition** - Most of the land in the coastal zone are acquired illegally and beach access has been blocked.
- **Global climate change and increasing incidence of natural disasters** - Climate change has a negative bearing on key habitats and species. However, the degree of vulnerability in the local context is not known.
- **International regulations** - Sri Lanka is not a party to several key marine treaties, conventions and regulations and has thus far not identified several key ocean regulations as important for the country. Sri Lanka has applied to the UN to extend the outer boundary beyond 200nm EEZ for up to 1km depth sediments.

2.2.2. Remedies, Measures and Implementation

Lack of coordination for governance

- Assign ocean related subjects under a government ministry (i.e. Ministry of Ocean and Fisheries)
- Formulate a National Level Coordination Committee for marine and coastal ecosystem management.

- Conduct a national level policy review and reform on marine and coastal ecosystem management.
- Strengthen the capacity of relevant institutions to implement existing rules and regulations and future plans.

Lack of integrated and multi-level Ocean Governance

- Prepare zoning and land use plans for Sri Lankan EEZ with the participation of all stakeholders.

Less resilient and more fragile ecosystems

- Make an assessment of habitats and species for climate change vulnerabilities.
- Closely monitor key ecosystems and identify the exact causative factors for less resilient and fragile ecosystems through scientific research.
- Restore severely degraded ecosystems, key habitats and conserve important species.
- Implement a new policy or update existing policy for sustainable utilization and conservation of mangroves.

Marine Protected Areas

- Increase MPA network by identification and declaration of new MPAs within its EEZ and upgrading existing MPAs.
- Increase MPA coverage by 1000 km². This would include GoM, Mirissa, Kayankerni, Wilpattu, Little Bases and Great Bases, and Jaffna lagoon.
- Prepare management plans to manage new MPAs as well as existing MPAs. These include management plans for Bar Reef Sanctuary, Wilpattu National Park, Pigeon Island National Park, Chundikulam National Park, and Adam's Bridge–Vankalei–Vedithalthive Cluster.
- Strengthen resilience of MPAs by upgrading their present protection level. This includes Bar Reef Marine Sanctuary upgraded to "Left-aside for restoration zone". Additionally, declare shipwrecks and their surroundings as MPAs giving greater protection to fauna and flora.
- Prepare, adapt and implement strategic management frameworks and plans with multi stakeholder participation and based on coastal zoning.
- Prepare and implement strategic management frameworks for marine ecosystems.
- Implement already identified SAM sites.

Modify/ introduce new regulations for key ecosystems and species

- Revise regulations for marine mammal observation and introduce new regulations for privately owned turtle hatcheries, snorkelling, diving and boating in sensitive marine environments.
- Introduce data collection mechanisms for the management and conservation of sharks.

Inadequate scientific knowledge and research capacity

- Establish a state of the art marine institute for research and innovations which can offer postgraduate qualifications (which could be named as the Sri Lanka Institute of Marine Science, SLIMS) with improved infrastructure and human resources to conduct marine research and to develop as a "centre of excellence in marine research" which would serve as an umbrella organization coordinating and facilitating marine research developing technologies.
- Establish and maintain a marine environmental baseline database.

- Ensure sufficient and continuous funding for marine research and development from the state sector. Increase the percentage of national funding allocated for marine research.
- Identify research and development priorities in the marine sector through relevant agencies.
- Encourage submission of appropriate research proposals to national and international donors.
- Increase the number of cross country research partnerships and MoUs.
- Develop strategies for quick transfer of novel technologies and new knowledge among national institutes.

Lack of awareness and right attitudes towards marine ecosystems

- Formulate and implement national level awareness programmes targeting key stakeholders and the general public on the status of marine ecosystem services.
- Develop school curricula to improve knowledge and right attitudes on marine ecosystem services. Incorporate the basics of marine science including ecological and economic benefits of the ocean in primary, secondary and higher education.

Limited skills, capacities and competencies among managers

- Improve the infrastructure in training institutions to enhance marine ecosystem-related knowledge and skills.
- Conduct training and postgraduate programmes for ocean resource managers.

Illegal land acquisition

- Provide alternative land and resources to counter encroachment and illegal land acquisition.
- Provide for effective implementation of existing national legislation.
- Strengthen capacity for patrolling and law enforcement.

Global climate change and increasing incidence of natural disasters

- Take immediate action to restore impacted habitats and conserve important species.
- Conduct timely monitoring and assessment of vulnerable marine ecosystems.
- Provide enhanced protection for impacted ecosystems with key stakeholder participation

International regulations

- Review international regulations, conventions, treaties and guidelines and adopt them at national level, e.g. IMO Ballast Water Convention, IMO ship hull fouling guidelines.
- Review and strengthen already signed conventions.

2.3. Marine Resources

2.3.1. Present Status, Issues and Problem Areas

- **Dwindling fish resources** – Overexploitation and Illegal and harmful fishing methods have led to a dwindling of fish resource and destruction of the marine environment. There has not been a resource survey for the last three decades and no scientific information on sustainable levels of fishing is available despite several attempts to increase the fish catch.

- **Post-harvest losses** - More than 30 per cent of the fish catch in Sri Lanka is discarded due to poor postharvest handling resulting in reduced fish availability.
- **Inequality in opportunities to access international waters for fishing** – Developed nations have more access to fish in international waters and even in the exclusive economic zones of other countries.
- **Lack of scientifically collected reliable fish catch data and resource survey** – The last resource survey was conducted in 1978 and therefore there is a need to conduct a comprehensive resource survey within EEZ within a few years with the support from a nation with well-developed technology. Although, there are some initiatives by NARA, this process has to be accelerated with international and national level cooperation and collaboration.
- **Use of unsustainable fishing methods in coastal fishery** - Illegal fishing practices such as dynamiting, bottom trawling monofilament nets and all forms of bycatch contribute to unsustainable extraction of fishery resources.
- **Poor facilities and standards in fishery harbours** - Most of the fishery harbours in Sri Lanka do not even have basic facilities. In addition, fishery harbours such as Dikkowita, which is the largest fishery harbour in SE Asia, remains underutilized.
- **Poor contribution to national economy** – The EEZ is nearly seven times the land but the contribution to the national economy is a mere 1.8 per cent. There is also no proper value addition to fish and fish products.
- **Fishing disputes (resource use conflicts)** - Encroachment by Indian fishermen and operation of bottom trawlers in particular cause extensive damage to our resources and well as the seabed posing a great threat to our ocean resources
- **Lack of proper income for artisanal fishers** – There is no adequate market system for artisanal fishers.
- **Lack of a proper mechanism to provide subsidies** – Subsidies are sometimes provided to beneficiaries who are not eligible to receive them. Subsidies granted during crisis situations are not time-bound and tend to get extended.
- Sri Lanka has a lot of potential to train skilled personnel for the maritime industry which has a huge market. Therefore, maritime teaching and training institutes need further strengthening.
- Ocean-based tourism such as diving (in ship wrecks in particular), snorkeling, and other water sports should be promoted. In this regard, regulations need to be developed and guidelines developed for tour operators and tour guides who need to be well trained.

2.3.2. Remedies, Measures and Implementation

Dwindling fish resource

- Ban all forms of illegal fishing gear, including a total ban of imports of illegal fishing gear and material.
- Promote more environment-friendly fishing gear and provide incentives for fishers who use environment-friendly fishing gear.

- Divert fishermen more on to non-extractive (less impact on the resource) but more income generating areas such as charter boats for fishing tours for tourists.
- Establish fisheries reserves and other forms of Marine Protected Areas (MPAs) with a sound scientific understanding.

Post-harvest losses

- Create awareness, conduct training and provide technological development to minimize post-harvest losses.
- Reduce post-harvest losses by 10 per cent.
- To reduce the postharvest losses, increase fish exportability, and maintain the highest possible standards for fish products which would provide the highest rates for our exports. It is necessary to adhere to international standards and best practices.
- Eco-labelling, traceability and related certification schemes are becoming significant features of international fish trade and marketing. Eco-labels are “seals of approval” given to products that are deemed to have less negative impact on the environment.
- The adoption of eco-labeling schemes provides additional tools to move towards sustainability of capture fisheries and aquaculture and brings together elements of the market, industry, environmental interests and communities.

Inequality in opportunity to access international waters for fishing

- Gain more opportunities to fish in international waters by requesting UN to reserve a larger proportion of the share to poor countries and small island nations.

Lack of scientifically collected reliable fish catch data on marine living resources

- Conduct a resource survey to find out sustainable levels.
- Develop a standardized mechanism to collect actual fish catch data by making it compulsory for each fisher boat to provide fish catch data to obtain a license for the following year.

Use of unsustainable fishing methods in coastal fishery

- Carry out scientific studies to identify most environmental promising and best fishing gear /methods for different types of fisheries.
- Promote such gear by giving incentives (such as reduced fishing license fee) and discourage other fishing methods and ban the least environmental friendly fishing gear.
- Provide for a stringent legal framework and enforcement for illegal fishing methods such as poison, dynamite, monofilament nets and bottom trawling.

Poor facilities and standards in fishery harbours

- Develop fishery harbour infrastructure.
- Promote underutilized facilities such as Dikkowita Fishery Harbour for economic development.
- Encourage local and foreign investors to obtain facilities and bring the harvest to the facility for quick freight by air or surface.

Poor contribution to national economy

- Increase the contribution to GDP by reducing post-harvest losses, targeting more offshore fisheries and value addition to fish products.
- Develop ocean-based eco-tourism and responsible tourism.
- Promote ecotourism based on sharks and rays as an alternative to fishing which will provide more revenue to the local economy than fishing. As whale sharks and reef sharks have the potential to attract a large number of tourists each year, tourism is a better income generating alternative to shark finning and liver oil extraction.
- Become a signatory to the Memorandum of Understanding (MoU) on the Conservation of Migratory Sharks. CMS is an intergovernmental treaty formed under the United Nations Environment Programme. Sri Lanka should follow the example of the Maldives and other nations to support international conservation and protection of sharks because several species cross geographic and international boundaries and interbreed during their lifespan. This requires global conservation and management measures across an extensive range.

Fishing disputes (resource use conflicts)

- Promote, community-based and co-management practices. Organized pilot projects with at least one for each coastal district.
- Increase the number of co-managed fisheries sites.
- Develop alternative livelihoods for least income earning fishermen such as artisanal and lagoon fishermen.
- Resolve fishing disputes mainly with India.

Lack of proper income for artisanal fishers

- Use traditional fishing crafts and fishing methods for eco-tourism (particularly in lagoon fisheries).
- Create awareness and conduct training for fishing to be more environment-friendly and minimize post-harvest losses.
- Establish a separate market for artisanal fishers who use more environmental friendly fishing gear to sell their products at a higher rate (processed, packaged).

3. Sustainability Perspective – 2020 and Beyond

Sri Lanka has not recognized the full potential of its ocean resources beyond fisheries. Therefore, the ocean should be given top priority as a future resource base and also to boost the economy of Sri Lanka. However, if the country is to benefit from the blue economy, it is first necessary to invest in ocean exploration, research and development. All ecological and economic services depend on our ability to maintain the health of the ocean. Increased scientific knowledge and research and transfer marine technology are essential for improving ocean health and enhancing the contribution of the ocean to the development of countries, in particular small island developing states. Since, the country is gaining the maximum from coastal fish production, technology has to be developed for marine aquaculture (mariculture) while the marine ornamental fish trade too has

to develop to target the export market. Further, the seafood export industry needs to be developed with value addition. If Sri Lanka is to benefit from the blue economy along with development of existing and new ports, development has to be based on the green harbour concept.

It is imperative to carry out baseline studies, resource surveys, and exploration of non-living resources. Ocean based ecotourism should be further promoted after setting up all the regulatory mechanisms including marine mammal observations, snorkelling, diving, sport fishing and other water sports. There are few direct references to new technologies such as blue carbon and bio prospecting which could have future consequences, particularly if they are woven into livelihoods as a means of supporting development.

S6. TRANSPORT³⁰

1. Current Status

Up until 1977, the government was the provider of most public services including passenger transport. In the post liberalized era, private bus transport supply was allowed. Goods transport has been always a private sector business, while all transport infrastructure is provided by the government. Recent initiatives of allowing private port-terminals and consideration of PPP arrangements for airports and ports are observed as a policy change. The government has also sought equitable access to public transport by control of bus and train fares with an index in operation since 2005. Discounted travel for students, state employees, and subsidizing rural bus services is also a long-standing policy which was followed by the Sisu Saeriya, Gami Saeriya and Nisi Saeriya programmes since 2004. Rural road building figured prominently in providing access to basic services for many decades, while in recent years, expressway building in an attempt to improve inter-city travel has taken centre stage. Recent policy initiatives have included bus priority lanes and the reform of the bus sector through the Sahasara pilot project. Feasibility studies have been initiated for new urban transport technologies such as light rapid transit, water transport and for railway electrification and modernization. Motor vehicles are taxed heavily which has led to more than 2/3 of the vehicle fleet comprising 2 and 3-wheel vehicles. Fuel is priced differentially with petrol taxed higher than diesel promoting greater diesel use. Collectively, this is a major source of revenue for the treasury. The ‘for-hire’ industry is unregulated and has increased on the back of deteriorating transport and unemployment among school leavers with as many as 700,000, mostly three wheelers, in operation.

The transport sector should be well integrated with all other sectors to provide mobility and access to different factors of production, both as inputs and outputs that include the movement of people and goods. Transport infrastructure and services that are not aligned to land use, social infrastructure or other physical infrastructure will mitigate development potential. Poor transport infrastructure and services are symptomized by unreliable mobility, delays, waste and damage in transit, negative impacts on quality of living including the quality of the environment, traffic congestion, road accidents, poor quality and choices in public transport, lack of information and poor integration between modes being common issues. In Sri Lanka, policy formulation, planning and alignment to other sectors, balance of investments across modes, modernization and professionalism in management of the sector have been inconsistent and insufficient leading to a continuing underperforming transport sector in meeting the growing requirements of a medium income country. Moreover, economic progress is also found to be further hindered when transport does not provide unhindered access for all sections of society including women to access resources, opportunities and markets to improve productivity and develop new economic activities. Transport should also be considered as a major provider of employment with over one million direct employees. It should also be seen beyond a value-added service with inputs in manufacture of

³⁰ Writing Team: Amal Kumarage (Leader), Rohan Samarajiva, Jagath Munasinghe, and T.L. Gunaruwan

transport infrastructure and service components as well as in international transit operations in air and maritime transport.

Past Policy and Practice of Policy Implementation

Explicit transport policies can be traced to the National Transport Policy approved by the cabinet of Ministers on the 27th of November 1991. The document entitled the National Transport Policy of Sri Lanka dated 2009 and approved by the cabinet of Ministers claims to replace previous policy as a major deviation from market based policies practiced in previous decades. The Ministry of Transport & Civil Aviation is revising this at present. However, the greater evidence is that none of the agencies practiced the implementation of either of these policies. The analysis of current issues shown in Chapter 3 arises mostly from the neglect of implementing these policies.

In addition to action taken under explicit policies, government action is also affirmed by implied policy of funding for transport with approvals by the cabinet of Ministers or by Parliament. In some instances, policy is implied through change in legislation in terms of amendments to Acts of Parliament and Gazetting of Regulations. However since these are often based on proposals by different line agencies and ministries, an integrated overall approach of managing mobility has been neglected leading to sub optimal and cross purpose investments in the transport sector.

Analysis of Demand

The historical demand for passenger mobility has grown by around 4 per cent p.a. while freight transport has grown by around 3 per cent p.a. This is likely to be the case for a 5 per cent growth rate of the economy and will increase at a higher rate. The per capita mobility in Sri Lanka is higher when compared with global trends. This can be understood to be a result of the early development of an extensive network of rural roads, coupled with an equally extensive bus route network and low public transport fares. In later years, the neglect of public transport, coupled with higher incomes has led to a rapid increase in motorization not being matched by a similar increase in road space. Urban sprawl in increasing commuter travel distances and with congestion door to door speeds are decreasing. The demand for freight transport has significantly changed with agricultural products intended for the export market being supplemented by a mix of manufacturing, and construction goods movements. In international transport, the Port of Colombo ranks the busiest in South Asia maintaining over 75 per cent of volumes as transhipment with a growth rate of 8 per cent per annum. Growth in air travel has resumed at around 12 per cent p.a. mainly spurred by tourism, after its interruption by the three decades of conflict.

Analysis of Supply

The supply for the passenger transport demand has been dominated by bus transport with current shares at around 45 per cent of the passenger km, non-motorized transport around 10 per cent, while railway is around 3 per cent and private and for hire transport making up the balance of around 42 per cent. The bus transport is supplied by 6,000 state owned buses operated by the SLTB and a further 20,000 private buses mostly owned by individual entrepreneurs regulated by provincial and national transport authorities. There is 20-30 per cent over supply of vehicles coupled with poor margins due to poor productivity which has led to quality stagnation and the consequent loss of 1-2 per cent share to motorized transport modes per annum. The railway market

share has stagnated overall due to lack of modernization, inadequate capacity and lack of competitiveness with road transport. Freight transport is unregulated and mostly in the hands of private entrepreneurs. Supply chains have not developed and logistics in both domestic as well as international transport have bottlenecks and weak segments.

The sources of the observations made in this section and the data referred to can be found in the footnote below³¹.

2. Critical Issues, Impacts and Problems

2.1. Present Status, Issues and Problems

The most critical factors that pose a threat to a sustainable transport sector within Sri Lanka have been identified and discussed as follows:

2.1.1. Rapid Motorization

Sri Lanka's motor vehicle fleet has become unsustainable for its current road network capacity especially in urban areas. At 200 vehicles per 1000 people and with 2/3rd of the fleet still two and three wheelers and the 8 per cent p.a. growth in new registrations is likely to continue even in spite of the high taxes. The growth of the middle class and the acceptance of a private vehicle as a status symbol pushes this growth. Vehicle imports and parts cost the economy Rs 200 billion per year followed by an annual oil import bill of over Rs 300 billion for transport making private vehicle transport economically unsustainable. Moreover, the cost of road construction to match the growth has exceeded Rs 200 billion in recent years. Dependence on public transport by the public is waning as less investment is provided for both bus and rail transport and public are rapidly converting to captive private vehicle users. The Treasury profits from taxes on vehicle and fuel imports and has created an unsustainable dependency on such revenue streams for fiscal management. The increase in per capita incomes make purchase of motor cycles and three wheelers affordable prompted by attractive leasing arrangements which have become a lucrative business opportunity.

2.1.2. Poor Urban Mobility

The growth in private vehicles without offering high quality public transport options has created a dangerous cocktail leading to urban congestion which has inflicted unsustainable economic loss on all urban centres with the Western Province losing approximately 12 per cent of its GDP for mobility and a do-nothing scenario predicting this to increase to over 20 per cent by 2020. Door to door travel speeds for urban commutes have dropped to less than 17 km per hour with public

³¹ Gwilliam Ken, Amal Kumarage and DS Jayaweera, 'Developing Public Transport in Sri Lanka', World Bank, Sri Lanka, January 2005; Kumarage Amal and Janaka Weerawardena, 'Greater Colombo Traffic Management', University of Moratuwa, April 2009; Amal Kumarage, 'Review of Transport in Sri Lanka', National Atlas of Sri Lanka, 2001; Ministry of Transport, 'National Transport Policy', 2009; Kumarage, Amal, 'Review of Sri Lanka Transport Sector', World Bank, 2010; Kumarage, Amal, 'Sri Lanka Transport Sector Policy Note', World Bank 2012; University of Moratuwa, WS Atkins/University of Moratuwa, CUTS Stage 1, Working Paper #25, World Bank/Ministry of Transport, 1999;

transport recording 12 km per hour. Road space is not well managed with ad hoc parking of vehicles in urban areas, making walking and using bicycles difficult and unsafe. Public transport is not integrated with each other and not convenient to use.

2.1.3. Poor Freight Logistics & Supply Chain Management

The supply chain management of all movement of consumer goods as well as export produce follows traditional and manual methods leading to waste, delays and lost opportunities. Such deficiencies impact especially the rural economies severely by making agriculture, small industries and fisheries unprofitable and unsustainable as a livelihood. There are no logistics centres with modern amenities for storage, packing, value addition and distribution. The railway has been isolated from goods transport. In international logistics, where a higher level of operations exists, several port related bottlenecks makes the cost and time for exports unsustainable. The movement of containers to and from the port of Colombo located within the city in heavy traffic is also unsustainable. The railway is not used for this.

2.1.4. Poor Inter-regional Connectivity

Sri Lanka's economy is hinged on the Western Province which accounts for 42 per cent of the GDP. From colonial times when it became the central transport and logistics node, other provinces and provincial cities have required good inter-regional connectivity with the Western Province. The national road network developed over a century ago is neither safe nor quick any more. It is based on Colombo based connectivity and does not adequately cater to domestic transport between regions. There is pressure to build a vast network of expressways connecting all provinces with Colombo. This is an unsustainable model that will impose a huge debt burden on the economy, while creating more traffic in the Western Province.

2.1.5. Increasing Road Accidents

Fatalities from road accidents keep increasing. While poor road discipline is often cited as a cause, there are many poor policies that do little to arrest this situation that is estimated to cost the economy over 3,000 lives and at least Rs 40 billion per year both of which are unsustainable for economic and social development. The high vehicle taxes that prevent people from being able to buy safer vehicles, allowing import of vehicles of poor safety standard, inadequate attention on safety in road design and lack of investment on improving safety underline the status quo.

2.1.6. Concern on the Environment

The high mobility has made managing the increasingly fragile environment unsustainable. The natural environment is under threat with deteriorating air quality, flooding and landslides from road constructions and consequent settlements. The quality of urban living is depleting with high levels of noise pollution, and over running of public spaces with parked vehicles. The quietness for spiritual activities, recreational and tourism has been severely impacted making spending time in urban areas an unsafe and unattractive option. Suburban roads are often filled with heavy traffic depleting residential quality of life and making roads unsafe especially for children and the elderly making them immobile. This stands in contrast to the natural splendour of Sri Lanka and the expectations of a clean, quiet and safe environment.

2.1.7. Immobile People

While mobility options increase for some in Sri Lanka, it is noticeably reducing for others, where the ability for the disabled, the elderly and children to use public roads and public transport safely and conveniently has diminished. This is socially unsustainable. Moreover, the deterioration of affordable public transport options especially in rural areas has made access to basic services including education and health difficult and expensive. Poor management, over-crowding in public transport have also confined women to homes or forced them to more expensive para transit options.

2.1.8. High Resource Usage

Transport, while adding to the economy of Sri Lanka, is also leading to the unsustainable consumption of limited resources. Aggressive transport infrastructure building programmes have put immense pressure on land acquisition and loss of habitat in a densely populated country. Exploitation of building material such as sand and metal has also been questionable. Sri Lanka uses fossil fuels for energy for transport. This makes Sri Lanka vulnerable to energy security for transport. Moreover, the proliferation of three wheeler taxis across the country has resulted in large absorption of labour with low productivity.

2.2. Likely Impacts and Consequences of Problems

It should be noted that Sri Lanka is now at a per capita income of nearly USD 4,000, a lower middle income country. This means that with a higher number of families demonstrating a much higher demand for mobility, and the consumption of goods, the inability to provide the required mobility is likely to lead Sri Lanka to a trap where the impact of improved lifestyles will become a barrier to further development. This can be explained using the simple example where when incomes increase and motorization results, the increase in external congestion costs becomes a barrier for further economic growth.

2.2.1. Economic Impacts

Transport should be seen as a sector that facilitates greater economic opportunities. If it gets too costly then the economic growth can slow down considerably. Increasing congestion in urban areas, where the thrust of economic activity is now concentrated, is estimated to begin to impose crippling effects with mobility costs increasing to over 20 per cent of the GDP in the Western Region by 2020. The impact in other urban areas though not as significant is likely to increase rapidly. The poor supply chain management and inefficiency in freight transport is likely to retard economic growth in rural communities especially in agricultural, fishery and small industries. The poor utilization of public transport vehicles and three wheelers add to the cost of transport and consequently the cost of living. The external impacts of accidents and environmental impacts have also been estimated at Rs 100 billion per year. Transport while providing at least a million persons with direct employment is not adequately productive. Sri Lanka has not exploited the transport sector manufacturing for export and continues to rely on imports for its own consumption.

2.2.2. Impacts on Urban Quality of Life

Urban population is increasing in Sri Lanka as in the world over. Quality urban life is essential to make urban areas attractive for investment, tourism, trade, employment and residence. Sri Lankan cities suffer from growing traffic congestion, poor urban transport options, poor walkability, noise and access to open spaces as well as safety and security in transport. Inability to have economically competitive cities and liveable cities in Sri Lanka is considered a major obstacle for national development.

2.2.3. Impact on Rural Quality of Life

The majority or Sri Lankans still live in rural areas. Even though this is likely to change in future, Sri Lankans prefer to live in such areas provided they have access to basic services and can participate in fruitful economic activity. Even though Sri Lanka has an extensive rural road network, the poor public transport and the poor level of road maintenance makes access difficult. Moreover, the lack of proper supply chains and logistics systems for handling rural produce does not enable rural economies to have adequate economic growth opportunities. The poor access to services coupled with lower economic productivity is likely to put pressure on large scale migration of rural population to cities.

2.2.4. Environmental Impacts

Sri Lanka's natural environmental is rich in bio-diversity and together with its physical features that include a built environment entrenched in tradition and heritage makes environmental safeguards critically important. Coupled with the high population density, the acquisition of land for large scale transport projects need to be fully justified and impacts mitigated. The impacts of these on are mostly felt by vulnerable social groups. Transport impacts on the serenity including quietness, and visual aesthetics, threaten its appreciation by local and foreign tourists.

Since Sri Lanka is almost totally dependent on import of non-renewable fuels for its transport usage, a significant contributor to Sri Lanka's balance of payments arises from the fuel import bill which now stands at over Rs 600 billion. With regular occurrences of uncertainty in global oil supply it is important to move towards energy security and the use of renewable fuels.

2.3. Remedies, Measures and Implementation

Implement a policy intervention to address these issues as follows:

2.3.1. Improving Access and Making Mobility Affordable for all

Access to opportunities is fundamental for socio-economic development for individuals as well as communities. Access to trade and employment opportunities, health and education services should be considered a basic right to be continually developed in an equitable manner across the country. Special attention has to be given by 2020 to (a) improving access for children, women, the senior citizens and those with disabilities; (b) remote communities and (c) the poor.

The government through the Ministry of Transport and the Provincial Councils, will before the end of 2019, complete a mobility assessment to ensure that no social groups are disadvantaged due to inadequate access. It should set up appropriate public transport solutions for filling all such service gaps by 2030 by ensuring the financial sustainability through suitable reimbursement schemes for public transport services that require subsidy for improving infrastructure and vehicles with special features.

2.3.2. Protecting Lives

The highest level of safety and security in travel must be considered a basic right of society. Every accident, especially those that cause death and injury has to be investigated to ensure they would not re-occur by taking steps to improve standards in design of vehicles and infrastructure, operation, training, regulations, monitoring and enforcement aimed at Vision Zero or the pursuit of the complete elimination of transport fatalities by 2030.

The government, before the end of 2018, must set up a strong and independent institutional mechanism where possible with private sector partnerships to ensure justice for those affected by travel accidents and take leadership in ensuring the compliance of this policy across multiple agencies in the transport sector. An allocation of 5 per cent of all transport sector capital investment should be allocated for transport safety improvements from 2020.

2.3.3. Building Sustainable Physical Environments

In order to create sustainable and liveable physical environments, special attention will be given to mitigate the negative impacts of transport on communities by providing safe and secure public spaces, free of excessive traffic, noise, dust and pollution. By 2025, each city with over a 100,000 day time population will have a transport and traffic plan that will ensure adequate walkability, cycling and access by public transport modes including a multi-modal transport terminal, while controlling traffic volumes and on-street and even off-street parking to levels that are sustainable for the physical and cultural character of the city. Walkability will be ensured to increase healthy living and reducing non-communicable diseases. Elevated road and rail structures will be discouraged in areas where they pose a threat to the heritage and aesthetic value and are likely to create negative urban spaces. In rural areas, the road frontages and infrastructure should be designed and maintained in such a manner that the quality of the existing physical environment of the residents and users will be protected and improved. The government will make traffic impact assessment reports compulsory on new constructions and traffic audits in all municipal urban areas and national roads before the end of 2020. Public transport will be considered the means of improving liveability in urban areas from 2020 onwards.

2.3.4. Protecting the Natural Environment

Transport is a major threat to the sustainability of the fragile natural environment. The environmental assessment process which by legislation provides for study and mitigation of the impacts will continue. The processes will be broadened to include the full investigation of all alternative transport infrastructure, technologies, modes and designs to ensure that the alternatives which are least harmful to the natural environment are given the highest consideration. Such consideration will take in to account life cycle costs that will include the environmental impacts arising from its operation and its comparison with other alternatives. From 2020, special

attention should be given to the (a) use of physical resources, (b) number of beneficiaries, (c) achieving at least 50 per cent use of renewable energy for transport by 2030 and (c) environmental impacts of the proposed project together with its alternatives while at the same time seeking to reduce excess transport activity in terms of higher vehicle km and increased fuel consumption.

2.3.5. Improving Connections Nationally and with the World

Expanding transport and logistics connections nationally and globally is a fundamental pre-condition for improving and sustaining economic activity, social and cultural development. Attention will be given for the efficient development of transport and logistics infrastructure, facilities and services that will promote domestic production and consumption through well located logistics centres and markets. Such logistics networks have to be developed starting in 2020 by integrating multi modal transport networks in order to make the supply chain management efficient in terms of eliminating delays, wastage and lost economic opportunities. Inter-regional and inter-city transport facilities will be developed to provide users with choices of modes as well as convenient inter-modal integration at multimodal transport terminals. In this respect domestic air transport will be provided open access by 2018. The gateways for International transport such as the seaports and airports will be provided increased capacity to meet the demand and market conditions while ensuring that the highest level of technology and modernization is made available to make travel to and from Sri Lanka efficient and convenient, and fully integrated with the internal transport networks especially the railways. The government will before the end of 2018 develop strategic plans to (a) develop domestic aviation, (b) improve international air travel and (c) improve export facilitation and port development.

2.3.6. Making Employment Fulfilling and Productive

Transport sector provides direct employment to at least one million people. Most of them have informal jobs as drivers, loaders, cleaners, mechanics, conductors, labour etc. Their working conditions are poor and they are often without due social safeguards required by law such as EPF/ETF and gratuity. Productivity is also low. The physical environments are also often not conducive to work and vulnerability to safety hazards are high. The government has to take steps to formalize such employment and to create decent work conditions including automation of unsafe and risky activities to ensure occupational safety for all employees in the transport sector by 2030. Steps should also be taken by 2020 to develop the transport sector as a driver of the economy pursued through strategies encouraging transport-related domestic value addition instead of being heavily import intensive.

2.4. Remedies, Measures and Implementation

The different strategies formulated to solve the different issues and their impacts have been grouped under six headings discussed as follows:

2.4.1. Managing Motorization

Rapid motorization threatens the economy, urban liveability and the environment.

- Intervene in managing future motorization and in particular the traffic levels in urban areas.

- Convert vehicle taxes at importation gradually to road user taxes and levied on the basis of charging for road space used and its competing economic value through road user charges levied electronically in urban areas where traffic levels need to be controlled.
- Discontinue differential pricing of fuel between different fuel types to better manage transport pricing, while maintaining affordability.

2.4.2. Making Bus Transport the Backbone of Mobility

Improving bus transport services is considered the most cost effective and strategic approach in a densely-populated country where residences are scattered, to arrest the rapidly worsening traffic conditions by its more efficient use of road space.

- Based on the findings of the *Sahasara* pilot project in Kandy, the government will review such findings, and within a period of 3 months, formulate a strategic plan to transform the bus sector to enable it to achieve the desired objectives. This will include a policy to (a) regulate excessive on-road competition, (b) improved bus operations management of both SLTB and by consolidating the private sector operators, (c) modernize buses, terminals, ticketing systems, information systems and other supporting infrastructure, and (d) creating strong regulatory institutions that can ensure the continuous delivery of high quality bus transport services by 2020.

2.4.3. Getting the Best of the Railways

The development of the railways is considered a viable long-term transport solution for Sri Lanka given its higher capacity, and lower external and environmental impacts.

- Pursue the systematic development of the national railway network to position it as a competitive modern-day transport option by the year 2030 for both passenger and freight transport.
- Strategically focus into competitive niche areas for rail transport such as (a) urban passenger, (b) long-distance express passenger and (c) bulk and long-distance freight transport markets.
- Allocate funds for 2020 with emphasis on (a) expanding railway network to cover the entire island as an alternate mode of transport to serve the long term mobility requirements including a new rail access to Kandy extendable to Uva and Eastern Province as well as to Sabaragamuwa, (b) improving reliability and speed of travel through electrification and other infrastructure improvements (c) modernize customer services through electronic ticketing, air conditioning, improved stations, integrated access by buses and three wheelers, park and ride facilities etc., (d) improved freight transport especially large volume- long distance haulages, (e) integration with tourism and hospitality services, (f) revising prices to reflect market value while maintaining access and affordability to the poor and (g) improving internal management processes and quality of customer services.

2.4.4. Building Cost Effective Highways & Roads

- Sri Lanka has a high density of roads. Its future road building program should be aligned to developing a well-connected road network within a multi-modal transport network.
- Develop a 10-year national road development strategic plan before end of 2018 as part of the aforementioned national multi modal transport development strategy.
- Such a plan will give special emphasis on (a) improving the utilization and management of the existing road network, (b) planning of new roads as part of multi modal transport network

development in providing speedy connections between metro regions, (c) prioritizing space for bus transport services on roads and ensuring space for multimodal access, (d) prioritizing steps to improve road safety and achieve the vision zero goal by 2030, (e) bring regulations for the removal or restriction of on-street parking on national roads in urban areas (f) complete mitigation of environmental impacts of road construction and operation, (g) maintenance of quality of life and physical environment around national roads, (h) ensuring that professionally acceptable feasibility studies are completed together with comparison of alternatives before investments are made, (i) resilience to disasters, (j) ensuring no negative impacts on the quality of urban spaces within cities, and (k) including measures for consultation with stakeholder communities whenever new roads are planned.

2.4.5. Providing Seamless Mobility

Users require mobility and its means are secondary. As such, a multi modal transport network with seamless integration between them is considered as being the most sustainable to be developed across the country, regionally and within urban areas by 2030.

- Develop transport infrastructure within the context of multi modal transport development and its application nationally, regionally and within cities. Special emphasis will be given for (a) the development of multi-modal transport terminals including park and ride facilities in cities and town areas, (b) electronic ticketing systems that can be used across different modes and operators, (c) securing private sector partnerships for developing such facilities (d) setting up real time operations control centres for terminals and associated services (e) providing real time information to passenger for trip planning and decision making (f) incorporating the para-transit industry to supplement public transport and provide connections and (g) setting up a strong institution that would manage such infrastructure on a national level.

2.4.6. Building Better Supply Chains & Logistics Centres

The economy is constrained by poor supply chain management and logistics for both the domestic and international movement of goods. The inefficiency should be eliminated by a series of interventions starting in 2020 with relation to a National Transport & Logistics Development plan.

Special emphasis to be given to (a) study of the supply chain management of different rural products including agriculture, fisheries and small industries, (b) facilitate the development of logistics centres, storage locations, value adding facilities, packing and handling etc., that would reduce waste and damage, and enable high quality products to reach markets reliably for a higher price, (c) supply chain information flow systems for producers and buyers, (d) private partnerships for setting up such facilities and (e) development of a logistics corridor that would connect the international gateways for maritime and air transport using both road and railway networks within the country specifically between Colombo and Trincomalee, as well as Colombo and Hambantota.

The aviation industry should be seen as an integral part of the transport function providing seamless connections between local and foreign destinations through efficient international gateways. These should be of global standard, competitively priced and comprising of modern multi modal facilities. The airlines industry itself should provide greater access and encouragement for the local industry especially for domestic aviation. The growth in the aviation market in the region should be exploited for economic development. International ports similarly are locations for freight logistics and their efficiency provides greater access of goods of Sri Lankan origin to more markets. The growth of east-west traffic and the growth of the consumer market in India

should be exploited for value addition as transhipment ports by attracting more shipping lines, improving flow of information and realignment of regulatory procedures and trade facilitation.

2.5. Implementation Processes

Balancing Investment

Before end 2017, government should collate all available transport sector plans and studies into a 10 year national multimodal transport strategic plan which will include development strategies for different transport networks including highways, railways, bus transport and air transport. It will be the policy of the government that the public investment on transport sector infrastructure and services in each budget, be allocated on the basis of alignment to policy actions set out herein.

The Department of National Planning will ascertain from 2018 that feasibility studies for transport projects are independently assessed, the cost benefit ensured, the financial implications well understood, its external impacts fully mitigated, local value addition and technology development maximized, and award of contracts are through the calling of competitive bids. The proposal for such funding from concept stage will require the identification of other transport alternatives and relevant institutions will also be invited to submit alternate proposals. Sustainability and other disaster resilience should be considered. Private sector financing will be encouraged in all transport sectors. However each such proposal requiring government approval should be carefully studied for economic viability and long term public commitments and guarantees. The Ministry of Finance will issue the relevant circulars, assign suitable staff and funding to initiate this from Jan 2018.

Amending Legislation

It will be the policy of the government that the respective ministries and agencies will make necessary statutory amendments to ensure that the functions assigned under such legislation are aligned to this policy, and the powers required for the same are vested as necessary.

Steps would be taken to improve management of transport enterprises by preventing interference in non-policy matters and in annual assessment of performances of top managers from the end of 2018. The relevant ministries will also submit to the Ministry of Policy Implementation annual proposals for continuing amendment of legislation, to further align the functions and powers to achieve the wider objectives of the UN sustainable development goals and the remedies set out within this policy. The ministries handling the function of transport will be required to amend the relevant legislation and present to Parliament before the end of 2018.

Developing Sector Expertise

The planning, design, operation, regulation and management of transport require specialized skills. The government is to stipulate the educational and skill requirements for different grades of human resources required for such functions. It will also take into consideration the professional inputs for high end planning and modern operational features. Requirements for higher management positions including positions on Boards to possess suitable sector specializations will also be introduced. The Government will also assign the transport sector budget for human resource development and research & development initiatives starting from 2020.

Summary of Remedies and the Issues and Impacts to be addressed

The following table gives the remedies that have been proposed under objectives, strategies and processes for the implementation of the proposed transport policy.

Objectives	Remedies
	<ul style="list-style-type: none"> • Improving access and making mobility affordable • Protecting lives • Building a sustainable physical environment • Protecting the natural environment • Improving connections nationally and with the world • Creating fulfilling & productive employment
Strategies / Remedies / Measures	
	<ul style="list-style-type: none"> • Managing motorisation • Making bus transport the backbone of mobility • Getting the best out of the railways • Building better highways and roads • Providing seamless mobility • Building better supply chains and logistics centres
Implementation	
	<ul style="list-style-type: none"> • Making policy effective • Amending legislation • Development sector enterprise

3. Sustainability Perspective – 2020 and Beyond

The ‘business as usual’ scenario is likely to lead Sri Lanka into a highly unsustainable transport sector by 2020. Urban congestion is likely to consume over 20 per cent of GDP, while air pollution, road accidents, waste in transit and energy consumption will continue on an increasing trend. If unattended these trends are likely to cause major economic, social and environmental impacts to an extent that liveability, both in urban and rural areas, will become intolerable by 2025. The consequent reduction of economic activity and resulting internal and external migration is likely until Sri Lanka reaches equilibrium of lower economic and social activity in keeping with the economic cost of mobility. However, the interventions proposed above will pre-empt such an eventuality and allow the country to continue at an even higher trajectory of economic growth that will reduce the cost of mobility by half by 2030 while improving social interactions and reducing environmental impacts also by at least one third.

S7. URBAN DEVELOPMENT AND PHYSICAL PLANNING³²

1. Current Status

For an economically sustainable future, Sri Lanka needs to boost its national economy with improved productivity of its labour force, enhanced and strengthened income through exports, and increased attraction of foreign investments. To that end, the government has to work on many fronts. Firstly, in a situation that the capacity of the state sector is low it has to create an environment conducive for both local and foreign direct investments. Amidst competitive conditions available in the regions as well as around the globe, the physical and the socio-political environments of the country should be attractive to investors providing a relative advantage to invest in Sri Lanka. Secondly, it has to improve the required physical, social and economic infrastructure to facilitate effective and long lasting development programmes. The fast-evolving technology and ever modernizing means of communication necessitates Sri Lanka to act fast and choose the most appropriate, economical and efficient strategies to improve its infrastructure. Thirdly, it has to generate employment opportunities appropriate for the relatively higher literate and highly trainable labour force. With the increased attainment in tertiary education and the prevalent trends of youth deviating from farming and other traditional means of employment, Sri Lanka will have to focus more on high tech and innovation based industries to cater to the emerging demand for employment in the next few decades. Yet, with the physical resources that it possesses compared to other competitors in the region and around the globe, value addition, product development and transit services, capitalizing upon its strategic geographic location is the best possible option presently available to achieve a long sustaining growth in Sri Lanka's economy. Building the country's physical environment to facilitate the above for an increased and steady social and economic development is the challenge that is in front of the planners as well as the policy makers of the day.

Sri Lanka is fast becoming an urban nation, expecting to have around 70-80 per cent of its population 'urbanized', having access to urban facilities, leading urban lifestyles and having 'urban' aspirations by 2030. A planned physical development that assures the best use of the available resources therefore, is necessary to cater to the needs of this emerging urban population. Although Sri Lanka has a wealth of natural resources spread across its land area, unplanned physical developments are causing forests, coastal areas and the central highlands to be increasingly encroached and disturbed by various human activities. Meeting the demand for land for development activities without compromising the value of these settings is a challenge that physical planners deal with.

³² Writing Team: Jagath Munasinghe (Leader), Sumith Samaratunge, and Kumaraguru Sugirdhan

Trends of Urbanization in Sri Lanka

Census 2012 figures show that of the total population of 20.4 million, less than 20 per cent live in 'urban areas' which are defined as areas under the jurisdictions of municipal councils and urban councils. Yet, there is a clear mismatch between the figures and the ground realities as more than the areas that are under municipal or urban councils are already urban in their functions and the outlook.

An independent study carried out by the University of Moratuwa revealed that the 'urbanization' in Sri Lanka is unique, compared to many other countries and rather different from the conventional understanding of the urbanization process. Instead of populations moving into urban an area, which is the conventional urbanization phenomenon, the urban facilities are fast reaching out into populations and the urban lifestyles and urban aspirations are fast embraced by the people, even though they live away from designated urban areas. In that process, the urbanization of a population is not an instantaneous phenomenon, but a continuous transformative process. Accordingly, at a given point of time, varying shares of the population are at different levels of urbanization. This is in a continuum and at present, it is observed that more than 50 per cent of the people are more than 60 per cent urbanized. They are concentrated in approximately 12 per cent of the total land area of the island. With the current trends, it could be assumed that about 80 per cent of the population will reach the level of more than 80 per cent urbanized by 2030, and will be scattered throughout the island. Containing this complex urbanization process and heading it towards a healthy direction is a considerable challenge to physical planners in Sri Lanka.

National Physical Plan

In order to address the need for a planned development throughout the island, a National Physical Planning Policy was first formulated in 2007 and enacted in 2011. The national physical plan giving effect to this policy is being updated by the National Physical Planning Department in consultation with national and regional level authorities, government and non-government development agencies and other interest groups. The Plan provides a comprehensive guide towards directing the physical developments of the island addressing issues related to conservation, optimization and sustainable use of the land, water, ocean, and human resources.

2. Critical Issues, Impacts and Remedies

2.1. Present Status, Issues and Problems

2.1.1. Irregularities in Geography

Sri Lanka has recently experienced several disasters including tsunami, landslides and riverine floods. About 20 per cent of the total land extent of the island is in the fragile hilly zone declared as vulnerable to landslides. This area accommodates a residential population of about four million. About another five per cent of the land is located within a one meter elevation from the mean sea level in the critical coastal zone that is exposed to sea level rise and the other forms of climate change effects. Of the total population, about 20 per cent is settled within this zone.

The on-going development patterns show that the populations in both the fragile central hills and the coastal zone have been gradually increasing over last few decades. At the same time, a majority of investments on urban facilities and industries within the last 50 years have also taken place within

these zones. These developments invite threats in many forms into these areas. On one hand, they accelerate the degradation of the environment in the area due to the low carrying capacities. On the other hand, the residing populations as well as the properties are increasingly vulnerable to disaster situations.

The Western Province has an unbalanced concentration of populations and economic activities, causing many disparities across the island. It is noted that 25 per cent of the total population and 40 per cent of the GDP contribution and more than 50 per cent of physical infrastructure concentration is in five per cent of the land space of the island that is delineated as the Western Province. All major developments in the country are still promoting the primacy of Colombo, which is the largest urban agglomeration and the epicentre of the economy of the country.

2.2. Likely Impacts and Consequences of Problems

- There is a cost of sub-optimum utility as a result of non-utilization of available resources to the best of their capacities in the absence of access to such resources. Some of the highly potential resources such as attractive beach fronts, abundant wild life locations and scenic settings, the highly trainable human resource available throughout the island, and the less-used or unused lands suitable for various developments are examples of resources with such sub-optimum utility.
- Scattered settlement distribution patterns in the island causes high costs in providing and maintaining necessary physical infrastructure such as roads, and service networks. According to World Bank (2015), Sri Lanka is one of the countries that has a well spread road and service network, but is poorly maintained. The scattered settlement pattern also incurs heavy costs in providing transportation, education and health services.
- The lack of a futuristic and holistic vision towards the development of the physical environment and consequent incremental investments in urban development and related infrastructure in inappropriate locations enhances the prevalent scattered development. Apart from the scatter, the overly designed solutions and non-consideration of cost effective and more productive alternatives, especially in the development of transport infrastructure, is another form of sub-optimum utility.
- There is also a cost of opportunities. On one hand, since a plan is prepared expecting the best opportunities through the most effective means of implementation, deviations from the plan often delay the achievement of timely targets, thereby losing the best opportunities targeted by the plan. On the other hand, since the Plan intends to achieve equity and balanced development, deviations usually affect some groups in the society by depriving them of opportunities to share benefits.
- Cost of degradation occurs as a result of both overuse and incompatible use. The use of some of the fragile natural environmental systems over and above their carrying capacities is common in examples such as urban development in lands associated with wetlands, river sand mining and earth excavations, and deforestation for timber and farming. It is also seen in some environmental settings such as beach fronts, hill country attractions and cultural heritage sites. The incompatible uses are mostly seen in the context of urban development, plantations, and industrial locations, where the conflicts between what is available and what is imposed lead to further conflicts between the authorities and the communities, regulators and the regulated, as well as the government and the governed.

- Both the overuse and the incompatible use incur irreversible costs to the physical environment and thereby to the society and the economy as a whole.
- Unplanned development at the local levels have already caused several disasters over the last few years taking many lives and causing irreversible property damages. It has also caused inefficiency, congestion and other externalities, especially in our urban areas on a daily basis. Chaos, pollution and public nuisance have become integrated parts of the ongoing development activities. These also affect the quality of life of the inhabitants both in urban and non-urban areas parallel to the deterioration of the unique environments in them.
- In addition to the costs, the above kind of development can also cause frustration and loss of confidence among the general public.

Gaps in the Implementation of Planned Developments

In spite of the availability of a National Physical Planning Policy since 2007, Sri Lanka has not been successful to have planned development in its physical environment so far. Ad hoc developments, both large and small, are common in all parts of the island. The main observable reason for this situation is the gap between national level plans and the local and institutional level implementation.

In order to facilitate a planned and rapid urban development, the Urban Development Authority (UDA) was established and vested with powers and functions for preparation and implementation of Development Plans for areas declared by the minister in charge of urban development. Even though 246 areas have been declared as 'urban development areas' from time to time under the provisions of the relevant Law, only 40 such areas are furnished with fully enacted development plans. The others, along with the non-declared areas remain with no visionary plans, and they are grown without much concern towards a sustainable development.

Inadequate awareness among citizens of the plans prepared by the government organizations and the importance of such plans to guide the physical development of the island is yet another reason for the continuous non-compliance. The awareness, alertness and the preparedness to participate are not adequately high among the general public, except for a few interest groups. Meaningful consultations with stakeholder communities prior to launching new major projects is one way to increase awareness and compliance and to increase a sense of public responsibility and shared citizenship.

In addition to the lack of compliance, a lack of coordination among different developmental agencies is another major drawback. The famously quoted road digging by different agencies for the laying of different types of service lines is still valid for all areas and all development agencies. One reason for this lack of coordination is the fact that a great majority of large scale infrastructure development projects in Sri Lanka is funded by international lending agencies and foreign governments. Holistic project planning and integrated implementation is rather difficult due to piecemeal allocation of funds, terms and conditions set upon loans and hurdles in procurement processes.

Another of the observable hindrances for a coordinated development is the equal authoritative positions enjoyed by all development agencies. There is no clear hierarchy within the present institutional structure that places implementing agencies in a particular order with powers and functions delegated in that order. In the absence of such, each agency formulates its own priorities,

depending upon the desires of the higher political authority. Several examples can be quoted to explain this situation. Government housing programmes in the highlands of Central, Uva and Sabaragamuwa provinces on lands which are highly vulnerable to landslides and in need of conservation is one such example. Construction of expressways in areas with fragile environmental systems is another.

Likely Impacts

- Ad hoc developments, both large and small, have already caused an irreparable damage to the natural environmental systems, human lives and their properties.
- Unplanned and non-coordinated developments waste all forms of resources and do not enable the gaining of best results out of the respective investments.

Limitations in the available National Policy

Existing plans, including the national physical plan, have limitations in terms of meeting current development needs. The existing national physical plan was formulated based on the situation more than ten years prior, and therefore, it needs to be urgently updated to meet current and emerging situations.

The existing national physical plan should be regarded for its many progressive elements, such as the identification of 'central fragile area', 'coastal zone' and 'wildlife corridors' as crucial to be conserved for future generations; the proposal to contain future urban developments into five Metropolitans along with a hierarchy of urban centres; and addressing the need for greater accessibility to all locations across the island.

However, the plan also suffers from the limitation of having its main objectives not being compatible with the current priorities of the Government. At the same time, the validity of the locations proposed for the five Metropolitans and the disregard for emerging urban agglomerations for instance in the face of current development trends needs to be examined. The feasibility of the proposed ambitious mega scale developments such as expressways, modern railways, airports and large cities in a resource-constrained economic environment in Sri Lanka is questionable. In addition to overcoming the above limitations, strategies to deal with newly identified challenges such as increased landslide prone areas, the need for reforestation, as well as emerging potentials and opportunities such as wind power, oceanic resources, petroleum and gas deposits, the changing political climate, and the trade patterns across the globe will have to be incorporated into the National Physical Planning Policy.

2.2. Remedies, Measures and Implementation

- The way out from the given situation is to update the existing National Physical Planning Policy with a range of background studies, a series of in-depth analysis and a wider range of consultative participation of expertise, development agencies and interest groups. The following are highlights from the currently ongoing work of the updated National Physical Plan for Sri Lanka 2050.

2.2.1. Establishment of Goals

Short Term Goals (2020-25)

- a) Spatial structure that facilitates unhindered growth in the economy, more employment and business opportunities for Sri Lankans within the island and attracting local and foreign investments for development.
- b) Physical Development that assures the best utility and the efficient use of the available land and infrastructure, and built into the unique landscape of the island
- c) Development that does not compromise the long-term sustainability of land, water, and other resources, natural eco-systems, cultural landscapes and traditions of the inhabitants.

Medium Term Goals (2025-30)

- a) Space that facilitates the transformation of the national economy from conventional industries to high-tech and innovation based Industries and increased international trade.
- b) Developments that promote the exploration of new opportunities and untapped resources in land, ocean, location and in inhabitants.
- c) Physical environment that supports the increased attraction for investments and trade.

Long Term Goals (2050)

- a) Sustainable Use of land, water, ocean and other resources of the Island, preserving agriculture, traditional Industries, cultural landscapes and the practices.
- b) Responsiveness to the effects of climate change and natural hazards
- c) Balanced development across the Island that provides for equity, equal opportunities and accessibility to resources for all.

2.2.2. Conservation of the ‘Critical’ and the ‘Unique’

In order to economize future physical developments, the best possible option for Sri Lanka is to rely upon many of its natural eco systems, water resources and unique landscapes. Therefore, the strategic conservation and improvement of the existing environmental systems and settings is regarded as a guiding principle of the National Physical Planning Policy. The following are the main features identified in this respect.

- Central fragile area (area above 300 meters from msn) with its present landscape is critical for feeding all major rivers and for the fragile geo morphological settings. Conservation of this area necessitates discouraging large scale developments within the upper catchments of major rivers and demoting further growth of the existing settlements.
- Coastal fragile zone (area declared as Coast Conservation Zone by CCDSL) is critical for the preservation of the biodiversity as well as for the economic activities associated with it such as tourism and fisheries. Conservation of the coast necessitates redirecting future expansions of the existing settlements and other developments, other than tourism related developments, elsewhere in the island.
- Existing forests, wildlife reserves, sanctuaries, catchments of water bodies, etc, too are important for the biodiversity, livelihoods and the economic activities associated with them. In

order to conserve them future physical developments need to be planned with adequate sensitivity towards such settings.

2.2.3. Optimal use of the 'Available':

Under the constrained economic conditions in Sri Lanka, the optimal use of the available resources and the existing infrastructure has become a necessity. Accordingly, the following aspects should be given due consideration:

- Out of nearly 66,000 square kilometers of land available within the island, about one quarter is free from effects of landslides and frequent floods, and geographically suitable for development. Yet, when considering their locations, the cost of providing necessary infrastructure and other services for developing them, and the present level of their utility, intensified development is a necessity for the optimum use of those lands.
- In recent years, Sri Lanka has been investing high amounts in infrastructure developments such as the expressways and highways, water supply projects, and power and energy. Most of these investments came in the form of loans which added to the debt of the nation. Most of their payback periods vary from 20-30 years. Therefore, rather than requiring new investments the optimum use of the available and proposed highways, expressways, railways, water supply and drainage infrastructure, etc is crucial for an effective development.
- In terms of the locations, the utility of land and infrastructure, and also in terms of conservation, the use of used lands (brown fields) rather than fresh lands (green fields) is always advised. In this regard, the existing settlement locations have possibilities for intensification of development along with the augmentation of space, facilities and amenities. Future urban development should be contained into a manageable limited area and discouraged from sprawling into vast land extents.

2.2.4. Increased 'Liveability' in the Human Habitats

Even though all areas in Sri Lanka are suitable for human habitats compared to other parts of the world, not all areas are equally liveable for humans. Some areas have climatic variations such as temperature fluctuations, precipitation levels and the disaster situations which make them less suitable for future habitats. At the same time certain areas undergo difficulties in providing basic human needs such as water and food, in addition to the needs such as physical and social infrastructure, services, and accessibility. Selection of the most suitable locations in terms of the climatic conditions, natural settings and service availability will influence the cost effectiveness, the success and the sustainability of the physical plans prepared for Sri Lanka.

2.2.5. Exploration of the ‘Potentials’ and the ‘Enhancement’ of Use

It is clear that most of the potential resources in Sri Lanka have yet to be tapped to their full capacity. One such resource is the ocean space declared as an Exclusive Economic Zone that extends over 250,000 square kilometers into Indian Ocean. Except for fishing and a few minerals, the rest of the resources embodied in it remain intact. There are many other resources associated with the ocean space such as the winds, ocean waves, likely petroleum and gas deposits that have not been adequately explored yet.

The inland locations which have high potentials to attract tourists need to be promoted in a planned manner. Other than the popularly visited locations, a vast variety of spaces still remains unknown to many and therefore, not explored for their potentials.

Human resources, specially the youth in the labour force, with various skills and education levels is another resource to be considered for a sustainable development. According to demographers, if not put into effective use within the period that it yields ‘population dividend’, Sri Lanka will miss another opportunity to gain the competitive advantage that it possesses in the region.

Future developments should be supportive of such explorations.

2.2.6. Strategic Policies

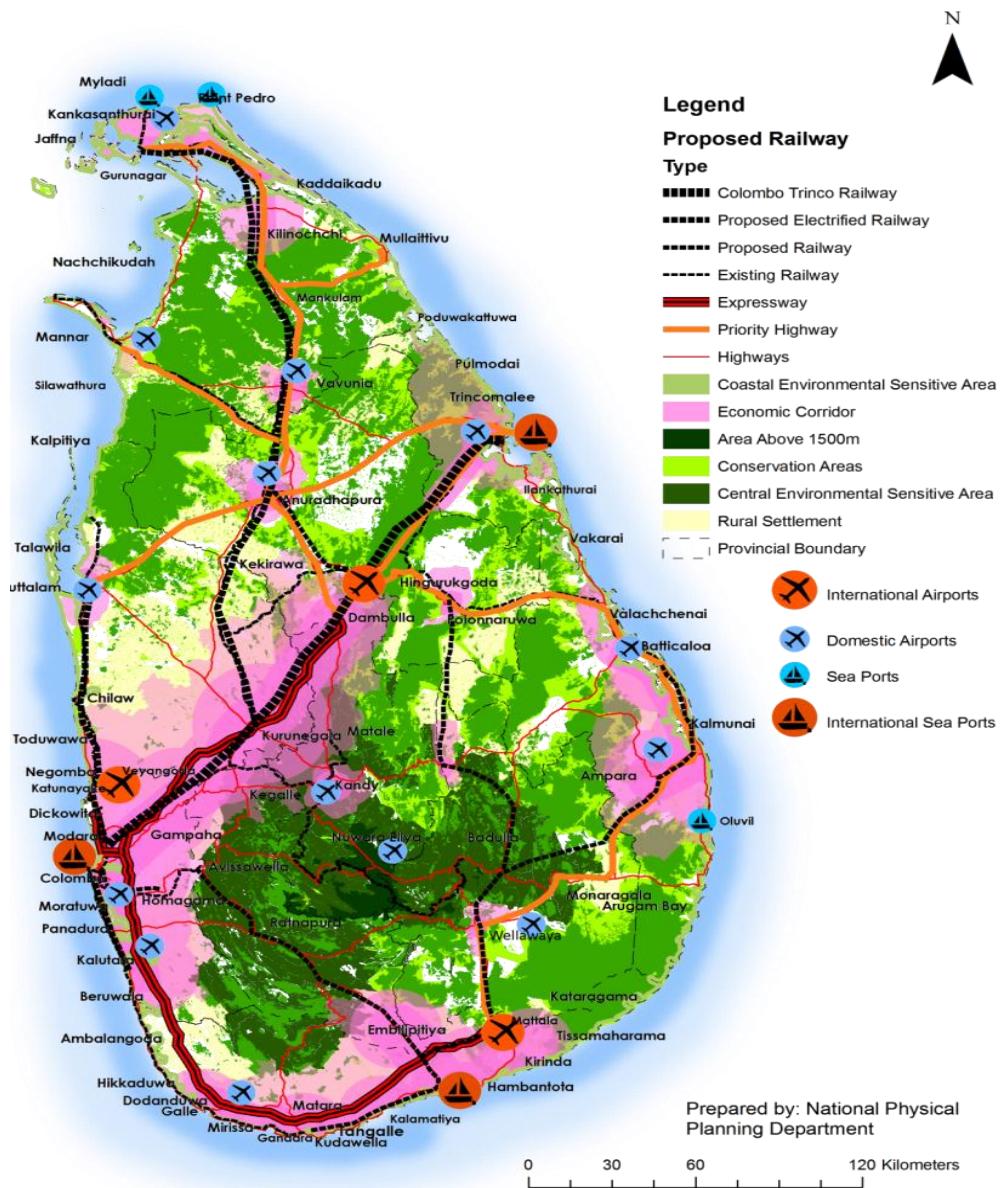
Spatial Strategy

Accordingly, the overall configuration of the land use in the island in 2050 is expected to be transformed in the manner shown in **Figure S3.4**.

In this strategy, the proposed conserved central fragile area, coast conservation zone and the forest area covers nearly a third of the land area. The physical developments within these zones are proposed to be guided with stringent regulations and guidelines with the support of the existing legislative framework. The conservation will be supported by a depopulation strategy. It is proposed to attract a larger share from the next two generations (2020-2050) of the populations in these areas into the proposed economic development zones by means of more attractive employment opportunities, affordable housing and more beneficial and vibrant living environments.

The major economic development activities are expected to be concentrated into four urban corridors, two metro regions and nine main cities, which have been identified as the most effective locations in conformity with the three principles mentioned elsewhere in this report. The economic corridors will be sharing the largest contribution to the national economy, mainly by means of value addition to both local commodities as well as import-export based global supply chains, capitalizing upon the three international ports in Colombo, Trincomalee, and Hambanthota, and the small ports in Oluvil and Jaffna. They thus, will be the main sources to attract investments and to provide employment opportunities.

Figure S3.4. The Proposed Spatial Configuration of the Physical Environment 2050

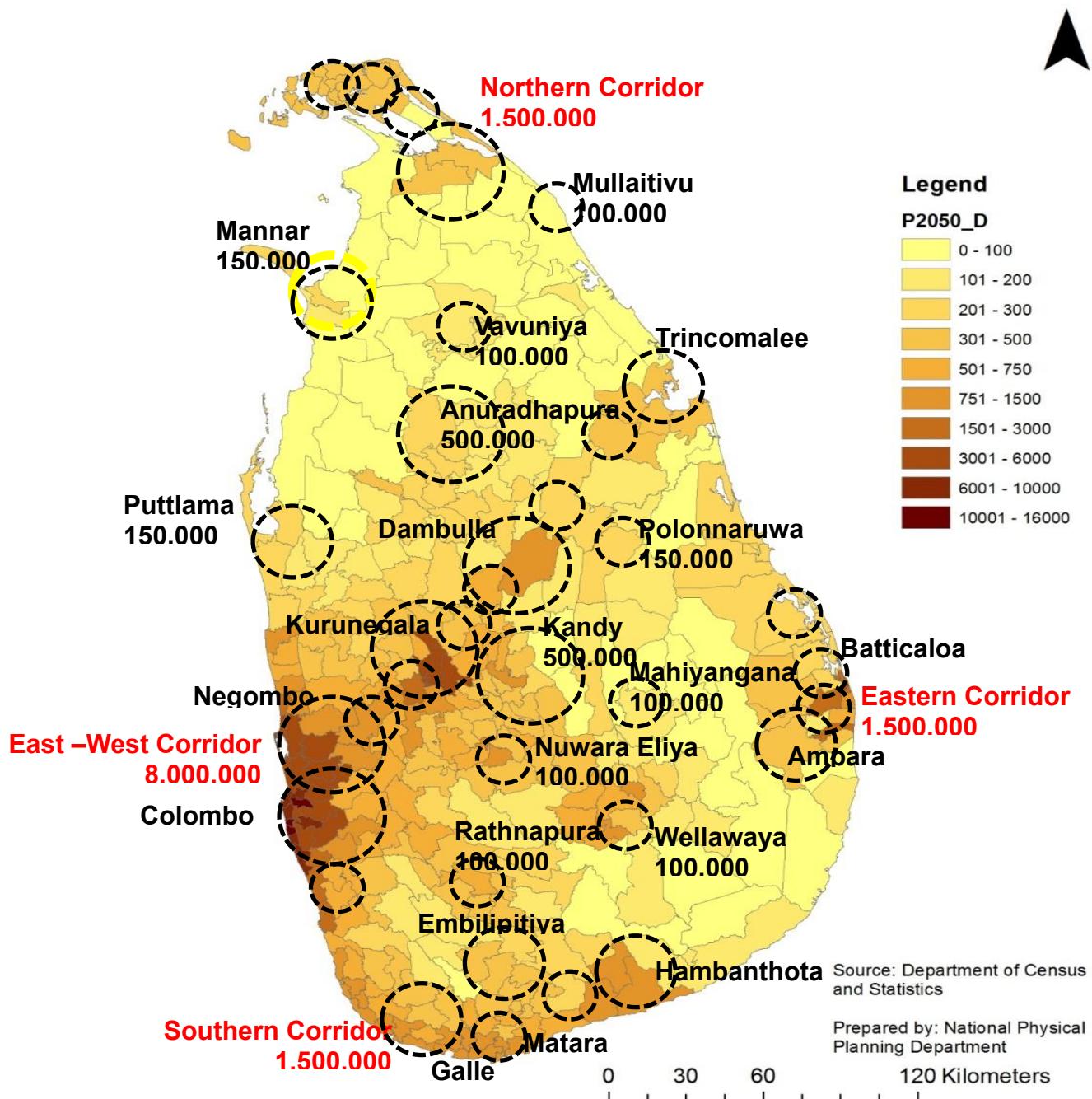


Settlement Distribution (see Figure S3.5)

In order to achieve the economic development targets, urban sector developments (non-agriculture based) will have to play a vital role and thus, need to be given high emphasis, while due consideration should be paid to the non-urban sector (agriculture and plantation).

Accordingly, the urban share of the population (population engaged in urban sector employment having access to urban facilities and enjoying urban lifestyle) needs to reach around 70- 80 per cent within the next 30 years.

Figure S3.5. Proposed Population Distribution Pattern 2050 (Populations in DS Divisions)



The successful implementation of the settlement pattern will depend upon the provision of a few important factors:

- Location of the employment and business opportunities (mainly service sector) for the next generation entering into the labour force.
- Availability of land/houses and urban infrastructure (especially water supply and public transportation) at affordable prices at locations appropriate for residential developments.

c. Availability of high performing social Infrastructure (especially primary and secondary schools)
 According to the findings of the analysis the most advantageous locations in terms of infrastructure availability, road/rail accessibility and environment sustainability, are in the central mid-plains between Colombo and Trincomalee, to the north of the central highlands.

It is expected that around 70-80 per cent of the population will be more than 80 per cent 'urban' in terms of the level of accessibility to urban facilities, engagement in livelihood and the lifestyles. Out of that population at least eighty per cent is expected to be concentrated in main urban corridors, metro zones and the main cities, identified within the structure. Such concentration is mandatory to meet the thresholds of investing on specific high end urban facilities and to have the critical mass required for their long sustenance.

In order to capitalize upon the advantages of the two major ports, the transport infrastructure and the favourable living conditions, a reasonable share of the future population (approximately 30-35 per cent) in Sri Lanka should be settled within a corridor between Colombo and Trincomalee.

In this urban corridor, the Colombo metro region, the conurbation of several urban areas around Colombo, will be the largest concentration of settlements that will be a home for around four million (4,000,000) residents. The other major concentrations are proposed in five metro regions around the urban areas centring Negombo (1,000,000), Kurunegala (1,000,000), Dambulla (500,000), and Trincomalee (1,000,000), along with a series of 'cities' whose resident populations may vary between 100,000 – 200,000, and 'Small Towns'.

Three other major settlement concentrations are proposed in the North from Jaffna to Kilinochchi, in the South between Galle, Matara and Hambanthota, including Embilipitiya, and in the East from Valachahenai to Ampara, via Batticaloa. Each of these corridors are expected to accommodate populations up to one and a half million (1,500,000) in each of them.

It is expected that a major share (70-80 per cent) of the population will be living and employed within the corridors, for which the commuting will be contained into spaces earmarked for the corridors.

Other than the four urban corridors, two metro regions at Anuradhapura and Kandy are proposed with residential populations of around 500,000 in each of them.

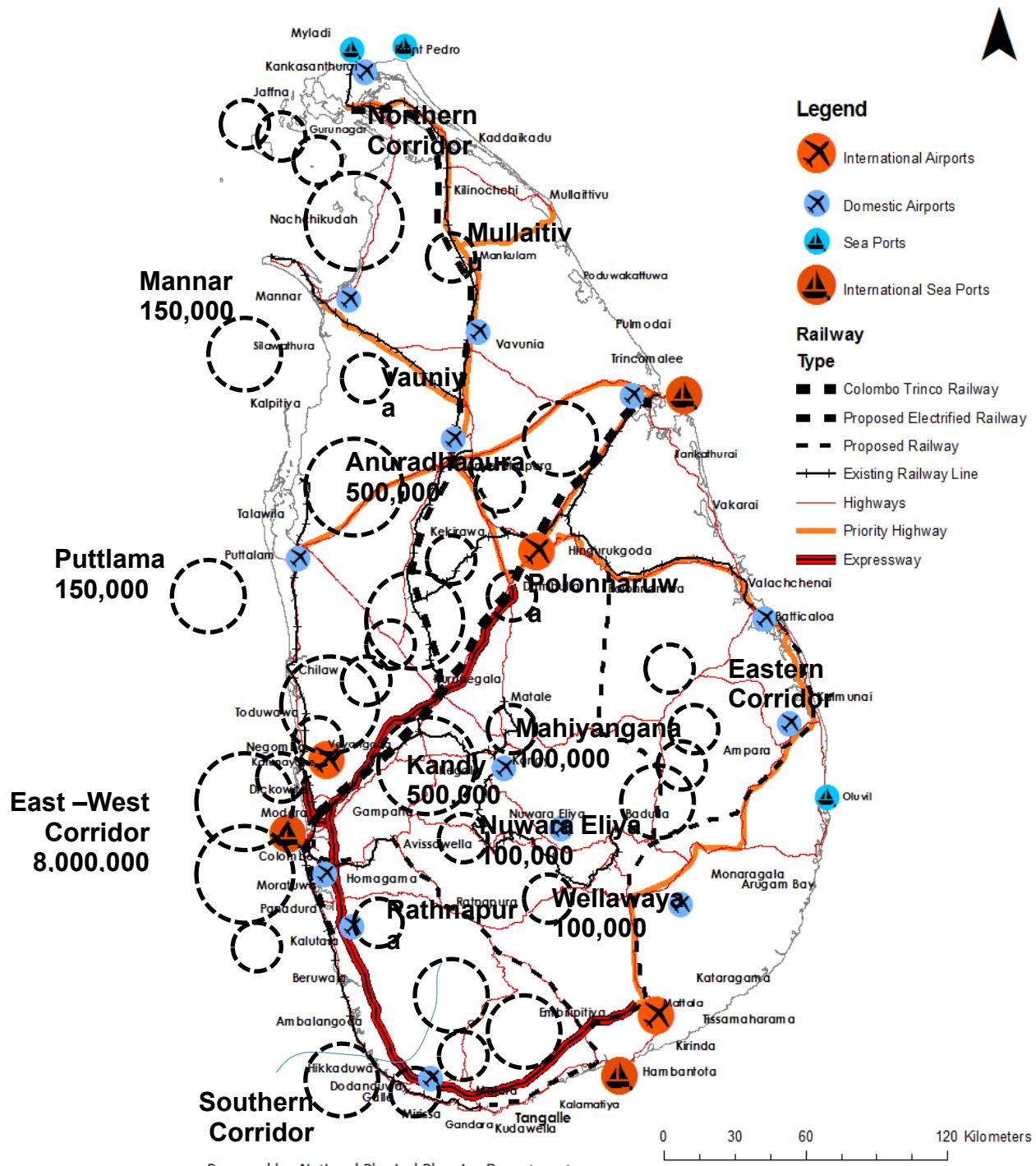
Isolated from the above, as the strategic investment locations to harness the economic potentials of the island and also to lead future urban development into a sustainable direction, nine main cities are proposed at Mannar, Mullaitivu, Vauniya, Puttlam, Polonnaruwa, Nuwara Eliya, Mahiyangana, Wellawaya, and Rathnapura. Each of these cities are expected to accommodate about 100,000-200,000 people in them.

Infrastructure Provision (see Figure S3.6)

In order to assure a sustainable provision of both physical and social infrastructure, three aspects are proposed to be considered:

- a. Access and the affordability to both physical and social infrastructure are the key factors that decide the future land use and settlement distribution pattern and therefore, there is a need for pro-active strategies for the provision of infrastructure.

Figure S3.6. Proposed Infrastructure Configuration 2050.



- b. Large scale infrastructure and urban facilities necessitates heavy investments for their provision and therefore, there is a need to optimize the use of the available infrastructure with minimum expansions and augmentations.
- c. With the fast-evolving technology and the changing lifestyles of the people, the day to day behaviour as well as the demand for facilities is likely to change within the period envisaged in this plan, and therefore, in a transforming situation all investments bear some levels of risks of not having the best utility and not yielding the expected benefits.

With these considerations, the proposed urban corridors and the metro areas will be the major concentrations of infrastructure and facilities.

Out of all modes, rail transportation was studied to be the most economical for mass transportation. Therefore, in the four urban corridors, railways are expected to be the most attractive among all modes. In order to meet such expectation, a remarkable improvement in the available rail network is essential. Electrification of the rail between Aluthgama and Polgahawela is already proposed by the railway improvement master plan. This project will complement the proposed East-West urban corridor. In order to move it further, this electrified rail transport should be completed with a possible extension up to Kurunegala by 2025. In the Railway Improvement master plan, there is a proposal to link Kurunegala to Habarana, via Dambulla. This proposal is highly supportive of the proposed corridor development scenario. This length and the available rail line from Habarana to Trincomalee should be improved by 2030 into electrified, fast moving trains to enhance the linkage among locations within East-West corridor.

In this scenario, there will be an electrified train service available from Aluthgama via Colombo to Trincomalee, via Kurunegala, Dambulla and Habarana by 2030. In order to facilitate the developments in the southern corridor, the existing rail services from Aluthgama to Matara needs to be improved. As per the available proposal this service can be extended from Marata to Hambanthota. In the northern urban corridor rail services should be intensified between Kilinochchi and Kankasanthurai by 2025. In the eastern corridor, rail services between Valachchenai and Baticcaloa needs to be improved, while a potential extension of the same line up to Ampara via Kalmunai by 2025 is planned. The other available network and the services in them should also be improved in order to facilitate inter-regional transportation needs.

Expressways are relatively more expensive infrastructure developments, but can facilitate fast communication between locations. The presently available set of expressways and the ongoing set of projects connect Colombo to Matara and further extends to Hambantota. Others connecting Colombo to Dambulla via Kurunegala will positively contribute to the movements between the locations that falls within the development corridors. The movement patterns and the projections into the future urban development scenario indicates that the presently ongoing expressway projects, namely Colombo-Hambanthota, Colombo-Dambulla, and the outer circular road, will fulfil highway mobility needs up to 2030. Further improvements will be evaluated based on the situations existing close to 2030. Fast improvements to rail service as indicated above and the upgrading of the existing regional highway facilities will adequately serve demands up to 2030.

In order to improve inter-regional connectivity and to facilitate speedy access, the existing highways that connect the proposed metro regions and the main cities must be improved and maintained on priority basis.

It can be noted that efficient, affordable and reliable public transportation is a key factor for the improvement of liveability in urban areas.

It is observed that our urban areas can be made more attractive with a little more intervention, especially by regulating their pedestrian environments. Walking and cycling may be the best solution for most of the issues presently apparent in Sri Lankan urban areas such as the traffic congestion, unauthorized parking, accidents etc. In order to minimize these situations, an attitude change in both planners and the policy makers is essential. As a priority measure, pedestrian friendliness should be considered as the main objective of future urban plans, instead of the present dominance given to vehicular movement. The pedestrian areas should be suitable for the tropical weather conditions available and appropriate designs should be devised accordingly.

At the local level, with the increasing rate of urbanization of lifestyles of the inhabitants, the demand for recreation facilities also increases. According to WHO, this is a necessity for a healthy nation and will help to reduce the costs of providing health services. The general standard is to have one hectare of open space for 1000 persons, which is hardly met in present urban development schemes. Nevertheless, provision of large extents of lands for open spaces for public recreation facilities is a challenge amidst the scarcity of land and the pressure for developments in urban areas. Yet, innovative approaches such as the opening of canal reservations, river banks, marshy areas and beach fronts along with reasonable facilities and maintenance of them will enable overcoming the difficulties in providing public open spaces. Parallel to that, providing wider road spaces at neighbourhood levels to be used as makeshift children's play areas and gathering spaces will work as an alternative way of providing public open spaces and will also serve to strengthen 'neighbourhood' or 'lane' communities.

2.3. Implementation

2.3.1. Common Strategies

To ensure the successful implementation of the above strategies, the following measures are suggested:

- a) Head of the State level intervention to enforce the National Physical Planning Policy
- b) Promotion of wider and frequent awareness among general public of the national physical plan and the state of its implementation.
- c) Strengthening Planning and Implementation divisions of the local authorities with relevant expertise, technology and the institutional setting.
- d) Strict conformity checks of the compliance of projects to the local development plan in the allocation of funds from national, provincial and local budgets.
- e) Setting up annual and periodic implementation programme within the national physical plan.

3. Sustainability Perspective – 2020 and Beyond

As stated earlier, for a healthy social and economic development, a planned physical development is not an option, but a necessity. In order to achieve a sustainable physical development, the updated national physical plan is proposed to be implemented under the directives of the National

Physical Planning Council, headed by His Excellency the President and represented by the relevant line ministries and institutions. The national physical plan should be adopted as broad national level policy guidance for the identification, selection and the implementation of inter-regional, regional and local level development projects and programmes. In the implementation of the plan, the government may consider priorities that will serve best to the social and economic development as a whole, and the benefits of which will reach the community at large. The government may also reconsider some of the projects which are presently in the pipeline, for their immediate requirement, and the unfavourable impact that they can have upon a planned, sustained and broad physical development in the island.

The initial planning and implementation of the high priority projects, such as the highway and railway development, would not take longer than and should be realized by 2025, in order to lay the foundation for future settlement development pattern and to capitalize upon the dividends of the demography and the global opportunities. The pull factors of the major infrastructure developments, upon the completion of such projects, will initiate a gradual transformation in the physical landscape of the island and thus, the initial stages of planned urban development and settlement distribution pattern can be expected by 2030.

S. SECTORS

S8. WATER³³

1. Current Status

Sri Lanka is blessed with an abundance of water radially flowing from the central hills to plains over 103 river basins. These rivers have excess amounts of water and could be diverted into nearby dry areas by gravity, free from the costs involved with lift irrigation.

Most development projects presently planned in Sri Lanka would not reach their expected targets if the availability of water resources is not properly ascertained. A complete national level water resource planning activity is yet to be undertaken to ascertain current or future demands.

Rainfall patterns in the recent past have changed. Drought and flood situations are frequently experienced. The "dry to wet" gap is increasing, indicating that more drought periods may be expected in the near future. Statistics also show that rainfall received in the Mahaweli basin has been gradually decreasing over the last few years. This reduction in rainfall is experienced mostly in areas in the North - East slopes of the central hills, i.e. mainly the North-East and North-Central Provinces. However, the rainfall received in the western slopes, i.e. Sabaragamuwa, Southern Province and Kaluganga, Nilwala, and Kelani river basin have shown a considerable increase. Meteorological scientists also predict a reduction in annual rainfall in the long term as a result of global warming, along with El-Nino, La-Nina and changes in sea current temperature, and uncertain flow pattern of under currents.

However, considering the unpredictable behaviour of rainfall patterns, a "real time water management system" should be introduced to manage the water allocation for stake holders. Use of modern software coupled with the "Hydro Meteorological Information Systems"(HMIS) would be useful to ascertain if the real time rain water runoff from catchments matches the real time water need at the users end.

Also, public – private participation should be encouraged in the areas with high return on investments like commercial agriculture agro/eco-tourism, mini hydro and inland fisheries etc.

However, special attention should be paid to form a "common secretariat" representing all departments, to take decisions on water sector developments, water use, planning etc., as the present involvement of many agencies has led to poor management of water resources in the country.

Optimization of water use in the future should be a matter of high priority. Large scale developments in the Mahaweli basin should be undertaken only after careful and intensive studies that ensure availability of expected water volumes. Any decision on "Transbasin Diversion" would be a very sensitive issue in the near future if studies fail to satisfy the minimum of 30 year water demand in the respective river basin. It is doubtful that the conventional way of ascertaining the "unit hydrograph" and "PMF" with 40 or 60 year old historical data would further simulate the future rainfall predictions. Alternatively, running a simulation model with the last 10 year (or 05)

³³ Writing Team: S R K Aruppola (Leader), and Sarath Gamini

rainfall records with some theoretical extrapolations, would help to understand the variance of results with present climatic changes in a more realistic manner. It is also prudent to limit transbasin diversion to minimum levels and promote crops that are suitable for cultivation in that respective basin under available water conditions, having considered the uninterrupted demand for other utilities like drinking, power, industrial use etc. An urgent national priority should be given to address the water storage. The preparation of a "national water use master plan" is suggested, as soon as possible, covering the surface water and ground water resources in Sri Lanka.

2. Critical Issues

2.1. Abandoned Village Minor Tanks

2.1.1. Present Status, Issues and Problems

Rural village farming mainly focuses on paddy farming and other highland crops. Most village tanks have been abandoned due to lack of maintenance and siltation thus resulting in water scarcities for farming. Most such tanks are under the purview of Agrarian Departments and local authorities, while some are under the Irrigation Department and Mahaweli Authority. Although renovation of these tanks will increase supply of drinking and irrigation water, and improve the groundwater table, lack of funds allocated in annual budgets accord lower priority for tank renovation over other development activities.

2.1.2. Likely Economic, Social and Environmental Impacts

- Negative impacts on GDP and farmer income due to abandonment of farming.
- Decreased quality of life of farmer families.
- Increase in social unrest resulting from loss of work engagement and isolation.
- Effects on forest cover due to lowering of groundwater table.
- Reduced availability of drinking water for local habitats, animals, birds etc., due to absence of surface water storage tanks.

2.1.3. Remedies, Measures and Implementation

- Allocate sufficient funds to local authorities to restore tank bunds with farmer participation.
- Commence an island wide programme to collect necessary data to restore tanks.
- Plan for future maintenance of tanks with farmer participation.
- Introduce crop diversification programmes and climate change adaptive mechanisms

2.2. Water Scarcity in the Jaffna Peninsula

2.2.1. Present Status, Issues and Problems

The quality and quantity of water available per capita in the Jaffna Peninsula is at highly undesirable levels causing a severe problem of lack of water for drinking and agriculture in the area. Soil is sandy and has a high ingress rate with sea water intrusion. Salinity level of groundwater is very high and hard. High rates of pumping out groundwater will accelerate sea water intrusion.

2.2.2. Likely Economic, Social and Environmental Impacts

- Dwellers in the Jaffna Peninsula have to incur expenditure on bottled mineral water for drinking, causing pressure particularly on low income families.
- Adverse effects on agriculture in Jaffna, as pumping from agro-wells aggravates sea water intrusion leading to reduced crop yields.
- Prevalence of renal disease due to drinking of hard water.
- Lack of agricultural opportunities resulting in low income, elevation of poverty levels and social unrest.
- Insufficient top soil growth leading to soil erosion, soil evaporation and degradation of the quality of air moisture and hence a dry atmosphere.

2.2.3. Remedies, Measures and Implementation

- Examine possibility of restoring small pocket tanks (around 600) scattered throughout the Peninsula.
- Introduce wet blanketing to seal the tank bed and control penetration.
- Install reverse osmosis plants to mitigate renal disease conditions.
- Study potential use of *Iranamadu* spill at the confluence of *Kanagarayan Aru*.
- Isolate major lagoons to store freshwater and curb sea water infusion to lagoon body.
- Revisit the *Arumugam* proposal “River for Jaffna” and modify it to suit present demands.
- It is important to consider water resources development in Vadamarachchi lagoon, especially for drinking water requirements.
- Study suitable areas to recharge aquifers in the rainy season using runoff

2.3. Degradation of Water Quality in Major Water Sources

2.3.1. Present Status, Issues and Problems

Virtually, all surface and groundwater sources are being polluted at an alarming rate including all 103 river basins, reservoirs, ponds, tanks etc. There is no robust legal framework to prevent polluting activities while enforcement of existing regulations is not effective.

2.3.2. Likely Economic, Social and Environmental Impacts

- Degradation of water quality leads to expensive treatments to purify water, having implications on transfer of such costs to end users.
- Pollutants, including poisonous gases, in degraded water affects the health of communities, and will cause additional burden on low income groups.
- Growth of algae may interrupt water bodies.
- Decrease in crop harvest due to poor irrigation.

2.3.3. Remedies, Measures and Implementation

- Commence a national level mechanism with the support of the Central Environmental Authority to control water pollution.
- Identify main polluters in each province and issue stern warnings and take legal action.

- Appoint a “Special Task Force” with relevant authorities and with the support of Army, to inspect and identify polluters of rivers and reservoirs that discharge solid and liquid waste in specific areas.
- Take action against illegal encroachment in reservations.
- Conduct comprehensive water quality testing of water bodies periodically.

2.4. Control Catchment Erosion

2.4.1. Present Status, Issues and Problems

Catchment erosion has severely affected reservoir capacities and accelerated landslides in mountainous areas. Major causes are uncontrolled construction, excavation and degradation of forest cover. This results in the removal of fertilized top soil cover rendering the ground unsuitable for crops. There is also a lack of monitoring of regulatory conditions imposed by respective authorities to control constructions in sensitive areas.

2.4.2. Likely Economic, Social and Environmental Impacts

- Decreased water volume impacting hydro generation, agriculture and drinking water supply leading to highly negative impacts.
- Loss of drinking water, especially in urban cities impacting the minimum health index affecting city planning and city extension.
- Risk of landslides in urban areas.
- Damage to forest cover and changes in water streams due to landslides and soil erosion.

2.4.3. Remedies, Measures and Implementation

- Construct “micro bunds” on mountain slopes along the contour to control surface erosion and improve water infiltration and absorption into sub soil strata.
- Effective enforcement of regulations by all relevant regulatory institutions.
- Review and update existing regulations to effectively control damage to the environment.
- Launch an island wide awareness programme with the support of the respective local authorities to educate best practices in basin management, including excavation control, home garden landscaping, mini agriculture construction of roads etc.
- Commence reforestation where possible with proper drainage, controlled use of pesticides, weedicides etc.

2.5. Inadequate Adoption of Rain Water Harvesting (Roof to Tank concept)

2.5.1. Present Status, Issues and Problems

Shifts in monsoonal rainfall and their increased intensity, expansion of wet to dry gaps and long periods of drought conditions are now regularly experienced. Scientists have also predicted that this pattern will continue into the future as well. There is also a lack of proper awareness in the use of "appropriate low cost technology "at village levels over the advantages of rain water harvesting.

2.5.2. Likely Economic, Social and Environmental Impacts

- Abandonment of domestic level agriculture on a regular basis due to increase of domestic water prices.
- Use of drinking water for agriculture results in a high expenditure for the National Water Board.
- Lack of opportunities to engage in work and low income due to deserted home lands may generate social unrest.
- Vulnerability of bare lands to high erosion with possibilities of landslides.

2.5.3. Remedies, Measures and Implementation

- Introduce drip irrigation technology for small home land agriculture with an overhead tank, solar pump and suitable tank to store rain water.
- Promote rain water harvesting in rural areas with the support of local authorities as pilot projects.
- Promote home gardening.
- Maintain quality of drinking water and provide households with filters.
- Fix solar pumps with overhead tanks to reduce operations costs.

2.6. Use of Agro Wells (Dug wells) or Tube Wells

2.6.1. Present Status, Issues and Problems

Existing agro wells have to be desilted, renovated and fixed with solar pumps and low cost overhead tanks to supply water for highland crops during droughts when no irrigation water is possible. Use of deep wells (tube well) will have to be resorted to only when other options are not possible, as scholars suspect that water with high content of minerals may cause kidney disease issues.

2.6.2. Likely Economic, Social and Environmental Impacts

- Abandonment of farming activities and low income generating activities may lead to unrest.
- Availability of ground water for use in droughts may help crops but at the same time excessive pumping may lower the water table.

2.6.3. Remedies, Measures and Implementation

- Introduce a pilot project in selected areas to set up agro-wells to be used for future droughts.
- Implement a programme to create awareness among authorities on collection of data, and to launch few pilot projects in respective districts.
- Provide technical support for "Dug Well, Solar Pump and Over Head Tank", following appropriate technology to suit available resources in specific areas.
- Renovation of Abandoned or dilapidated Agro-Well, Dug Wells and Deep Wells (Tube wells)

2.7. Inefficient Water Use

2.7.1. Present Status, Issues and Problems

Optimized water use practices have not been implemented in most agriculture and irrigation schemes. In paddy, other food crops and even in home gardening, optimized water use can help save 40 per cent of present demand and such saving could be used to irrigate more lands. Lack of awareness among stakeholders, lack of measurement points for canal diversion on irrigation issues, use of unsuitable crops and irrigated sandy soils for agriculture and poorly maintained canals contribute towards water use inefficiency.

2.7.2. Likely Economic, Social and Environmental Impacts

- Increase in costs of operations and maintenance of water storage facilities.
- High expenditure for water to the consumer.
- Excess of water available due to saving can be shared, for both the irrigation and drinking demands.
- Optimization of water would save sufficient volumes to divert more in to drought affected areas.

2.7.3. Remedies, Measures and Implementation

- Introduce awareness programmes with Department of Agriculture, Mahaweli Authority, Irrigation Department etc., to improve water use efficiency in irrigation.
- Encourage use of drip irrigation, bulk water allocation etc.
- Encourage farmers to grow crops with "short harvest life" to save water during droughts.
- Encourage R&D for drought resistant and short month crop varieties development.
- Provide measured water for agriculture to quantify and monitor the allocation.

2.8. Drinking Water Issues

2.8.1. Present Status, Issues and Problems

Quality of all water sources are decreasing as a result of urbanization and discharge of industrial waste. This is partly due to the lack of priority for rural water supply schemes and absence of technical support from respective authorities to implement simple, low cost schemes. With the uncertain fluctuation of droughts and floods, immediate action needs to be taken to increase the retention capacity (storage) at local level, in addition to national level water supply schemes. At the

same time, high technical losses and theft of water in potable water systems is worsening the water scarcity further.

Equal priority to drinking and industrial requirement should be given in city planning and for industrial zones, harbours etc. Commercial level water demand for next 50 year should be quantified concurrently with city development plans for factories, hospitals etc. Therefore, a good dialogue should be maintained with the relevant Ministries and Departments.

Major health issues in Polonnaruwa, Anuradhapura District and NWP, especially the CKDU problem, needs to be considered in future planning. Promoting rain water for drinking would be one of the cost effective ways for dry zone. Though the main cause of CKDU is yet to be determined, mixing the paddy field drainage with drinking water sources should be stopped. The National Water Board should pay special attention to this issue.

Water quality measurement and monitoring should be introduced to all major rivers.

At the moment the drinking water coverage is 45 per cent whereas the target is 60 per cent in 2020. NWSDB is the key agency for the water and waste water sector. NWSDB provides 35 per cent of the domestic population with organized water supply facilities whereas other agencies such as local authorities and community water schemes provide the balance 10 per cent of the served population.

With the increase of population and migration to urban areas, the water demand will also increase. At the same time, water sources are being polluted due to uncontrolled man made landscape changes, industrial waste discharge, leaching from solid waste dumping yards, and waste water discharge from domestic houses, hotels and commercial institutions.

Climate change will also adversely affect water resources available to provide drinking water.

Major issues in the water sector are lack of capital funds to expand the coverage. Generally 0.5 MRs. /family is required to provide a sustainable water supply facility to their doorstep. People demand pipe born water supply facilities, as it is the cheapest water supply facility (capital cost per house water connection is Rs. 20,000 to Rs. 25,000). More than 60 per cent of NWSDB consumers' pay less than Rs. 310/month (US\$ 2 per month) and they usually consume 15 tons of water per month. Other alternative water supply facilities such as shallow wells with pumping arrangements or manual water transportation from reliable quality water sources are very expensive, ranging up to Rs. 3,000 to Rs. 6,000/ month. Some people spend Rs. 10,000/month to hire water bowsers to bring 10-15m³ per month.

The rainwater collection system is appropriate, but due to long drought periods prevailing in this country, consumers should have 10-15m³ capacity to store water for drinking, cooking, toilet flushing (10m³/month - per family, is allowed to meet the 45 day drought period). The capital investment per family for a rainwater harvesting system is around Rs 100,000 to Rs 150,000. It is difficult to convince new consumers to accept rainwater harvesting as their water supply solution, as they are aware of the fact that urban and semi urban families enjoy reliable, quality, uninterrupted water service from NWSDB at a much cheaper rate (capital cost per House connection is Rs. 20,000 and the monthly bill less than Rs. 310.00). The government immediately needs to support rainwater harvesting with a subsidiary programme, especially in rural CKDu areas.

Poor cost recovery is another handicap. The government does not allow NWSDB or local authorities to increase the water tariff to recover the (O&M) cost, and rehabilitation cost. Due to the lack of (O&M) funds, the quality of the service has deteriorated, which may affect the health benefits to

be achieved with good quality water supply facilities. There are high water losses due to leakages arising from poor quality materials (low cost) and poor pipe laying practices. Funds are lacking for effective water supply planning – including water source selection, road maps, information on migration trends, existing scheme details, adequate river gauging stations, present water source user surveys, EIA studies, hydraulic model studies, reservation of lands for critical infrastructure, soil investigations, and NBRO clearance.

Procurement of quality goods and services for water supply services is also poor. Due to lack of funds and restriction on NPA Guidelines, goods and services which are procured for water supply system are not sustainable. Overall economic benefits are not achieved due to present procurement system, especially for electro/mechanical items such as, pumps, generators, motors/ panel boards, hydraulic valves, chlorinators, treatment equipment, water meters, pipe and fittings.

2.8.2. Likely Economic, Social and Environmental Impacts

- Health issues affecting communities resulting in burdens especially to low income groups.
- Affordable unit rate of water from “mini schemes” would benefit low income families.
- With the increase of water storage in tanks, the water table will be elevated and will support vegetative growth and quality life of inhabitants.
- Use of chemically polluted water may lead to human health issues like CKDU, stones in the bladder, dental problems etc.

2.8.3. Remedies, Measures and Implementation

- Initiate a national wide programme to identify suitable areas for small storage ponds and “mini schemes”, with the support of Provincial Councils and other authorities. The Water Board, with the help of Provincial Councils to survey for suitable locations to build small ponds in each village and support to implement gravity driven “mini schemes ”with pipe borne water.
- Provide technical support from National Water Board to develop designs appropriate to specific locations.
- Allocate sufficient funds from the government
- Improve technical efficiency of potable water supply and improve billing and collection of tariffs.
- Stop mixing the paddy field drainage with drinking water extraction points.
- Promote the use of Rainwater in CKDU affected areas.
- Periodical measurement of water quality, not only for drinking water sources, but for main streams etc.
- Control use of toxic weedicides and pesticides in agriculture and educate the formers.
- Ensure supply of pipe borne water from a safe water source to CKDU or health effected areas, by building small ponds.
- Start provisional level survey to collect statistics of possible water sources and respective local demands in health affected areas.
- Prequalification of manufacturer’s with country origin (Factory location) based on product standards and end user performance.
- Develop long term partnership for goods and services providers such as local manufacturers, fabricators, agents (SIERA for telecom service and Lanka Transformer for CEB),
- Insist on prequalified manufacturer’s with factory location for key items in all procurement activities including unsold packages funded by EXIM Bank of China, India, and South Korea.

- Specific measures to address the shortage of skilled workers in the construction industry. Introduce skill worker training programs with the participation of industry, contract associations, Chamber of Commerce, Ministry of Skill Development, TVEC, NAITA and Ministry of Education. This is applicable for other sectors as well.
- Promote water supply sector planning database.
- Water resource inventory with quality, quantity, and special distribution.
- Water demand projection with demand centres for various scenarios.
- Asset Management database covering (M&E) items, water infrastructure, distribution transmission, pipe lines, and valves with age, effectiveness, and brand name.
- Road maps including footpaths and steps.
- Identify the location for water infrastructure, intake, WTP, reservoirs, and bridge crossings.
- Lack of water resource sharing mechanism among competitive users (irrigation, power, farmers, and recreation)
- High non-revenue water component.
- Physical loss due to leakage. Water leakage due to poor quality pipe and fittings and poor plumbing practices.
- Poor quality water meters - It is a procurement issue, and endurance test certificate is to be imposed. Prequalified manufacturers are required.
- Illegal tapping consumers tend to get the illegal tapping/connection as their internal leakages are high and water bills are high due to poor fittings and internal plumbing.
- Remedial measures for NRW Reduction.
- Prevention of NRW component.
- Procure quality goods.
- Improve pipe laying practice.
(House Connection and 63 mm PVC Lines)
- Introduced PPP approach for house connection program with goods and services.
- New strategies are required to identify illegal tapping using billing package, and public participation.
- Introduce regulatory measures for water fittings and equipment in order to promote the availability of quality goods.
- Rain Water Harvesting.
- Lack of appropriate strategies to promote a rain water harvesting system in Sri Lanka.
- The benefit of rain water systems to be marketed. Rain water is suitable even for drinking.
- Pilot projects are to be implemented in public sector instruction and identified house hold units.
- Make use of available funds for rain water harvesting system promotion from the on-going foreign funded projects.
- NWSDB has taken a decision to invest 5 per cent of project cost for a rural water supply system. This may be an opportunity for rain water harvesting in Sri Lanka.

2.9. Sanitation in Rural Schools, Including Running Water in Toilets

2.9.1. Present Status, Issues and Problems

Domestic water usage in rural schools needs to be enhanced immediately. Lack of running water (pipe borne) for drinking in particular has been a common cause of health issues among students.

2.9.2. Likely Economic, Social and Environmental Impacts

- Lack of water for domestic use in toilets and for drinking in schools leads to a spread of communicable disease among students.
- Health problems of young children can decrease quality of urban life and keep parents away from their income generation activities.
- Lack of proper sanitary facilities affects environmental quality of surroundings.

2.9.3. Remedies, Measures and Implementation

Implement proper water supply schemes in schools to avoid serious hygiene problems from spreading among school children. Options include rain water harvesting, dug well and overhead tanks, and solar pump units.

2.10 Sanitation improvements National Level

2.10.1. Present status, issue and problems

National level attention is needed for the improvement of sanitation in various sectors. Presently, most of the cities have no facilities to accommodate the daily sanitary requirements of the people visiting the city. In bus stands, railway stations, leisure parks, shopping complexes etc., proper sanitary facilities should be provided as a “nation policy”, with a reasonable toll as a maintenance fee.

During fund allocation in most institutions, a lower priority was given to sanitary improvements. Hence a policy decision should be taken to prioritize sanitary needs in any development programs planned nationally or locally. Any urban development should not be planned in isolation from adjacent rural water supply and sanitary schemes, and should follow a holistic regional viewpoint. Further, the improvement of sanitary facility in rural areas, and the estate sector has to be considered, after collecting the statistics from provisional authorities and other sources.

2.10.2. Likely Economic, Social and Environmental Impact

- Causes bad impacts on the environmental quality of surroundings.
- Spreads communicable diseases.
- Lack of aesthetic appearance and bad odour would reduce land values and undermine tourism.

2.10.3 Remedies, Measures and Implementation

- Common sanitary network lines, drainage and treatment plans should be planned with national priority in major cities, to handle the waste demands for the next 30/50 years and all sub sanitary facilities should be linked to new networks.
- Existing sanitary systems in urban areas should be upgraded to cater for the present and near future requirements, and the sanitary waste should properly be treated before discharge to natural streams.

- People should be advised to make sure not to discharge the sanitary waste to natural streams without treatment, and polluters should be fined.

3. Sustainability Perspective – 2020 and Beyond

2030 Vision

Basic goals would include providing access to “quality drinking water” for every citizen, despite climate change, drought or rain, and ensuring water for agriculture, including paddy, other food crops, and commercial farming. Providing basic sanitary facilities to all families in rural areas, estates and cities, would be the main goal in the potable water sector.

2020

In the road map toward 2030, the first stretch from 2018 to 2020 would cover events to promote rain water harvesting in CKDu and other possible rural areas (with subsidized financing); rehabilitate minor tanks for drinking and agriculture; and improve recharge aquifers in Jaffna area. Other steps would be to clean, rehabilitate and construct shallow wells for drinking and minor agriculture, and to improve sanitation in rural schools and the estate sector with the assistance of provincial authorities and respective government agencies. A survey should be started immediately to quantify the work and data, and a necessary budget should be allocated.

2025

In the second section of the Road Map 2020 to 2025, proper planning and policy decisions need to be made to reach the 2030 goal with sufficient budget allocation and minimal socio-economic resistance.

It is also a priority to prepare a “national water use master plan” covering both ‘surface’ and ‘ground’ water, optimization of water use, and measures to maintain the quality of water.

In 2025, a “national secretariat for water management” would be set up with the participation of all government agencies dealing with water, to form a single body for making policy decisions in the water sector. Goals would include, supplying drinking water to 65 per cent of the population, improving the pipe borne network, organizing methods like RO plant, rain water harvesting, reserving necessary funding, procurement planning, planning for improving sewerage networks in the metropolis, and planning to improve sanitation in the rural and estate sector.

In line with the major work planned, drinking water coverage will increase up to 60 per cent from the present coverage of 45 per cent, with the support of NWSDB and local authorities. Supply of Irrigation water to NCP and NWP will be enhanced, diverting 900 MCM/year to NCP and 100 MCM/year to NWP.

2030

At the end of the Road Map in the year 2030, more than 90 per cent of the water retention storage in the country will be harnessed by developing and rehabilitating, major, medium, and minor tanks, while conveyance losses will be minimized. Quality of water in rivers and water bodies will be

maintained at WHO standards for drinking water sources and will be made suitable for agriculture. Access to drinking water for all citizens will be reached - 65 per cent from pipe borne water and other organized resources like RO plants, and the balance thirty five per cent by rain water harvesting.

"Smart water allocation" assisted with "real time software modules" will be the decision support mechanisms for the "National Water Management Secretariat" for most of the water allocation in irrigation, agriculture, drinking and hydro power in 2030.

No trans-basin diversion is envisaged beyond 2030, unless the "National Water Use Master Plan" suggests in advance that excess water is available for the next 50 years. But "in basin" water use developments will be promoted, with appropriate agriculture crops, drinking needs, and industrial use to be harmonized with water availability and rainfall.

Rain water harvesting in urban and rural areas will be utilized with subsidized financing as an alternative to pipe borne supply. In particular, the CKDu affected zones will be fully supported with quality drinking water by "rain water" and small tanks and with RO plants where necessary as a last solution. Water supply for all agriculture will be measured and quantified by 2030, and will be priced and charged for commercial farming. However, water for paddy will be subsidized but with a "value" as an indicator on expenditure incurred for the national budget.

All the ground water aquifer reservoirs will be surveyed for a data base, giving the quality and quantity of water available as an alternative to surface water, if and when necessary.

Sewerage plants in most of the metropolis will be upgraded, and high priority will be given for renovating or constructing a sewerage system in new city development plans as a "Government Policy", beyond 2030, with proper access to acceptable sanitary facilities.

T – CROSS CUTTING

THEMES

T. CROSS CUTTING THEMES

T1. Climate Change, Disasters and Air Quality³⁴

1. Current Status

Climate change is a common problem as it affects the entire world, though effects will be felt in different ways and at different proportions across the globe. This change is attributed to global warming as a result of enhanced greenhouse effect with increased greenhouse gases (GHGs) such as CO₂, CH₄, N₂O, HFC, CFC, SF₆, PF₆, and NF₃ in the atmosphere. The accumulation of higher amounts of GHGs in the atmosphere is mainly due to anthropogenic activities. The bulk of current atmospheric GHGs are the result of industrialization and excessive burning of fossil fuels in the developed world. Ironically, the harmful impacts of climate change will be felt mainly on developing countries, including Sri Lanka. The Sri Lankan national contribution to the total global GHG emissions is only 0.1% (WRI, 2015)³⁵. Therefore, adaptation to climate change impacts should be given the highest priority in Sri Lanka.

Climate change will affect both human and natural ecosystems in many adverse ways. Intense rainfall, flash floods, droughts, thunderstorms, and frequent and severe cyclones are consequences of global warming, creating greater climatic variability. The air quality has changed to a level that leads to health problems, especially in urban and industrial areas.

There is a direct link between economic development and GHG emissions. Enhanced emissions are mainly from power generation, transport, industrial sectors, waste disposal and deforestation. Most of the man-made synthetic industrial gases used in air conditioning and refrigeration industries and many other industries are very powerful GHGs. When they are released into the atmosphere, it aggravates global warming.

Responding to climate change related issues has become a significant challenge, especially for developing countries like Sri Lanka. Irregularities in the hydrological cycle arising due to global warming and associated climate change are impinging on agriculture and many other sectors. Incidences of heavy rainfall, floods, landslides, droughts and lightning have increased causing problems in health, agriculture, hydropower generation and biodiversity sectors. Climate change is a long-term phenomenon and development plans must include adaptation initiatives as a high priority to face harmful impacts. Over time, some mitigation efforts will be needed, even though the country's per capita emissions are far below the world average. Short term actions are needed to overcome natural disasters which have severe social, environmental and economic impacts.

According to climate predictions, the northeastern dry zone of Sri Lanka where most food production takes place will become drier. The drought in 2016 was reported as the worst event in

³⁴ Writing Team: W.L. Sumathipala (Leader), Ariyaratne Hewage, Hasula Wickremasinghe, and Shiromani Jayawardene

³⁵ World Resources Institute (WRI). 2015. Climate Analysis Indicators Tool (WRI CAIT 2.0), Wash. DC.

40 years. Rainfall during 2018 is anticipated to be below normal. This will have a direct impact on the agricultural output and economy of the country.

Climate change, weather and related natural disasters have become a critical issue in Sri Lanka and is increasing with time. With droughts being followed by floods and landslides becoming an annual or frequent event, there is a strain on relief and financial aid being provided. Disasters can be attributed to global changes but local effects contribute to aggravate the situation. Some of these are also due to inappropriate planning processes where climate change aspects are not taken into consideration. Further, those engaged in planning and decision making need to be aware of how the climate will change in short, medium and long terms in order to decide on ways to overcome difficulties and avoid disasters. As such, prediction capabilities have to improve in order to have a reasonable and reliable forecast in the short term (up to 3 days) and medium term (3 to 10 days) to reduce the impacts of heavy rainfall, floods, landslides etc. Reliable sub seasonal to seasonal predictions (10 to 30 days) and long range forecasts (beyond 30 days) are needed to plan for agriculture, hydropower generation, and water supply. Climate projections are very important for a sustainable economy and infrastructure planning. Predictions on annual rainfall, sea-level rise, temperature fluctuation, and sea erosion will be important in this aspect. Facilities such as RADAR, Doppler RADAR, high resolution cloud pictures, and monitoring of aerosols along with other weather data collected inland and off shore will be helpful for short term predictions. Good prediction models, especially prepared for islands like Sri Lanka, will be necessary for climate forecasts. Most of all, developing a pool of scientists and researchers in areas such as meteorology, oceanography, geology and atmospheric physics is necessary to succeed in this task.

Climate change is a global problem and several international conventions and agreements are in force. Sri Lanka has become party to many of these treaties. The Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC) stresses action on mitigation and adaptation to limit temperature rise at 2°C or 1.5°C . Sri Lanka has submitted its Nationally Determined Contributions (NDCs) to reduce emission from energy, transport, industry, waste, agriculture, and forestry sectors. Adaptation actions will be taken in agriculture, health, and water supply sectors. Sri Lanka has fulfilled all requirements under the Montreal Protocol and action plans are prepared to address SDG 13 and other goals that directly and indirectly influence climate change.

2. Critical Issues, Impacts and Solutions

2.1. Air Pollution in Kandy Town

2.1.1. Present Status, Issues and Problems

There is a rapid increase in the vehicle population in the country. Human population and income levels have changed leading to more vehicles on the road. According to Illeperuma et al³⁶, in 2001 and 2002, over 20,000 vehicles entered Kandy town on a daily basis. For 3 continuous peak hours the traffic intensity reached 2,640 vehicles per hour³⁷. A study conducted in 2006 by Illeperuma et al, indicated that concentrations of NO_2 , SO_2 and O_3 exceeded the permitted Sri Lankan standards

³⁶ O.A. Illeperuma and V.D.K. Abeyrathne (2002) Monitoring air pollution in Kandy using passive and active sampling techniques. Ceylon Journal of Science

³⁷ M.A. Elangasinghe and R. Shanthini 2008, Determination of atmospheric PM10 concentration in Kandy in relation to traffic intensity, J. Nat. Sci. Foundation Sri Lanka

for air quality by 14 per cent, 41 per cent and 28 per cent respectively³⁸. Road networks have not been developed or widened to keep up with this trend and as such traffic congestion is occurring.

Kandy, the second largest town next to Colombo, is situated in a valley surrounded by ranges of hills and mountains. There has been a gradual increase in the number of vehicles entering the town. Air pollution due to emissions by stagnant vehicles on the road has given rise to a high concentration of air pollution in Kandy town. The gases emitted by vehicles include CO, CO₂, oxides of sulfur, oxides of nitrogen, hydrocarbons, soot and dust. Some of these gases contribute to global warming and acid rain and others affect human health causing cancers, respiratory ailments, and other serious health problems. Emissions from diesel vehicles by burning low quality fuel and poor vehicle conditions in the goods and human transport sector are creating social, environmental and economic problems. Air pollution is aggravated during office and school rush hours when a higher number of vehicles are on the road. With the expected annual population increase at 0.9 per cent and economic growth of 5 per cent, this problem will increase unless scientifically acceptable remedial solutions are put in place early.

2.1.2. Likely Impacts and Consequences of the Problem

Economy

- Increased pollution from stagnant traffic and growing number of vehicles entering the city.
- Increased industrial stationary sources due to Small and Medium Scale Enterprises (SMEs) have contributed to increased air pollution. When health is affected due to increased pollution, the efficiency of the workforce will be lowered and productivity will decline. The health expenditure bill of the country will increase affecting the economy of the country.
- Tourist arrivals will drop and the income due to tourism will decline.

Society

- Health problems due to increased air pollution are a major hazard where pollution tends to be stagnant in the valley.
- The rise in ambient temperature increases vector bone diseases. This has inconvenienced people coming to Kandy for religious activities and seasonal festivals.
- Additional congestion due to increased number of people from areas such as Badulla, Dambulla and Pollonnaruwa travelling to Kandy hospital and Peradeniya hospital for medical services such as treatment of cancer and cardiac issues.
- Air pollution affects the ancient monuments of the city which has a social implication as well.

Environment

- Increased pollution from stagnant traffic and growing number of vehicles entering the city.
- Changes to natural environment due to development programmes of the city. For instance, only a few forest patches remain such as *Udawatte kele*.
- Unplanned human settlements in the hills of the surrounding areas have created environmental degradation of the landscape.
- Air pollution affects the ancient monuments of the city.
- Rise in temperature affects organisms adapted to low temperature and moisture resulting in the decline of biodiversity.

³⁸ O.A. Illeperuma and V.D.K. Abeyrathne (2006), Air pollution monitoring in the city of Kandy: Possible transboundary effects. J. Nat.Sci. Foundation 2006 34(3) 137-141

- Building of houses along the slopes, not adhering to the “no development above 1500 ft altitude” rule has created soil erosion and landslides.
- Kandy city has many hotels that increase pollution due to air conditioning equipment (leaking of HFCs HCFCs) and incomplete combustion of carbon from restaurants.

2.1.3. Remedies, Measures and Implementation

- Explore methods to limit vehicles entering the city. One method will be to increase the number of passengers in vehicles entering the city which will reduce the number of vehicles.
- Organize an environment friendly transport system within the city (Bicycles, LPG or electrically powered public transport).
- Allow low emitting vehicles (eg. electric and hybrid vehicles) only within the city limits.
- Provide concessions for electric vehicle users and providers, and arrange for charging stations operated with renewable energy like solar power.
- Provide facilities for vehicles that pass through the city to re-route and avoid converging to the centre of the city. This will also ease traffic congestion.
- Small and medium scale industries should be located in suitable locations outside the city.
- All air-conditioning and refrigeration systems, especially in hotels and restaurants, must use environment friendly gases.
- Provide dedicated lanes for buses and other large vehicles, and establish priority lanes to encourage carpooling.
- Arrange for alternative working hours to reduce traffic congestion in cities.
- Improve hospital facilities in surrounding districts to prevent a large number of people travelling to Kandy for medical treatment.
- Improve urban gardens and promote Kandyan home gardens to support biodiversity conservation, provide cooler temperatures, and prevent soil erosion.
- Prevent deforestation and housing on hill slopes and provide more stable condominium housing in suitable places.

2.2. Climate Change Impacts – Worsening Drought in Dry Zone (see also Section S1. Agriculture and Food)

2.2.1. Present Status, Issues and Problems

There are natural and manmade causes that are responsible for climate change. Global atmospheric circulation changes associated with global warming has a large-scale influence. Local changes have a direct impact as well. Clearing the forest which leads to the drying of catchment areas and watersheds, reduction in water retention, reduction of greenery, and the increase of paved roads, interlocking stones, and concrete buildings are some causes. The change of the physical structure of the land by removing hills by cutting for soil and gravel as well as metals needed for large scale development projects has modified the microclimate of regions. It is predicted that the southwestern part of Sri Lanka will have an excess amount of rain and the northeast will become dry in the long term. Drainage system and constructions which do not allow for water to seep to the ground reduces ground water recharging ability.

Agriculture, including paddy production, operates in a large scale in the dry zone. Recurring droughts in the dry zone year after year has devastated agriculture for many years and the farmers are faced with many problems in the economic as well as in the social arena. Water is scarce for agriculture and for human and animal consumption in these areas. When the livelihood of the mainly agricultural community in the area and country as a whole is affected, food items will have to be imported to the country.

In October 2016, nearly 208,000 people from 51,561 families in several districts were affected by the prevailing drought. According to reports by the Disaster Management Centre, 69,678 people in the Eastern Province, 8,600 people in the Northern Province, 8,422 people in the North Western Province, over 10,000 people in the Sabaragamuwa Province, and 110,350 people from 23,000 families in the North Central Province faced a water shortage due to the drought. The subsequent drought in March 2017 affected nearly 951,597 people in several districts. Water shortages were faced by 95,334 people in the Eastern Province, 428,181 people in the Northern Province, 133,198 people in the North Western Province, 101,498 people in the Sabaragamuwa Province, 7660 people in the North Central Province, and 185,726 people in the Western Province.

2.2.2. Likely Impacts and Consequences of the Problem

Economy

- The agriculture sector presently contributes about 18 per cent of GDP and over 70 per cent of the rural population is engaged in agriculture for their livelihood. Prolonged droughts will lead to less food production, unemployment and less hydropower generation.
- Food items will have to be imported using scarce foreign exchange.
- The economy of rural population will be affected directly while a greater burden will be placed on the country's economy.

Society

- Reduced food supply (both in quantity and quality) with induced malnutrition will have a bearing on growth and health of children.
- The health of a majority of the rural population will be affected.
- Lack of water and sanitation facilities will lead to disease.
- Loss of life (especially children and the elderly) due to excess heat stress is a matter for concern.
- Wild animals moving into areas of human settlement searching for food and water will create human animal conflict such as the human elephant conflict and monkeys destroying vegetation and food in gardens etc.
- Impacts on family units due to one parent moving to different parts of the country and abroad searching for work. The climate refugee problem reported in some parts of the world may extend to Sri Lanka as well if the prolonged droughts persists denying tillable ground and water.
- Widening income gap between the poor agricultural community and the well to do rich society will lead to instability and social unrest in the country.

Environment

- Prolonged drought will cause biodiversity to change and particularly some plant and animal species to become vulnerable.
- The growth rate will decline retarding the production of forest and other species.
- Decline of cloud forests which trap moisture will have an adverse effect on endemic amphibians

and sensitive species adapted to cloud forests.

- Droughts also cause a shrinking of waterways and spray zones resulting in a loss of biodiversity.

2.2.3 Remedies, Measures and Implementation:

- Increase green cover by creating forest patches even in urban areas. Conserve watersheds by increasing forest cover as much as possible.
- Enforce stringent laws preventing deforestation of riverine areas and not permitting construction of hotels in reservation zones.
- Ensure that building of roads, houses and industries follow more environment friendly green applications/green growth.
- Increase water harvesting and retention for a longer period through mechanical means and more environment friendly ways like expanding the ancient “ellanga” system where chains of small tanks are built and connected together.
- Improve water management in agriculture by using short term crops, introducing varieties that need less water, and introducing drip irrigation systems where appropriate and possible. Solar power can be used for operation of these systems.
- Build agro wells providing that the amount of water to be extracted should be studied and managed so that the water table will not be damaged.
- Take steps to recharge ground water.
- Ensure that the measures adopted that have an impact on communities are designed with effective community participation, and that communities benefit from such measures in an equal and non-discriminatory way.

2.3. Climate Impacts - Flash Floods and Landslides in Southwestern part of the island

2.3.1. Present Status, Issues and Problems

While flash floods and landslides can be attributed to global climate change, local activities have given rise to many of the problems. Ad hoc development programmes, and the lack of long term planning with sustainability are major problems. According less importance to environmental aspects such as the EIA process in project implementation has also created disasters in the long term. Lack of serious consideration and non-implementation of existing rules and regulations has led to unauthorized buildings blocking drainage systems, filling of lands impacting water retention of marshy lands. Unsustainable sand mining, extraction of soil, gravel and metals on a large scale have increased the areas prone to flooding and landslides. This also has changed the microclimate in some areas. Clearing of hilly areas for plantation (eg. tea cultivation) leading to a reduction in water catchment areas are some of the causes for major disasters.

There is no storm water drainage system for most cities and towns. This has prevented the smooth flow of water giving rise to water stagnation and flooding. One of the major reasons for the Bulathsinhala area landslide had been that in some areas long standing rubber trees have been uprooted as the profitability of rubber has decreased with the result that the areas have been replaced with tea causing heavy soil erosion and instability of land.

According to global and local climate models, the southwestern part of the country will receive a high amount of rainfall due to climate change. High intensity rainfall, flash floods and landslides are becoming a regular feature. The southwestern part of the country including western slopes of

the central hills normally receives average rainfall during the southwest monsoon and also during the two inter-monsoons. There had been, however, abnormal high intensity rainfall events in the area which led to disasters. This has become an annual event which is most likely related to global warming and climate change.

The floods in May 2016 severely affected 24 districts followed by a landslide which resulted in the loss of 93 lives and damaged 58,000 homes³⁹. This frequency of disasters was enhanced by the drought in March followed by the heavy rains which were received on the 25th of May 2017 to the southwestern watersheds in the country. According to data from the Disaster Management Centre, heavy rains were received within 12 hours in the south-western regions including Namunuthanna (619mm), Bulathsinhala (419mm), Morawaka (406mm) and Walasmulla (437mm) leading to riverine floods of the Kalu, Nilwala and Gin rivers. Following the floods, around 717,622 People were affected in 15 Districts. 212 deaths were reported and over 2,313 houses were fully destroyed.

2.3.2. Likely Impacts and Consequences of the Problem

Economy

- Major floods especially in the western part of the country have become a regular occurrence. Severe flooding in 2016 caused significant damage in the western region of the country. The heavy and intense rainfall in May 2017 devastated a large part of the southwestern part of Sri Lanka. This event led to over 300 deaths and economic damage in the range of billions of rupees. Even in the northeastern parts of the country, sudden flash floods resulted in the loss of agricultural produce creating a huge loss to the economy.

Society

- Loss of loved ones and property has wreaked havoc, and anxiety has crept into society. The affected people face an uncertain future and stability of the society is weak. Health problems and vector borne diseases are escalating. Numbers of dengue cases and deaths have increased. Most of the people who were evacuated from their villages are without a proper place to live or a source of income.

Environment

- Certain biological and physical systems of the environment have been affected beyond repair.
- Soil erosion has taken place in many areas and the fertile surface soil has been washed away. It will take a substantial amount of time for these areas to turn back to cultivable soil. With the new landscape and change of weather and climate, a different environment will be created.

³⁹ MDM 2016, Sri Lanka Post Disaster Needs Assessment-May 2016 Floods & Landslides. Ministry of Disaster Management, Ministry of National Policies and Economic Affairs in collaboration with the European Union, the World Bank and the United Nations. <http://www.dmc.gov.lk>

2.3.3. Remedies, Measures and Implementation

- Respect and adhere to international conventions, protocols etc.
- Accord high emphasis on long term sustainable development planning. The planning process must take all relevant aspects into consideration and ad hoc development programmes must be curtailed. Communities that would be impacted by large scale development or infrastructure plans should be consulted. They should be encouraged to provide input for such plans, with mitigation measures and long-term benefits flowing to communities in a transparent and non-discriminatory manner.
- All natural resource extraction must be done in a sustainable manner giving due respect to environmental aspects. Unauthorized buildings, and illegal construction must be halted. Construction of pavements with interlocking stones must be discouraged while promoting grassy areas.
- Improvement of sub seasonal weather prediction is essential to take important decisions for disaster preparedness. Enhancement of the early warning system including very short range forecasting is vital to provide warnings of the likelihood of severe high impact weather (droughts, flooding, heavy rainfall events) to help protect life and property by humanitarian planning and response to disasters.
- Enhance social capacity to effectively cope with disasters, and manage disaster risks.
- Establish community disaster prevention committees and develop community disaster prevention plans to enhance the disaster management capacity of communities.

3. Sustainability Perspective – 2020 and Beyond

Human population and the number of vehicles will increase with economic development. However, if vehicles entering Kandy, Colombo and other major town and cities are controlled, and only zero or near zero emitting vehicles are allowed to enter, air pollution will reach near zero level in the city by 2020. Pollution related health problems will be minimized.

The government health bill will be lowered, with a healthier workforce and increased efficiency and output. With forest patches and work ways, the level of tourist attraction both foreign and local will be high, with increased economic growth.

Cities could become more environmentally friendly. Forest patches and pedestrian walkways, will attract both foreign and local tourists, thereby stimulating economic growth. The improvement of the Kandyan home garden concept will help to prevent soil erosion. The prevention of housing development on hilly slopes will help to reduce landslide type disasters.

Increased forest cover will enhance water retention in the soil and improve infiltration. Evaporation will be replaced with evapotranspiration. This will bring a natural air conditioning effect that will reduce dryness. With the incorporation of the ancient wisdom of irrigation and water management such as clusters of cascading tanks of various sizes into the planning processes, the effects of drought conditions can be largely mitigated. By cultivating short term crop varieties and using drip irrigation, farmers could manage their finances as well as their nutrient intake. When such actions are implemented in a systematic way, poverty will be reduced to a manageable level by 2020.

Proper scientific planning and its adherence, and the increase of tree cover will reduce disasters such as flooding and landslides. Implementing rules and regulations that exist and their

enforcement will reduce unauthorized developments, and unauthorized structures in river banks, reservations, near and around waterways and canals will prevent flooding and landslides considerably. Controlling and managing natural resource extraction such as sand, soil, gravel and metal will prevent a host of environmental problems including most health hazards. While these actions will help to reduce disaster impacts by 2020, education and awareness needs to be strengthened from a young age order to provide better living conditions for future generations.

T. CROSS CUTTING THEMES

T2. Ethics, Values and Citizenship⁴⁰

1. Current Status

Regardless of the sophisticated plans for sustainable development that we make, ultimately, the success or otherwise of such plans largely depend on the human beings for whom these plans are made and by whom plans are to be implemented. Factors such as corruption, unrealistic and shallow social values, irresponsible behaviour and the like are always referred to as possible causes, among others, of failure to achieve goals. Usually, such measures as structural changes in the society, tightening of the legal system, imposition of punishment, and providing incentives are proposed as ways of addressing the negative causes. But in spite of all these measures, the desired goals are not achieved. It is clear that some fundamental changes in the ideas, perceptions, attitudes and finally behavior of all stakeholders has to happen.

In order to remedy this state of affairs and realize the desired goal, measures will be proposed to address two critical issues: (1) values and ethics; and (2) Sri Lankan citizenship and identity.

2. Critical Issues, Impacts and Solutions

2.1. Lack of Ethical and Moral Values Resulting in Undesirable and Unsustainable Behaviour

2.1.1. Present Status, Issues and Problems

Standards of professional and business conduct, and public morality that affect the behaviour of professional groups such as lawyers, doctors, and engineers, as well as business leaders, public officials and politicians, are critically important to promote ethical outcomes in the society. Voluntary adoption of ethical codes and adherence to them is very important. Ethical standards are also low or non-existent even in the informal sector where many people engage in business transactions and other activities that affect the quality of life of people.

2.1.2. Likely Impacts and Consequences of the Problem

Contrary to the desirable sustainable development triangle shown in the Introduction (Figure B.1.1 in Box B.1), the poor values that dominate modern Sri Lanka have resulted in an unsustainable triangle summarized in Figure B.1.3 in Box B.1.

⁴⁰ **Writing Team:** Asanga Tillekeratane (Leader), Savithri Goonesekere, Siri Hettige, Mano Titawella, and Mohan Munasinghe

Society

- Current social values are increasingly based on greed, selfishness, corruption, inequity, violence, injustice, and elitism. When members of any particular society start losing their ethical and moral compass, it causes the breakdown of family life, deterioration of social relations, failure of law and order, and an increase in crimes and other undesirable behaviours.

Economy

- The absence of proper ethical and moral values reduces opportunities for economic advancement through honest means, and leads to low morale and productivity. People look for easy material gain through unethical and improper means. It is due to this same reason that the youth do not pursue education or vocational skills but rather opt for jobs requiring minimum skills.
- Personal attitudes such as laziness, the lack of will to achieve results, and low expectations will undermine productivity and economic progress.

Environment

- The poor economy and poor social relations affect the environment by worsening the waste disposal problems, resulting in environmental pollution, and the spread of diseases. Whether or not one keeps and maintains one's immediate environment clean or whether or not one cares for the environment and nature are ultimately matters of attitudes and culture.

Root Causes:

It is generally held that the lack of education and the consequent lack of knowledge are the causes relevant to the human factor. While there is no denial of the crucial importance of education as a means and knowledge as the end, the course of human behaviour has amply demonstrated that human beings err whether or not they possess these factors. This suggests that something else is lacking.

What seems to be lacking is a moral sense, the presence of which is indicated by the desire and the will to do what is right, appropriate, beneficial, and to display empathy, fellow feeling, sensitivity, considerateness, broad-mindedness, kindness, and compassion toward all beings, nature and the environment.

2.1.3. Remedies, Measures and Implementation

Notwithstanding the negative aspects of organized religion, religious teachings seem to be one of the effective means through which to address the issue at hand. In a country where the vast majority identify with a religion, it is worthwhile to explore the potential of these highly popular mass movements to instil a moral sense in their adherents.

In Sri Lanka, we have five major world religions, Buddhism, Hinduism, Catholicism, Christianity/ Protestantism and Islam. Of these religions, Buddhism has the longest history in the country starting from the 3rd Century BC and has been the major religious and cultural force that has shaped the culture of the island. Currently, 70.19 per cent of the population follow Buddhism

whereas 12.6 per cent follow Hinduism; 6.1 per cent Roman Catholicism; 1.3 per cent Protestantism; and 9.7 per cent Islam⁴¹.

In the present context what is more important is to instil a sense of common morality, ethics and citizenship values in people by using religion as a vehicle. The fact that people are religious in the popular sense does not necessarily mean that they are moral or ethical. It is necessary to identify a set of moral and ethical values shared and sharable by all religions, and mobilize religious recourses in order to establish these values in people.

The future of religion in Sri Lanka is not the competition of religions among themselves or the triumph of one religion over others. Rather, it is when all religions co-exist harmoniously tending to their own followers' inner needs, that harmony and cooperation among religions and individual citizens of all faiths are promoted. This is not to reduce all religions into one or to create a mixture of religions. While religions remain unique they will direct their followers to realize a set of common goals leading to a peaceful, wise and compassionate society.

Therefore, the following measures can be taken:

- Teaching/reinterpreting the religious teachings and concepts to suit the current social problems and issues: It is necessary that religious teachings which are age-old but immensely insightful be interpreted to suit current personal and social issues. This has to be done by experts in each religion. In particular, the widely popular concepts such as sin ['pin' and 'pav' or merits and demerits [Buddhist] or 'haram' [Islam]] need to be redefined so that many anti-social behaviours [such as lack of regard for others, forms of selfish behaviour, littering and destroying public places and property etc.] which are not usually found in the traditional religious lists may be shown to be sins, and many socially beneficial behaviours [such as giving a helping hand to unknown people, being considerate towards others, protecting public property etc.] which are not found in the traditional lists of good deeds ['pin'] to be so.
- Meditation: Notwithstanding the fact that the practice of meditation remains largely associated with deeper inner transformation, today there is a growing sense of the usefulness of mindfulness (sati) meditation on all aspects of daily living. Being mindful is not merely being attentive; it also includes all forms of compassionate behaviour towards all beings and the environment. Another form of meditation which many find to be extremely useful is 'meditation of loving kindness' or metta. The practice of metta is an effective antidote for a society beset with strife and violence.
- Religious programmes conducted by religious organizations, monasteries, kovils, churches, and mosques may be made to serve as means to inculcate good attitudes and behaviour in participants on 'mundane' matters such as how not to soil one's surroundings, how to dispose ones garbage properly, how to not produce too much garbage by adopting more environmentally friendly ways of living with 'mindful consumption', how to show compassion to others, how to be humane before being religious and the like.
- It is necessary to identify a set of 'do's and 'don'ts in public behaviour and attribute to those things a law-like character and take measures by the government to make sure that people adhere to such norms and practices.

The implementation of activities of this nature lies largely on the leaders of religions. Although the government may be of external help, the task is on the people themselves. The government, however, may take initiatives to initiate discussion with the religious leaders on reorientation of

⁴¹ Census of Population and Housing (2012). Department of Census and Statistics, Sri Lanka

religious teachings, insights and practices to be relevant to the day-to-day harsh realities of life. Interfaith mechanisms that promote common values and harmony, need to be encouraged.

2.2. Weak Sense of Sri Lankan Citizenship and Identity

2.2.1. Present Status, Issues and Problems

"The State shall reinforce all patriotic forces by law, policy and spirit to explore the notion of active citizenship in Sri Lanka and what it means to be Sri Lankan, strengthen the notion of Sri Lankan identity identifying the values enriched by the nation's diverse cultural pluralism and heritage and thereby recognizing the existence of more than one religion, language and ethnicity in this country as the natural prerequisite for national coexistence."

Citizenship is a concept that only makes sense if it is shared - individuals need to recognize each other as members who belong in the same category. The bonds of citizenship are weakened when some individuals perceive themselves to be superior or inferior to others. Citizenship requires mutual recognition among all persons, having equal worth and rights.

Given the diversity of Sri Lanka, or any modern nation, mutual recognition is impossible if it is built on religious or ethnic identity. Countries that build themselves on ethnic or religious identity, inevitably exclude their own minorities, and often trigger conflicts with neighbouring countries.

Citizenship in Sri Lanka has to be re-invented as "Sri Lankan", rather than defined by one of its ethnic or religious components. "Sri Lankan" must mean, effectively, that in spite of our diversity we all enjoy equal rights.

Therefore, there are two requirements to strengthen citizenship in Sri Lanka:

- Celebration of diversity
- Recognition of equal rights

Celebration of diversity means that the State must make every possible effort to incentivize inter-religious and inter-ethnic appreciation. Education in this respect is fundamental; but it cannot be merely the transmission of ideas: it is required the active participation and practice is incentivized.

Religious teaching, which most young people attend, should be incentivized to reflect positive traits of other communities and faiths. It should help students recognize the shared values that exist across religious identities, and it should teach basic elements of mutual respect and tolerance. In particular, religious teachings should sternly criticize religious discrimination, persecution, and intolerance. The current practice of the state supporting teaching of religion in separate religious schools for different religious groups does not seem to help inter-faith understanding or even tolerance. The segregated school system is also a major issue in this regard.

Social and historical education should strive towards promoting the understanding of the contributions of all communities towards the greatness of the country. Sri Lankans should be able to understand and enjoy the traditions of other communities: learning each other's language; getting to know each other's festivities; exchanging cultural, musical, literary, culinary knowledge, etc.

Failure to achieve bilingualism and trilingualism in most parts of the country remains a major obstacle to national reconciliation, despite official recognition of this policy.

More importantly, historical education should strive to instil a critical, independent and responsible mentality among young people. It is difficult to ensure in just a few years, that Sri Lankans will agree on exactly what happened in our complex past; but what is possible is to identify the critical moments and actions in which conflicts emerged. This will help us learn the lessons from our past experience, without focusing on blame.

Recognition of equal rights means that the State must affirm through all means, including its basic norms like the Constitution, that human rights are a common set of values across all cultures and identities.

Civics teaching should have as a cornerstone the understanding of the Bill of Rights in the Constitution, and the Universal Declaration of Human Rights. This should not be merely theoretical but participatory, students must be able to identify in their daily reality what situations go against the realization of human rights, and should be able to volunteer and engage to obtain peaceful, cooperative, and smart change.

Scientific and technological teachings must also result in the appreciation of diversity and rights. Science teaches critical thinking, healthy skepticism to dogma, rational debate and intellectual humility. Coupled with the extraordinary development of communications technologies, this can be a force for good.

In the era that followed independence, Sri Lanka benefited from enlightened policies on health and especially education that enabled all citizens to access these services despite diverse economic and social backgrounds. This equity of access was combined with values on personal and professional responsibility to act with integrity and a sense of service and contribution to the wellbeing of the country. Those who joined the public service, the judiciary and other institutions, or the private sector were generally expected to conform to these values and those who did not do so had to face consequences including social disapproval. Corruption and graft took place but was hidden because it was not something to be proud of or publicised.

2.2.2. Likely Impacts and Consequences of the Problem

Over the years, politics and the arrogance that is a result of political power, and abuse of such power with impunity, along with a growing environment of consumerism despite the economic deprivation experienced by many sectors of the population, have destroyed institutions and also the values of those who hold office. This has also had a negative impact on the public and private sectors, and has contributed to a sense of non-involvement by a majority of citizens in critical matters that affect the development of the country. Protests (sometimes violent) do occur, but civil society is often fragmented in its responses. The armed conflict also caused deep polarisation in civil society in regard to responses, including conflict resolution. Partnership between the government and civil society in development initiatives was often replaced by hostility and tension.

Root Causes:

The current project on national reconciliation after the armed conflict has made some progress, and the recently approved National Reconciliation Policy is an important first step. These efforts

need to be accelerated to promote commitment to a common new vision of progress and development for a united Sri Lanka. Building a sense of citizenship, and a shared vision of national wellbeing, progress and development is therefore a continuing challenge.

2.2.3 Remedies, Measures and Implementation

The future lies, perhaps, in using new communication technology to challenge all the identified negative features of our society and institutions, especially through the activism of youth groups, and the leadership of enlightened religious leaders. It seems important to promote and spread the word on an alternative political, social, and economic discourse. It may be possible to develop that discourse by prioritising core values on human rights linked to SDG's as a new model of development. A dynamic communication strategy is needed to challenge the rot that has set in, and clarify that there is no future for the country, unless we develop a totally alternative discourse and value base from that which has gained traction in the last decades.

This also means publicizing, critiquing and reacting publicly to acts of abuse of power, lawlessness, and corruption from any source. The right to information and media freedom must be strengthened if such a public communication strategy is to impact the changing of values and the creating of a new model of a citizen, who recognises both the rights and responsibilities of holders of public office as duty bearers, and the members of the public as engaged citizens of a united Sri Lanka and the beneficiaries of good governance.

The following specific measures are proposed to remedy this situation:

- Reach out to the youths of the hill country. For example; "Promoting Active Citizenship" (PAC) project, the pilot program of SFCG Sri Lanka aims at a transformed Hill Country culture in which young people are equipped and inspired to face their community's challenges through dialogue and building relationships with decision makers, actively engaging in the community, and advocating for their rights and the rights of their people⁴².
- Use education as a tool to bolster citizenship in Sri Lanka. Programmes such as Global citizenship education (GCE) can inspire action, and build partnerships, dialogue and cooperation through formal and informal education.
- Since Sri Lanka was affected by conflict, inclusion of related fields such as human rights education, peace education, and education for sustainable development is vital. It promotes solidarity, social cohesion, and shared responsibility. It also provides an opportunity to learn multiple levels of identity based on religion, culture, traditions, and other differences, emphasizing respect and highlighting commonalities⁴³.
- Research and dialogue could facilitate the reconciliation of local and global identities and interests. For example, the open dialogue platforms will provide an arena for active social engagement⁴⁴.
- Technology is another significant tool. Many countries have utilised virtual platforms to broaden their learning environments, connect classrooms and communities and reach scattered

⁴² <https://www.sfcg.org/wp-content/uploads/2015/08/Promoting-Youth-as-Active-Citizens-in-the-Hill-Country-of-Sri-Lanka.pdf>

⁴³ <http://unesdoc.unesco.org/images/0022/002277/227729e.pdf>

⁴⁴ <http://unesdoc.unesco.org/images/0022/002277/227729e.pdf>

demographics and isolated populations. Internet adoption in Sri Lanka was at 21.9 per cent in 2013, while South Korea, Singapore and Malaysia reported 84.8 per cent, 73 per cent and 67 per cent respectively (World Bank Report, 2013). Developing countries face problems with internet usage and adoption such as attitude problems, lack of infrastructure, affordability, lack of English language skills, and lack of computer skills. Public bodies such as the government and NGOs have introduced IT policies, programmes and innovations to empower rural communities with new technology⁴⁵.

For example, the Young Masters Programme on Sustainable Development (YMP) has also established a web-based education and learning platform that is used by participants from 120 countries and around 30,000 students⁴⁶.

- Sports can create a long lasting and deep impact on tolerance, justice, diversity, and human rights. People from diverse communities unite through competition, despite politics, socio-economic status, culture, and ethnicity. Promoting an active and healthy citizenry has obvious financial/economic benefits as well, which are often underestimated⁴⁷.
- Promoting community based approaches creates learning environments that promote links to communities and link learners to real-life experiences (such as exchange programmes, community-based activities, and foreign language studies). The aforementioned platforms help to improve citizenship through active and informed participation in the community, and also at local, provincial and national levels. The notion of "all politics is local" highlights the importance of community level programmes⁴⁸. For example, a Future Leaders Programme is provided by Unilever, where Sri Lankan undergraduates get a chance to engage in a world class exchange programme. Such programmes could be augmented through Government investment and support⁴⁹.
- Initiate teacher training programmes to increase the knowledge and understanding pertaining to the issues and trends around citizenship among teachers, and improve interpersonal/communication skills⁵⁰. For example, the National College of Education Sri Lanka provides three years of on the job training, which includes one year of internship that is spent training at government schools. During the internship period, a monthly allowance will be paid and accommodation facilities provided⁵¹.
- Youth led initiatives represent different cultures, academic backgrounds, historical and political contexts, and communities, in addition to providing widely diverse voices and perspectives. For example, the Unilever SPARKS student ambassador programme is a great avenue to represent the community and to foster leadership roles in active citizenship⁵².
- Women's engagement with new media is not adequate in Sri Lanka, therefore, arranging workshops for women bloggers would be immensely useful for them to familiarise themselves with

⁴⁵ <http://digital.lib.ou.ac.lk/docs/bitstream/701300122/1236/1/paper1.pdf>

⁴⁶ <http://unesdoc.unesco.org/images/0022/002277/227729e.pdf>

⁴⁷ <http://unesdoc.unesco.org/images/0022/002277/227729e.pdf>

⁴⁸ <http://unesdoc.unesco.org/images/0022/002277/227729e.pdf>

⁴⁹ <https://www.unilever.com.lk/careers/graduates/uflp/>

⁵⁰ <http://unesdoc.unesco.org/images/0022/002277/227729e.pdf>

⁵¹ <http://www.srilankacourse.com/national-college-of-education-sri-lanka/>

⁵² <https://sparkslk.wordpress.com/>

technical aspects and privacy aspects as to how to effectively promote their blog using social media, using multimedia, and becoming more effective and empowered citizens⁵³.

- An active, cohesive, empowered, and tolerant citizenry will share a common historical narrative, or at the very least, respect for different perspectives on painful events of the past. The transitional justice mechanisms planned by the current Government will contribute to defining this shared history and national healing, allowing all communities to feel understood and be proudly Sri Lankan. The truth seeking mechanisms of the Office on Missing Persons (OMP) and the Truth and Reconciliation Commission, accompanied by reparations, will play a vital role in this regard.

3. Sustainability Perspective – 2020 and Beyond

A sense of common morality, ethics, and citizenship values need to be instilled in the people by using religion as a vehicle. A set of moral and ethical values shared and sharable by all religions, and mobilization of religious recourses in order to ingrain these values in the people will be established.

An active, cohesive, empowered and tolerant citizenry will share a common historical narrative, or at the very least, respect for different perspectives. New communication technology will be used to challenge all identified negative features of our society and institutions especially through the activism of youth groups, and the leadership of enlightened religious leaders. Publicizing, critiquing and not accepting without public reaction acts of abuse of power, lawlessness and corruption from any source will be promoted. The right to information and media freedom will be strengthened. Rethinking national policies in areas as diverse as arts-culture and sports could contribute to the shared sense of Sri Lankan identity.

Education will bolster citizenship in Sri Lanka. Programmes such as Global citizenship education (GCE) can inspire action, build partnerships, dialogue and cooperation through formal and informal education. Community based approaches will create learning environments that promotes links to communities and link learners to real-life experiences.

⁵³ http://www.gender-is-citizenship.net/sites/default/files/citizen/uploads/SLDraft_cover.pdf

T. CROSS CUTTING THEMES

T3. Gender⁵⁴

1. Introduction

Gender is a crucial category of analysis in the planning and assessment of sustainable development programmes, policies and goals. It accounts for the socially constructed meanings assigned to biological sex differences that have often resulted in inequality and inequity for women in relation to men. It therefore enables an examination of the different impacts on men and women of socially constructed gender attitudes, and gendered institutional practices at the workplace, at home, in the distribution of wealth, income, access to resources, rights, and entitlements. Gender equality has been declared a UN Sustainable Development Goal (Goal No. 5) in its own right. At the same time, given the prevalence of gender inequality in many spheres, gender is considered an important cross cutting issue that should be mainstreamed into all sustainable developmental goals.

In Sri Lanka, amongst several issues of concern for women, two critical issues that are set to continue in 2020 stand out. They are: a) the feminization of poverty signalling the prevalence of more women who are poorer than men; and b) the prevalence of violence against women. Both negatively impact a women's individual wellbeing, and in turn the wellbeing of the society, the family unit, and the workplace. As such, both require redress for achieving gender equality.

2. Critical Issues, Impacts and Solutions

2.1. The Feminization of Poverty

2.1.1. Present Status, Issues and Problem Areas

Several factors currently conspire to keep women's earning capacity lower than men. To begin with, at 35.9 per cent as against 74.7 per cent of men, women's participation in the labour force is significantly lower than that of men (SL Labour Force Survey Annual Report 2015). In fact, Sri Lanka reports the 28th largest gender gap in labour force participation worldwide (World Bank cited in Semasinghe, 2017, 185)⁵⁵. This is also the case for female youth labour participation rates in the country. Unemployment of female youth with education achievements of G.C.E. 'A' level and above stands at 16.9 per cent as opposed to the 12.6 per cent of male youth (SL Labour Force Survey Annual Report 2015). Commensurately, although the proportion of women working in the informal economy is less than men (53.7 per cent women as against 63.2 per cent men) women work in jobs considered more vulnerable (i.e. living under USD 1.25 per day) at a higher rate than male workers in the same category⁵⁶.

⁵⁴ Writing Team: Neloufer de Mel (Leader), Lakshman Dissanayake, Vagisha Gunasekera, Harini Amarasuriya, Pradeep Peiris and Kumuduni Samuel

⁵⁵ Semasinghe, W.M. (2017) 'Women's Labour Force Participation in Sri Lanka.' *International Journal of Social Science and Humanity* 7:3, 184-87.

⁵⁶ Gunasekara, V. (2019) 'Unpacking the Middle: a class-based analysis of the labour market in Sri Lanka' *Southern Voice on Post-MDG International Development Goals* (Special volume) London, Routledge.

A gender based wage gap resulting in the inequality of women's income in comparison to men also contributes to women's financial insecurity if not poverty. In 2012/13 while the average total income of a government employee was Rs. 34,000 per month, the average monthly income of a female government employee was Rs. 30,000 per month as against Rs. 37,000 per month for men. In the private sector women's average monthly income was Rs. 13,600 per month as against Rs. 21,400 per month for men. Based on data from the Household Income and Expenditure Survey, a pattern in which there was a widening gender pay gap in the government, semi-government and private sectors was evident between 2009/10 and 2012/13⁵⁷. This trend is expected to continue.

This situation is exacerbated by the increase in the elderly population of 60+ together with longer life expectancy for women. It is projected that by 2022 the 60+ population will increase by 17 per cent while female life expectancy is expected to reach 82.5 years as against 72.3 years for men by 2026⁵⁸. The financial insecurity, cost of health and long term care and inadequate retirement benefits force the elderly into jobs in the informal sector, working long hours for pay that is less than younger workers (Vodopivec & Arunatilake in Senanayake et al.)⁵⁹. At another level, the increase in the fertility rate of women who are 35+ years (an upsurge that is projected until 2022) will result in older women caring for children, as well as a change in the pattern of intergenerational wealth transfer where, instead of a wealth flow from employed children to parents, children continue to be financially dependent on parents.

In the context of a lack of state policies enabling women to enlist in the workforce, including policies on paternity leave, investment to formalize, diversify and develop the household care economy, and effective programs to change gender inequitable attitudes amongst families and employers, the low FLPR and concomitant lower income of women will continue.

2.1.2. Likely Impacts and Consequences of Problems

Economic:

- There are poor dividends from investment in education of girls due to low female labour participation rate (FLPR) and the resultant low income. The situation of younger women being unable to access good employment opportunities due to care-work at home also points to an opportunity cost and a loss of dividend from the state's investment in women's education.
- 61.4% women as against 5.9% men are engaged in household work and self-report as "economically inactive" (SL Labour Force Survey Annual Report 2015).
- Change in intergenerational wealth flow resulting from children's dependence on parental financial support due to a) low FLPR and b) increased fertility rate of women of 35 + is set to continue until 2022.
- The increased elderly population (60 +) and women's longer life expectancy results in women's employment in the informal economy with adverse impact on productivity, income and well-being.

⁵⁷ Sanguhan and Gunasekera, V. (2016) Working paper, Center for Policy Analysis

⁵⁸ Dissanayake L. & M.K. Weeratunga (2016) 'Features, Challenges and Opportunities of Population Ageing: Sri Lankan Perspective', Policy Issue No. 1, UNDP, Sri Lanka.

⁵⁹ Senanayake, S.M., W. Wimalaratana & S.P. Premaratne (2012) 'The Role of Informal Sector in the Sri Lankan Economy.' Sri Lanka Economic Journal 13:2, 1-16.

Social:

- The relative poverty of women in informal economy affects income, well-being and decision making capacity. (86% of men [from a sample of 1560 men in 4 districts of SL), reported that household leadership should be decided on income generation⁶⁰.
- Poverty of older women in informal economy affects the well-being, and decision making power in the household; and places them at greater risk of crime and domestic violence⁶¹.
- An increase in younger women living in proximity to sites of parental and child care, results in limited access to employment opportunities with better income – with negative effects on their well-being and decision making capacity.
- The marginalization of rural women engaged in care work and rural female heads of households who cannot maximize on the urban development dividend results in reduced income and wellbeing.
- A Loss of income for urban poor women engaged in care work due to displacement resulting from urban development
- Correlation in poverty and migration overseas in low-skilled jobs affecting women's well-being and family cohesion (also due to lack of responsible joint parenting by men).
- Gender wage gaps and attitudinal inequalities affect women's access to rights, entitlements and social justice.
- Increase in the cost of food affected by climate change poses an added risk. As it is, the prevalence of anaemia in children aged 6 – 59 months is at 15.1 per cent and in women of reproductive age at 26 per cent. Overall 31.8 per cent of women are found to be anaemic. Nutritional levels in districts such as Mullaitivu, Trincomalee and Moneragala are particularly compromised⁶².

Environmental:

- Climate change and the rising cost of food adversely affect the food purchasing power of women (including female heads of households) who are already burdened with unequal wages leading to food Insecurity.
- Correlation between ageing and exhausted population and exhausted and degraded land results in low yields.
- There is an increase in care work for women following respiratory /CDU disorders due to the degraded environment.
- Elderly women, particularly those in rural and semi-urban areas who are already compromised by financial insecurity are particularly at risk to the vagaries of climate change.

⁶⁰ De Mel, N., Peiris, P., and Gomez, S. (2013) Broadening Gender: Why Masculinities Matter – Attitudes, practices and gender based violence in four districts in Sri Lanka, CARE International, Sri Lanka

⁶¹ Diprose, R. (2007) 'Physical Safety and Security: A Proposal for Internationally Comparable Indicators of Violence', *Oxford Development Studies* 35:4, 431-457.

⁶² South Asia Policy and Research Institute (2017) *National Strategic Review of Food Security and Nutrition: Towards Zero Hunger*, Colombo, SAPRI.

2.1.3. Remedies, Measures and Implementation

- Recognize and value unpaid care and domestic work by adopting policies to formalize, diversify and develop household care across state, private and public-private partnerships. At the same time, programmes on shared responsibility between men and women within the household should be mainstreamed into the educational curriculum.
- Enforce better regulation of the informal economy in relation to rates of pay, contracts and work hours to avoid profit maximization and exploitation of female and ageing female labour.
- Policies need to be developed to train women in technical, innovation and leadership skills to bring them into the formal economy at better rates of pay. The development of such skills would also minimize current gender wage gaps.
- Improve pension and social protection schemes for the elderly to diminish their reliance on informal protection mechanisms such as loans/ financial support from children and family members, and/or participation in an ageing, exhausted workforce in low paid jobs.
- Provide for better regulation of informal economy in relation to rates of pay, contracts and work hours to avoid profit maximization and exploitation of female / ageing female labour.
- Conduct programmes towards attitudinal changes to women and their gendered roles in society.

2.2. Violence Against Women

2.2.1. Present Status, Issues and Problem Areas

Violence against women is a critical issue impacting negatively on women's wellbeing and development. In a study conducted in the districts of Colombo, Hambantota, Batticaloa, and Nuwara Eliya, out of a base of 110 women who had experienced domestic violence, 48 per cent reported being injured by husbands and male partners. Of this cohort, 20 per cent reported being injured 3-5 times, while 9 per cent stated they were injured more than 5 times. Twenty six per cent of the respondents reported they had to stay in bed because of the injuries resulting from the physical violence, 16 per cent had to take days off work because of their injuries while 32 per cent had to seek medical treatment⁶³. These figures indicate the levels of physical and psychological harm and consequent unproductive economic activity due to the fallout of domestic violence. Moreover, a correlative was also seen between domestic violence/IPV and miscarriage with 22.9 per cent of women reporting a miscarriage following IPV as against 13.6 per cent of women who miscarried and did not experience IPV.

A correlation also exists between low economic productivity and negative wellbeing of women following sexual harassment. In a context where women are reluctant to file official complaints due to social stigma and fear of intimidation, in 2011 the police received approximately 2600 complaints relating to sexual harassment according to the Report of the Leader of the Opposition's

⁶³ De Mel, N., Peiris, P., and Gomez, S. (2013) Broadening Gender: Why Masculinities Matter – Attitudes, practices and gender based violence in four districts in Sri Lanka, CARE International, Sri Lanka

Commission on the Prevention of Violence against Women and the Girl Child in 2014⁶⁴. In a more recent study conducted by UNFPA with 2500 women respondents, 90 per cent of women reported sexual harassment in public transport with 37 per cent reporting that this experience negatively impacted their work (UNFPA, 2015). Given that 76 per cent of these women reported anger, 68 per cent shame, 48 per cent fear and 45 per cent being speechless/helpless following an incident of sexual harassment (UNFPA study 2015), the sense of violation felt by women is significant. Sexual harassment at the workplace can cause absenteeism leading to poor work performance and subsequent dismissal. It can also result in occupational sex segregation where women may opt to work only in sexual harassment free environments that may, in turn, limit their employment opportunities and income⁶⁵. A key concern, for instance, is the current labour shortage facing the apparel sector with women reporting that violence against women and sexual harassment are key reasons preventing them from joining the labour force particularly around Free Trade Zones⁶⁶. By 2020 such a labour shortage would mount a significant challenge to the ability of the country to reap the benefits of the GSP+ scheme it recently regained.

At the same time men's sense of entitlement, lack of accountability and low rates of judicial punishment for violence against women⁶⁷ including sexual violence conspire to maintain a status quo where in 2020, women's risk and vulnerability to sexual gender based violence will continue to have a negative impact on women's wellbeing, development, and the sustainable development of the workforce as a whole.

2.2.2. Likely Impacts and Consequences of Problems

Economic:

- Unproductive economic activity will be prevalent due to negative wellbeing of women in the workforce after domestic/intimate partner violence (IPV).
- A correlation between economic productivity and negative wellbeing of women following sexual harassment.
- A labour shortage may occur in FTZ Apparel Industry as violence against women is a key concern preventing young women from joining the apparel industry labour force both within and around the FTZ.

Social:

- Adverse effects on the wellbeing of victims of Violence against Women (VAW), and sexual harassment affecting sense of safety, self-confidence and decision making capacity.

⁶⁴ Leader of the Opposition's Commission (2014) *Report on the Prevention of Violence against Women and the Girl Child*, <http://www.childwomenmin.gov.lk/resources/30/REPORT.pdf>. Accessed 20 June 2017.

⁶⁵ Sarveswaran, A. (2012) 'Sexual Harassment at Workplace: An Evaluation of the Effectiveness of Legal Responses Available in Sri Lanka', *New Horizons in Human Rights* (Center for the Study of Human Rights, University of Colombo), 107-133.

⁶⁶ Maduruwala, S. (6 April 2017) 'The Dwindling Stitching Hands -- labour shortages in the apparel industry in Sri Lanka' *The Island*, http://www.island.lk/index.php?page_cat=article-details&page=article-details&code_title=163154. Accessed 6/4/2017

⁶⁷ De Mel, N., Peiris, P., and Gomez, S. (2013) Broadening Gender: Why Masculinities Matter – Attitudes, practices and gender based violence in four districts in Sri Lanka, CARE International, Sri Lanka

- Correlation between witnessing violence to mother/ childhood trauma and risk of future perpetration of IPV.
- Correlation between IPV and miscarriage.
- Social stigma experienced by victims of VAW.
- Correlation between Increased impunity for perpetrators of VAW and prejudicial views of law enforcement and judicial personnel, and lack of social justice, rights and entitlement of women.
- Negative impact to wellbeing and a sense of dignity, which thereafter affects women's mental health, capacity to be productive, and risk of harsh parenting⁶⁸.

2.2.3. Remedies, Measures and Implementation

- Introduce a national transport policy that not only focuses on rural-urban connectivity but also ensures zero tolerance of women's sexual harassment in buses and trains.
- Introduce law reforms to ensure proper law enforcement against VAW/SGBV by the police.
- Introduce policies to encourage the reporting of harassments. Provide human resource training by professionals including health professionals to halt its prevalence at the workplace.
- Implement educational, community and media programmes to create an attitudinal change towards zero tolerance of VAW/IPV/SGBV. These programmes should include focus on changing the attitudes of men and boys to instil a culture of zero tolerance towards VAW/SGBV.
- Conduct national studies on women's participation in the informal economy, the prevalence of SGBV, and the impact on women of climate change and environmental degradation.
- Introduce community based programmes towards the de-stigmatizing and social acceptance of women victims of IPV/SGBV.

3. Sustainability Perspective – 2020 and Beyond

It is projected that by 2022 the 60+ aged population will increase by 17 per cent while female life expectancy is expected to reach 82.5 years as against 72.3 years for men by 2026. An increase in the fertility rate of women who are 35+ years until 2022 is also projected. These demographic trends will result in increased financial insecurity, including greater health and long-term care costs that will force elderly women into jobs in the informal sector, working long hours for pay that is less than younger workers. At the same time, older mothers will experience the effects of a change in the pattern of intergenerational wealth transfer where, instead of a wealth flow from employed children to parents, children continue to be financially dependent on parents.

The increase in the elderly population will also seriously impact the better job prospects of younger women. There is a disproportionate burden on younger women to care for the elderly and children who thereby have to live in close proximity to sites of parental and child-care resulting in limited

⁶⁸ Fulu, E., Miedema, S., Roselli, T., McCook, S., Haardofer, R., Jewkes, R., (2017) 'Pathways between childhood trauma, intimate partner violence and harsh parenting: findings from the UN multi-country study on Men and Violence in Asia and the Pacific.' *Lancet* 5, 512-22.

access to employment with better income. This is particularly acute in rural areas where 85 per cent of the poor and a majority of the elderly population are already located. This situation is also acute in the north and east where many women are single heads of households with extremely limited livelihood options. Even in those districts where urban and livelihood development has occurred, women's responsibilities in household care dissuades them from maximizing on this dividend.

An integrated plan that strengthens retirement benefits, re-skills 60+ year old women for better jobs, formally recognizes unpaid care and domestic work, brings in public-private partnerships for household care, and mainstreams joint responsibilities of men and women in parenting and household care into educational curricular and workplace norms will alleviate the disproportionate burden on women in the informal and unpaid care economy. Programs to train younger women in technical and leadership skills that will enable them to enter the formal economy at better rates of pay, policies to monitor and abolish gender wage gaps, ensure the accessibility, safety and security of women in relation to public transport and workplaces, and strengthen the prevention of domestic violence will also encourage women into the labour force, facilitate their wellbeing and increase their productivity. The sustainability of a cohesive, ethical society as well as greater economic productivity rests on equal opportunities for all including women in accessing economic resources and well paid and dignified employment; and being safe from harm including sexual and gender based violence.

T. CROSS CUTTING THEMES

T4. Governance⁶⁹

1. Current Status

The end of thirty years of armed conflict has afforded Sri Lankans an opportunity to help usher in an era of peace, national progress and development. However, an entrenched and adversarial political culture in pursuit of what is perceived as conflicting demands of diverse sectors of the population, by political parties and politicians seeking political power and office, has made the development of consensus on a national vision of good governance, extremely challenging.

In the current period of post-armed conflict, there is a growing commitment to establish and implement norms of good governance, creating public confidence in the idea that a democratically elected government must ensure the wellbeing of the people, peace progress and development. This vision for peace and progress linked to good governance was one that is considered a clear path to accountable governance beneficial to all Sri Lankans, irrespective of diversity in race religion political beliefs and other factors.

Certain pillars of good governance have emerged in recent years, including:

- Constitutional reform that would respond to the negative aspects of the Constitution of 1978 which had emerged in over 30 years of experience since its enactment, resolving the national question by ensuring inclusive development and progress, balancing majority and minority community claims and interests in Sri Lanka's plural society.
- Responding to and eliminating the serious and debilitating impact of corruption in all areas of governance and in society, by consistent and effective interventions and programmes, focusing especially on effective law enforcement. Respecting core norms on the rule of law, and unbiased administration of criminal justice were considered a critical aspect of any response to the breakdown of law and order, experienced by the public, in recent decades.
- Reforms to the institutions of governance so as to eliminate political interference and develop professional capacity, in a manner that would restore the confidence of the people in public administration and the judiciary.
- Responding to the abuse of power and authority, by making offenders accountable, undermining what had emerged as State legitimized impunity for illegal conduct, thus creating citizen confidence in the administration of justice and the rule of law.
- Strengthening the legislative institutions and accountable use of national resources and finances, through electoral reform, effective power sharing between the Central government and provincial and local authorities.
- Adopting a stronger Bill of Fundamental Rights of the people that would create obligations on state and non-state actors in conformity with Sri Lankans' obligations as a state that has ratified international treaties, and is also bound, like other nations by international law.

⁶⁹ Writing Team: Savitri Goonesekere (Leader), Siri Hettige, Mano Tittawela, and Mohan Munasinghe

- Responding to the grievances and tragic experiences of those Sri Lankans who have suffered violence abuse and loss of economic assets and opportunities during armed conflict and civil disturbances in all parts of the country.

These pillars of good governance continue to be valid for a vision of peace, development and progress for 2030. They resonate with the framework required for a people centered democratic and accountable governance that can deliver the dividends of conflict free social and economic progress and sustainable development. They also harmonize with international treaties that successive governments of Sri Lanka have ratified, customary international law, and global policy documents adopted by Sri Lanka, including the SDG.

In signing treaties and adopting global policy documents like the SDG and participating in international fora like the UN and the Human Rights Council, Sri Lanka takes its seat in these fora as a responsible member of the community of nations (sometimes described as "the international community" of nations.)

Successive Sri Lankan governments have ratified all the major human rights instruments, and accepted obligations of treaty implementation. Sri Lankan courts have applied these norms and standards on human rights in deciding on cases of fundamental rights litigated in our courts, clarifying that these rights are also based on Sri Lanka's obligations under treaties and customary international law.

Unfortunately, the public rhetoric of some political leaders has failed to understand this reality, or deliberately misled and confused the public by suggesting that the "international community" is a high powered external force to which Sri Lanka does not belong, that is aggressively challenging and undermining our sovereignty as an independent nation state. The community of nations to which Sri Lanka in fact belongs according to international and domestic law and norms of governance, is then not recognized as a collective of partners and peers. Other states in the UN and organs of the UN like the Human Rights Council are perceived as alien organizations that threaten and bully our country in pursuit of a hidden agenda. The ultimate result is that public understanding and confidence in the international regime of the governance is undermined. The public does not then understand that when Sri Lanka takes its place as a member of the international community it has voluntarily recognized that its governance will be judged and evaluated according to these global norms and standards and not only by what are perceived by some sectors of the population as domestic realities. The public is constantly exposed to a barrage of political rhetoric that wants them to accept that international norms and standards do not strengthen the rights of the people, and creates obligations on the government to respect promote and fulfil them.

These incorrect perceptions that undermine accountable and responsible governance are reinforced by some minority political parties and leaders who constantly refer to "the international community" as an outside force that must bring the Sri Lankan state to account for violation of these norms and standards. They hardly articulate a voice on the government's responsibility to its own people to conduct itself as a responsible member of the international community, and a state that is a member of that community. This is why any international procedures like those of the Human Rights Council and its resolutions do not contribute to building a national consensus among political parties, their leaders and the public, and a vision of a people-centred good governance based on the above pillars.

A vision for 2030 must strive to address the above complex dynamics. It is critically important to focus on the following:

- a) Reform of the Constitution that not merely tinkers with it, including more than the current 19 amendments, and with an active public campaign highlighting its key features, so that the people can decide at a Referendum whether to accept or reject it. Expert committees have already deliberated and made recommendations on key aspects, such as power sharing between the central, provincial and local government bodies within a united and indivisible Sri Lanka, religious freedom and tolerance, and public institutions of governance. The expert committee on a Bill of Rights has also provided some useful input, especially on economic and social rights. The President, the Cabinet and Parliament must debate and discuss these proposals in an informed and responsible manner, with well informed and wide public participation, so as to strive for and obtain consensus on a draft Constitution. This is a core national need for peace progress and sustainable development, and should not be undermined by narrow sectarian political agendas of any party that claims to represent the people or communities within it. An effective communication strategy that will keep the public informed must be given maximum priority by the government and by all those who recognize the critical importance of constitutional reform for accountable governance and people-centric progress and development.
- b) The constitutional reform process is also closely linked to another key aspect of good governance for the future - striving to heal the wounds of those who suffered most in the previous decades of violence. Peace progress and sustainable development as envisaged in Goal 16 of the SDG, human rights instruments that Sri Lanka has ratified, as well as the fundamental rights recognized by the current constitution cannot be achieved without some closure regarding injustices suffered. This requires broadly based community awareness recognition and understanding of the root cause of our armed conflicts, and the need to prevent a recurrence of these conflicts. It is in this context that constitutional reform and achievement of these goals must not be considered sequentially, or perceived as options.

Already, legislation has been enacted on the tracing of missing persons, and this must be implemented without delay with adequate and effective - state and people support for implementation. Proposals for other mechanisms have been studied, within some agencies of the government. These proposals must also be placed before the public for debate and discussion, since there are many misconceptions regarding what should be investigative mechanisms for ascertaining facts and holding perpetrators of grave violations of rights of personal security and property, culpable for these violations. The domestic legal system lost its credibility due to various factors in recent decades, even though there was a system of administration of justice that functioned in the past, which ensured that both civilians and armed force personnel were prosecuted and held accountable for serious damage to the person and property of other citizens. The current challenge is to strengthen existing institutions or create new ones that will restore the confidence of alleged victims of such violence their families and the general public in the administration of justice by local domestic institutions. The focus should be on creating a credible environment for effective investigation, prosecution, judicial decision making and law enforcement according to core norms of good governance and the rule of law.

2. Critical Issues, Impacts and Solutions

2.1. Governance and Decentralization

2.1.1. Present Status, Issues and Problems

In spite of having a three-tier governance structure, Sri Lanka continues to be a highly-centralized polity with a high degree of centralization of power and decision making. Recent floods and its aftermath demonstrated this very clearly. Local and provincial governments were very much in the background. On the other hand, there are many issues of governance at a national level that affect the functioning of national institutions in the areas of public administration, judiciary, law enforcement and the delivery of quality specialized services such as higher education, research and innovation, national planning, etc. Politicization and brain drain in the recent past adversely affected many institutions. Constitutional and administrative reforms need to address these issues in order to create a conducive environment for sustainable development.

2.1.2. Likely Impacts and Consequences of the Problem

Economic:

- The three-tier governance structure provides a great opportunity to decentralize economic and social planning and implementation of economic policies and programs. The sub-national units need to operate within a competitive environment making efforts to attract investment, skilled labour and create opportunities for local people.

Environmental:

- While national policies and programmes are important for managing environmental resources, micro-management of local environment for sustainable development and public use needs to be based on the subsidiarity principle.

2.1.3. Remedies, Measures and Implementation

- Decentralization of planning and plan implementation, adoption of the subsidiarity principle in devolution of power, people's participation in governance at national, provincial and local levels and the empowerment of local councils are measures that can change the present highly centralized decision making structure.
- While strategies and policies are important pre-requisites, execution of strategic goals is the greater challenge today for government, business or any other entity. We have many examples from other countries where targeted goals were not achieved due to lapses around execution rather than poor strategy. There are multiple global and regional organizations that recommend the strategic direction for countries and governments when they have a stake in a country in various forms. And in the modern world, one can 'buy strategy' if one has limited capacity to formulate the right strategies. However, the execution is our own obligation and responsibility which cannot be outsourced. It is therefore very critical to have equal emphasis being placed on execution/implementation to achieve the 2030 Vision.

- Past governments in Sri Lanka have embarked on similar studies and appointed committees, rallying intellectuals and practitioners around strategy formulation, but results have been below par. Therefore, this report seeks to place emphasis on implementation.

Impediments to Successful Implementation

1. Lack of long term strategy or refusal to take the existing/old strategies forward by the new government for political reasons/advantage (eg., see Energy Sector section).
2. Lack of continuity and independence in the public administration system – resulting in changes of individuals and policies based on short term political concerns (eg., see Energy Sector section).
3. Inherent political culture in which unrealistic political pledges are given to the voters that promote unsustainable recurring expenditure with zero returns as opposed to investment for long term growth.
4. Corruption at political and public administrative levels - SL have been sliding on the global ranking over the past few years.
5. Inconsistent policies in terms of fiscal, tax & duties, investment climate, market regulation etc.
6. Lack of legislation(outdated) and political influence on the implementation of law & order.
7. Government accountability model and delegation of authority; lack of clarity around who does what in terms of individual and collective accountabilities & measurement criteria
8. People factors affecting public sector performance - knowledge & skill gaps, performance, rewards & recognition not linked to pay, misaligned performance measurement criteria, and transparent & fair career advancement opportunities.
9. The culture of government organizations causing inefficiencies - issues around the value system, ethics, motivation, and conflict with labour unions.
10. Outdated Labour regulation/laws insulating even the worst performer.

Correction of the above and integration of an implementation plan is necessary to ensure effective implementation of the strategies set out in this report. The likelihood of achieving the 2030 vision will be greatly reduced if future implementation is left entirely to another group of people or based on the current implementation model, structure and system.

Approach towards Resolution of Issues

1. A framework for good governance by the public sector is essential to overcome the above fundamental problems and ensure effective implementation. The following proposals would constitute a useful start.
2. Maintaining a workplace culture with strong ethics and integrity is a part of the governance framework and is fundamental to good public sector performance. Public sector employees must operate independently with integrity and maintain high standards of ethical conduct to maintain sound decision making processes and ensure community confidence and trust in the public sector.
3. Well defined management responsibilities and accountabilities, meaningful strategic plans, programs and action plans, and independent oversight are cornerstones of governance for the public sector and should be in place.

4. Ensuring clear and transparent relationships between the elected government and the bureaucracy is critical to prevent any undue influence in the administration of public functions and to ensure swift and efficient implementation of government policies and strategies.
5. Establish good governance strategy and structure -A structure needs to be put in place that cuts across all levels (e.g. central, provincial and local) of public bodies/agencies, re-defines their scope and re-assigns specific roles, responsibilities and accountabilities, and empowers them with delegated authority independent of political intervention or influence.
6. Create a culture in which people will be naturally motivated to do the 'right thing, the right way' with utmost loyalty and commitment. Promote and inculcate values such as integrity, trust, respect, directness, speed and transparency and direct leadership across all levels of public servants. Make people committed to service delivery as their primary obligation in discharging their day today duties meeting statutory and other obligations, through audit, delegation of authority, and having policies, processes and plans to manage finances, risks, human resources, equal opportunity, occupational health, and safety obligations.
7. Drive performance of the public sector with optimum effectiveness and efficiency, through performance monitoring and evaluation systems, and process both at an individual and organizational level; and performance reporting.

In achieving the above, it is important to be guided by the following governance principles;

1. Government and public sector relationship – the public-sector relationship with the government is clear and interdependencies are well understood & coordinated.
2. Management and oversight – management and oversight are accountable functions with clearly defined responsibilities.
3. Organizational structure – the structure fully covers and serves its operations.
4. Ethics and integrity – ethics and integrity are embedded in the values and operations.
5. People – good people management contributes to individual and organizational achievements
6. Finance – safeguards financial integrity and accountability.
7. Communication – communicate with all in a way that is accessible, transparent and responsive.
8. Competitive pay for the public sector – includes a performance based variable pay component.
9. Reward and recognize - performance, conformance and compliance.

3. Sustainability Perspective – 2020 and Beyond

A framework for good governance by the public sector will help overcome the above fundamental problems and ensure effective implementation. Decentralization of planning and plan implementation, adoption of the subsidiarity principle in devolution of power, people's participation in governance at national, provincial and local levels and the empowerment of local councils will change the present highly centralized decision making structure.

Well defined management responsibilities and accountabilities, meaningful strategic plans, programs and action plans, and independent oversight are cornerstones of governance for the public sector. The public sector will be run with optimum effectiveness and efficiency, through performance monitoring and evaluation systems and process, both at an individual and organizational level and performance reporting.

There will be a culture in which people will be naturally motivated to do the 'right thing, the right way' with utmost loyalty and commitment. The Constitutional reform process will help ensure peace, harmony and sustainable development.

T. CROSS CUTTING THEMES

T5. Innovation, Industry and Technology⁷⁰

1. Current Status

Innovation is the doing of new things and the doing of old things better. Sri Lanka is not at the forefront, or even in the middle of the pack, in terms of innovation. Innovation associated with technology and industry must have broad application. Conventional indicators of innovation give weight to research and development (R&D) expenditures and patents filed. Sri Lanka's lower-middle income status and its weak industrial sector may explain poor performance. But even in services, where R&D expenditures are rarely separately reported and patents are uncommon, Sri Lanka is not perceived as a strong performer.

Innovation is not an end in itself. Strength in innovation translates into dynamism and resilience in the economy and yields tangible benefits to citizens. Slow growth and export diversification are some manifestations of weak innovation. With a few notable exceptions, our firms have not been quick to move to higher-value added products and to exploit new opportunities in the face of increased competition. Some examples of domestic business-process innovations may be pointed to, but the domestic consumer has rarely benefited from innovation.

Understandably for an economy similar to that of Greater Mumbai, Sri Lanka is a technology taker, not a maker. Small economies can be technology makers, as shown by Israel and Finland. Effective absorption of technology and incremental innovation is usually what occurs in small economies. Even that is lacking Sri Lanka.

GSP Plus Status from the European Union and the likely conclusion of comprehensive trade and investment agreements with India, China and Singapore in the near future will result in improved market access to over three billion people. Labour shortages, especially applicable to blue-collar occupations, will make it difficult to realize the potential of market access unless high-value exports that rely on knowledge workers and innovation are promoted and exports are rapidly diversified. While technology-intensive enterprises are unlikely to create large numbers of jobs of the kind needed to address the requirements of unemployed youth, especially those who are not in employment, education or training (NEET), they are likely to contribute to making Sri Lanka a more attractive place to come back to for expatriates by creating well-paying and rewarding employment. Escaping from the current debt crisis requires innovation focusing on export diversification.

⁷⁰ Writing Team: Rohan Samarajiva (Leader), Daniel Alphonsus, Louiqa Rashid, Nathan Sivagananathan, and Hans Wijayasuriya.

2. Critical Issues, Impacts and Solutions

2.1. Present Status, Issues and Problems

Conventional approaches to innovation promotion have been focused on government action: more government entities mandated to engage in R&D; more funds for R&D; tax concessions for R&D and so on. Starting from agricultural research institutes funded by various taxes (export cesses) levied on exports beginning in the colonial era, Sri Lanka has tried all these solutions, though perhaps falling short on implementation.

Rejuvenating government R&D organizations is difficult to complete quickly and in isolation from overall government reform. The creation of funds that private firms can apply for and the offering of tax concessions for R&D in recent years testify to the failure of direct government R&D. However, these solutions have their own implementation difficulties.

R&D activities, by definition, must include negative results and failures. Funding failure with public funds is difficult for government. Increasingly, it is becoming difficult to clearly distinguish R&D activities from the day-to-day operations of innovative firms. The above issues pose problems of accountability in relation to taxpayer funds disbursed, or taxes forgone (subsidies in different forms).

An alternative is to foreground the removal of barriers to innovation. For example, the government may improve the ease of doing business, facilitate simpler taxation, set in place less cumbersome safeguards for intellectual property and so on. Removing restrictions on innovation-intensive firms locating in Sri Lanka would be an obvious step. These tasks are, for the most part, indistinguishable from the general reform of government. The full range of reforms may be difficult to complete quickly but priority could be given to some high-payoff areas such as logistics.

Another alternative is for government to proactively support or provide the enabling conditions for the conduct of R&D by innovative firms. For example, the provision of land for innovation parks and incubators to be professionally managed by specialized firms may be undertaken through public-private partnerships. The government will contribute in the form of land in appropriate locations and the facilitation of clearances. The deliverables are easier to define in objective terms. The returns on public investment can be built into the contracts that the park/incubator manager enters into with the users of the facilities. Fostering closer university-industry partnerships is another element of this strategy.

One approach has to be given priority, but it need not be exclusive. For example, the identification and removal of barriers to innovation can take place in parallel with the establishment of public-private partnerships to proactively improve the conditions for R&D and related activities. Government R&D organizations will necessarily continue. Actions to make them more efficient and outward oriented will be needed in any case.

Problems that merit specific responses include:

- Absence of innovation-friendly mind-sets among decision makers and the general public has resulted in a lack of self-confidence, leading to a culture that privileges adoption and adaptation, rather than innovation.
- Conventional patent-focused rewards for innovation are not the most effective for service innovations. The intellectual property based system extant in Sri Lanka is dysfunctional.

- The angel and venture capital system in Sri Lanka is yet undeveloped. Few incubators and accelerators exist. With a few significant exceptions, large firms and conglomerates have not specifically created spaces for innovation.
- Our education system is exam-centric, based on rote-learning and unconducive to innovation. Many schools do not offer STEM [Science, Technology, Engineering and Mathematics] education. Parents are hostile to risk taking by young entrepreneurs.
- Not understanding the constraints of the small size of the Sri Lankan market, many local innovators have become trapped in dead-end strategies.

2.2. Likely Impacts and Consequences of the Problem

Innovation is a critical element in improved performance across multiple dimensions of sustainable development including human well-being and economic growth.

Sri Lanka is in 90th place in the Global Innovation Index, a one-place improvement over 2016. India maintains its top place in the South and Central Asian Region, moving up six spots—from 66th last year to 60th this year overall. Iran is 2nd in the region, moving from 78th to 75th. Tajikistan (94th), Kyrgyzstan (95th), Nepal (109th), Pakistan (113th), and Bangladesh (114th) are behind Sri Lanka.

Table 1: Top Ten Lower-Middle-Income Countries by Innovation Index and Sub-index Rankings

	By Global Innovation Index Rank within Income Group (Out of 29)	By Innovation Input Sub-index Rank	By Innovation Output Sub-index Rank	By Innovation Efficiency Ratio
1	Viet Nam (47)	India (66)	Viet Nam (38)	Viet Nam (10)
2	Ukraine (50)	Mongolia (67)	Ukraine (40)	Ukraine (11)
3	Mongolia (52)	Viet Nam (71)	Moldova (42)	Armenia (17)
4	Moldova (54)	Moldova (73)	Armenia (47)	Moldova (22)
5	Armenia (59)	Ukraine (77)	Mongolia (48)	Mongolia (27)
6	India (60)	Morocco (79)	India (58)	Cote d'Ivoire (40)
7	Morocco (72)	Tunisia (81)	Philippines (65)	Indonesia (42)
8	Philippines (73)	Armenia (82)	Morocco (68)	Kenya (50)
9	Tunisia (74)	Philippines (83)	Kenya (70)	India (53)
10	Kenya (80)	Kyrgyzstan (89)	Tunisia (71)	Philippines (55)

Note: South and South East Asian lower-middle-income countries in bold font.

Source: The Global Innovation Index 2017, p. 27 at <https://www.globalinnovationindex.org/gii-2017-report>

Sri Lanka was in 10th place for innovation efficiency in 2016 but is no longer in the top ten in any category among lower-middle-income countries. To displace a country currently in the Top Ten,

it will have to make significant progress both in inputs and outputs. It is noteworthy that Viet Nam, a country with a per-capita GDP lower than Sri Lanka, is in the Top Ten in all three sub-indices and is leading overall and in two sub-indices. Sri Lanka is 43 places behind Viet Nam in the overall rankings. It is perhaps no coincidence that Viet Nam is outperforming Sri Lanka in exports.

In light of the innovation momentum being built up by peers such as India and Vietnam, as indicated above, Sri Lanka's competitive position is likely to deteriorate even further. Economic implications will range from difficulties in servicing debt to inability to generate the kinds of jobs desired by our young people.

2.3. Remedies, Measures and Implementation

The island will capitalize on its size, diversity and openness to new ideas to create a vibrant innovation eco-system where invention and scaling by local as well as foreign innovators will be encouraged. This will be achieved by fostering an environment wherein user acceptance of product and process innovations can be systematically assessed using modalities such as sample surveys, data analytics, qualitative research and A/B testing conveniently, quickly, and at low cost.

In parallel, mind-sets conducive to innovation will be fostered through education and media. Conditions for the cross-fertilization of ideas will be promoted. A reward system for successful innovators (including, but not limited to, an effective intellectual property system that does not stifle innovation) will be developed. Angel and venture capital financing for start-ups and the provision of incubators and accelerators will be encouraged along with incentives for large companies to create space for innovation. The government will implement policies conducive to domestic and foreign investment and mergers and acquisitions, and openness to international partnerships and sourcing of inputs.

The government, by creating a process instead of picking winners, keeps the necessary risk taking where it belongs, in the hands of the innovators. It will, in short, create an "experiment nation."

Specific actions include:

2.3.1. Creating the leading test-bed in the region for product and process innovation

This can be done by incentivizing private firms and non-profit entities to put in place the necessary elements for an innovation test-bed. The initiative will be marketed to local and foreign firms by entities such as the Board of Investment and the Export Development Board. Enabling firms to move to Sri Lanka and to bring personnel in would be essential for success. In general, greater flexibility in terms of cross-border movement of skilled personnel, including those from the diaspora would be required.

Implications for:

Economy:

- Can create attractive, knowledge-based business and employment opportunities.
- Positioning of Sri Lanka as an "experiment nation" that welcomes innovative companies to market-test products will have collateral benefits for entire economy.

Society:

- The infrastructure for market testing products and services can easily be adapted to piloting and evaluating innovations in delivery of government services to citizens, businesses and external actors.
- Reengineering of government procedures is an essential precondition and will require government-specific initiatives.

Environment:

- If care is taken to position Sri Lanka's test-bed optimized to market test environment-friendly products and processes, damage to the environment can be minimized.
- Market testing seeks to discover negative externalities. Therefore, some negative impacts on the environment, especially from the testing of agricultural and manufacturing innovations are unavoidable.

2.3.2. Further encouraging Sri Lanka's inchoate angel and venture capital financiers and promoting incubators and accelerators along with incentives for large companies to create space for innovation.

The under-utilized tax incentives that were put in place a few years ago to promote R&D should be re-examined and modified to support the above actions. Tax concessions for capital gains and income tax for the first three years would be advisable. Domestic high net-worth individuals and firms should be encouraged to enter into angel and venture financing. Foreign entities with expertise should be encouraged to consider Sri Lanka. Legislation to permit a company to have more than 50 shareholders would enable the creation of effective crowd-funding platforms similar to Kickstarter and Indiegogo. Plans to make Trace Expert City a space for research and innovation should be reactivated. Similar facilities should be promoted/enabled in Jaffna, Matara, Kandy and Kurunegala. Infrastructure assistance in the form of land and utility services must be provided.

Implications for:

Economy:

- Tax incentives may have adverse effects on fiscal discipline and should be rationalized in a manner that does minimal damage.

Society:

- Creation of frameworks for the activities of financiers, incubators and accelerators will bound official discretion and contribute to good governance.

Environment:

- If incubators and accelerators are designed with emphasis on environment-friendly service activities, impacts will be minimal. However, given the need to promote innovation in manufacturing and agriculture, environmental impact may be expected and should be managed.

2.3.3. Creating conditions for cross-fertilization of ideas along with a reward system for successful innovators (including, but not limited to, an effective intellectual property system).

The most challenging task for the government is to create a reward system that does not stifle cross-fertilization of ideas and thereby innovation. This requires mobilization of the best brains in the world to critically assess the status quo and experience on the subject and develop a cutting-edge reward system that includes prizes and similar rewards, in addition to conventional patents. A “fast track” legal channel to handle contract disputes and matters related to the reward system is desirable.

Implications for:

Economy:

- A cutting-edge reward system for innovation and an efficient conflict resolution channel, bypassing the existing creaky legal system is likely to benefit the economy as a whole. However, care would have to be taken to ensure that the two systems do not lead to forum shopping and the creation of uncertainty.

Society:

- An island of good performance in an otherwise retrograde legal system may create impetus for improvement.

Environment:

- No major implications.

2.3.4. Fostering mind-sets conducive to innovation and larger-than-Sri Lanka thinking through the educational system and media.

The government will enable closer university-industry collaboration wherein multiple firms in the same industry would work with selected academic units. Internships and final-year project could be designed to produce well-commercialized projects. Lessons from University of Moratuwa’s experience in inculcating entrepreneurial attitudes should be extended across a range of tertiary educational institutes, not limited to universities. In addition, a small number of magnet/demonstration schools at the secondary level, sponsored by industry associations such as CCC and SLASSCOM that will demonstrate innovation-focused learning must be implemented. Embedding innovation-friendly messages in local teledramas would be helpful. Entrepreneurs must be encouraged to think bigger than Sri Lanka. This would mean focusing on a mature set of entrepreneurs (say above 30 years in age) and not limiting the universe of angel and venture capital sources to those that are explicitly focused on Sri Lanka.

Implications for:

Economy:

- Broader economy benefits from innovation-centric education, if the magnet schools succeed.

Society:

- Positive implications if successful.

Environment:

- No significant impacts.

Implementation

Given the short time frame, it will be necessary to establish a supra-ministerial task force supported by a lean management team to implement a focused “Experiment Nation” initiative. In the course of implementation and in interactions with relevant government agencies and stakeholders, the work program may be expanded and adapted as required. The tasks are necessarily broader than established Ministerial and agency silos. In light of the turf-safeguarding attitudes of the government ministries and agencies, political commitment at the highest levels of government is necessary for success.

Because the proposed initiative is not anchored on subsidies, it will necessarily have to mobilize innovation-relevant investments by private entities both foreign and domestic. This necessarily requires a strong emphasis on communication, so that the actions taken to create an Experiment Nation are well understood by potential investors. Effective communication will require “facts on the ground” including successful innovation incubators such as the reactivation of Trace Expert City in Colombo and elsewhere and the showcasing of start-ups and innovation units within established companies. Attention will also have to be paid to data (for example, properly classifying R&D expenditures) and to targeted improvement of indicators that form the inputs of composite indices such as the Global Innovation Index.

By 2020, what has to be done is:

1. Establish a supra-ministerial task force supported by a lean management team to implement a focused “Experiment Nation” initiative.
2. Create “facts on the ground” including successful innovation incubators such as the reactivation of Trace Expert City in Colombo, and identify success stories such as start-ups and innovation units within established companies.
3. Study laws, regulations and procedures that hinder the “Experiment Nation” and engage in changing the highest priority constraints.
4. Design and implement an international communication campaign under the aegis of the Board of Investment or the Export Development Board using the above.
5. Mandate a domestic study group to examine the efficacy of the tax and other government incentives used over the years to promote investment in innovation-intensive activities and to develop recommendations for reform.
6. Commission an international legal expert panel to study an optimal reward-and-risk environment for innovation and experimentation in Sri Lanka, with special reference to competitor countries.
7. Establish a task team to plan a multi-pronged communication campaign to change mind-sets that are hostile to innovation.

By 2025, what has to be done is:

1. Review the progress or lack thereof of the actions initiated in Phase One.
2. Take remedial action in lagging areas.
3. Complete implementation of all action items.

3. Sustainability Perspective – 2020 and Beyond

Actions initiated in the coming two years will take some time to yield results. Achievements that will form the basis for significant advance in the Global Innovation Index are possible within this time frame.

Successful implementation by 2025 will vault Sri Lanka to the forefront of innovation among lower-middle-income countries in South and South East Asia. Inclusion in the top ten among lower-middle-income countries and within the top two of South Asian and South East Asian countries within that income group are achievable targets. It should also be possible to document measurable contributions to diversification of exports and improvement of export volumes.

After 2025, the targets should be redefined as appropriate for an upper-middle income country.

T. CROSS CUTTING THEMES

T6. International Relations⁷¹

1. Current Status

The National Unity Government's vision for Sri Lanka is of an open, peaceful, democratic and secure country that takes its place as a responsible and respected member of the international community. Respect for Rule of Law and diversity, good governance, reconciliation, and sustainable development remain at the core of that vision.

Sri Lanka continues to conduct its foreign relations in an independent and non-aligned manner. At the heart of the Ministry's work in the international arena, our objective is to make Sri Lanka safer and more prosperous through beneficial bilateral and multi-stakeholder partnerships. This is realized through a global network led by individuals formally charged with representing the State, with the Ministry as its nucleus.

Given the current domestic and external developments, effectively managing Sri Lanka's foreign relations is critical to the welfare of the State and the people of Sri Lanka. The global power is transitioning from the West to the East & a maritime super region is envisaged with Asian Oceans at its centre. The Indian Ocean, the foremost theatre of this transition, has emerged as one of the world's busiest and most critical trade corridors that poses both challenges and opportunities for Sri Lanka. The flexibility and manoeuvrability that it affords must be utilized to determine an effective regional order that benefits Sri Lanka and meets the needs of all countries.

2. Critical Issues, Impacts and Solutions

2.1. Present Status, Issues and Problems

Given current domestic and external developments, effectively managing Sri Lanka's foreign relations is critical to the welfare of the State and the people of Sri Lanka.

With the emergence of new phenomena such as Foreign Terrorist Fighters (FTFs) and violent extremism and the widespread use of social media for hate speech and violence, the sharing of information and intelligence among countries has become of paramount importance. The Foreign Ministry continues to support related internal stakeholders to connect with other nations on these critical issues in order to find solutions for mutual benefit. A draft Legal Framework for Counter Terrorism Act consistent with international human rights norms and standards is already under consideration.

Strengthening global response to the threat of climate change, Sri Lanka signed and ratified the Paris Agreement, which has entered into force for Sri Lanka in November 2016.

Promoting Indian Ocean based regional cooperation remains a priority in Sri Lanka's foreign policy. Sri Lanka's active role in IORA is aimed to ensure maritime safety and security, protection of ocean

⁷¹ Writing Team: Abdul Azeez (Leader), and Foreign Ministry Staff

related resources, freedom of navigation, and reaping the benefits of Blue Economy. The Ministry also facilitated the 8th Meeting of the Bay of Bengal Initiative for Multi - Sectoral Technical and Economic Cooperation (BIMSTEC) sub-group on 'Combating the Financing of Terrorism' held in March 2016 and the 16th World Export Development Forum (WEDF 2016).

2.2. Remedies, Measures and Implementation

With its unique geopolitical location along the major shipping route that connects (South) East Asia with the Indian subcontinent, the Middle East and Eastern Africa, which is among the most important Sea Lanes of Communication (SLoC) as well as Sea Lanes of Trade (SLoT), Sri Lanka is emerging as a transhipment, logistics, commercial and services hub in this wider region. It has the potential to serve as the fulcrum of a modern and dynamic Indian Ocean region. The function of the Ministry of Foreign Affairs and Sri Lanka's Foreign Policy are accordingly geared to maximize Sri Lanka's geostrategic potential.

In the period under review, the Ministry embarked on an ambitious drive to revive significant bilateral relationships and change their course. Relations with an important diplomatic partner and the closest neighbour, India, became considerably warmer and more focussed, underpinned by mutual trust, through consistent efforts made at the highest levels. Interactions with our friends in North America saw a distinct revival with cooperation expanding to the sphere of defence and security. Our engagement with China, the growing global power in Asia and our neighbours, including members of the UN Security Council, continued to thrive with high level visits being undertaken on a regular basis. Relations with traditionally friendly Far-East Asian partners expanded significantly with the establishment of a comprehensive partnership and the inaugural Bilateral Dialogue on Maritime Security, Safety and Oceanic Issues being convened. Ties with countries in Australasia, South East Asia and Southern Africa continued to expand and strengthen. In our immediate neighbourhood, our focus was on deepening ties with our counterparts in the SAARC region. Efforts were also made to develop bilateral relations with countries in the European Region.

The Foreign Ministry also extended Sri Lanka's diplomatic network by opening several new Missions/Posts. A new Consulate General was opened in Milan, Italy in 2015 and a resident Mission was established in October, 2016 in Addis Ababa, Ethiopia.

Economic diplomacy initiatives were pursued by the Ministry to bolster the economy, enhance development activities and attract foreign investors and traders to the country with vigour, taking advantage of the positive international focus on Sri Lanka. The Ministry also supported trade and economic policy decisions taken by the Government particularly related to negotiating free trade agreements with identified well performing economies in Asia while assisting the exploration of similar arrangements with other emerging economies. Furthermore, the Ministry worked closely with respective line agencies to attract more Foreign Direct Investments (FDI) to the country, increase trade potential, establish links with the global value chains in main economic corridors, and further improve substantial growth in tourism so as to contribute towards the economic progress of the country.

Provision of better and more efficient Consular Services is an important priority in Sri Lanka's Foreign Policy for the protection and the advancement of the welfare of Sri Lankans abroad. A Business Process Re-engineering (BPR) plan resulted in the introduction of a new digital system in early 2017, which provides fully automated, prompt, and efficient as well as interactive services to

Sri Lankans abroad, who earn the much-needed foreign exchange for the country. The system has also aided in providing a solution to minimizing document forgeries often committed in the past by human traffickers and people smugglers.

The Ministry and its diplomatic and consular missions abroad work at multiple levels within their areas of accreditation while remaining interconnected. These fundamental and crucial elements complement the goal of working towards a prosperous Sri Lanka founded upon lasting peace and security.

3. Sustainability Perspective – 2020 and Beyond

2020

Sri Lanka would become a commercial and services hub connecting different regions and an emerging transhipment and logistic hub in the region, by 2020.

We would also expect to see the successful outcome of the ambitious drive by the Government to revive significant international relationships and change their course:

- Engage with the growing global / regional powers in Asia and its neighbours.
- Strengthen multi-sectoral cooperation with close neighbouring countries.
- Strengthen relations with traditionally friendly Far-East Asian partners with comprehensive partnership and the inaugural bilateral dialogue on maritime security, safety and oceanic issues.
- Interact and engage with friendly nations in North America to further consolidate cooperation.
- Engage with the United Nations, including high level exchanges on a regular basis.
- Strengthen and expand ties with countries in Australasia, South East Asia and Africa.
- Deepen ties with counterparts in the SAARC region.
- Continue efforts to develop bilateral relations with countries in the European Region.
- Helping the Commonwealth develop a stronger trade, economic and investment framework, triggering economic growth among its members.

The Government of Sri Lanka should further focus on facilitating negotiations related to the issues of fishermen while countering misinformation propagated by certain diaspora elements through think-tank intervention by promoting Sri Lanka's image through media and the practice of public diplomacy.

2025-2030

Beyond 2020, we would aim to:

- Assist in the realization of SDG 17 (means of implementation) by working with international organizations, such as UNCTAD, UNDP, FAO, WFP, UNDO & financial institutions, and most importantly with the bilateral donor countries from the West, using our recently strengthened and expanded relationship to secure financial and technical support, for development.

- Project Sri Lanka as a model for specific SDGs, i.e. SDG 16: 'just and inclusive society' in a world of crises and uncertainties so that communities dedicated to peace building & economic development could pay increased attention to Sri Lanka in our nation's efforts to strengthen democratic institutions and development projects & programs. Thereby creating a positive atmosphere for trade and development co-operation.
- Help bridge bilateral and multilateral donors in intensifying efforts towards inclusive sustainable industrial development (SDG-09) as Sri Lanka's industrial base expands with increasing economic activity and investment. North-South Cooperation remains an important mode of facilitation of technical knowledge. Sri Lanka's leadership, as a robust and resilient trade and maritime hub providing connectivity between East and West, could help leverage South-South cooperation for economic advancement.
- Look beyond the EU GSP+ trade facility. The EU has stated that it has extended this concession to Sri Lanka due to the lack of diversification of its economy and to provide incentive for reform. Implementation of 27 international conventions to which Sri Lanka is party, which include 07 core human rights conventions is key to secure this facility and to continue to receive benefits from the EU GSP+ arrangement. While contributing to maintaining this benefit, we have the vision and initiative to transform trade and relationship with Europe into one of free trade by the time when the GSP+ facility will cease to exist, by 2022/2025.

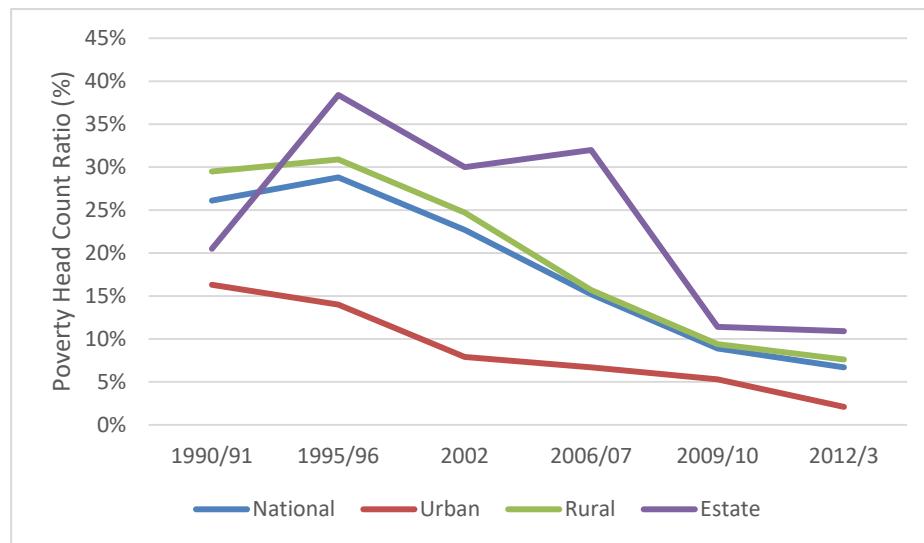
T. CROSS CUTTING THEMES

T7. Poverty and Inequality⁷²

1. Current Status

Poverty is declining in Sri Lanka. Absolute measures of poverty indicate that poverty in Sri Lanka is declining. The Department of Census and Statistic's Household Income and Expenditure Surveys (HIES)⁷³ using a monetary measure⁷⁴ have found that the poverty head count has declined from 26.1 per cent in 1990/91 to 6.7 per cent in 2012/13 (Figure T7.1). Based on the World Bank's absolute extreme poverty measure of USD 1.90 PPP (Purchasing Power Parity), the poverty headcount of Sri Lanka is only 1.9 per cent^{75,i}. Using the Multidimensional Poverty Index (MPI) that takes into account education⁷⁶, health⁷⁷ and living standards⁷⁸, the poverty level is approximately 4 per cent of the Sri Lankan population. Thus, for Sri Lanka, it is likely that poverty measured through these measures may decline to near zero by 2020 (See Figure T7.1 - National and Sectoral Poverty Lines).

FigureT7. 1: National and Sectoral Poverty Lines



Source: HIES, Department of Census and Statistics

⁷² Writing Team: Gamini Batuwitage (co-Leader), Udan Fernando (co-Leader) and K. Romeshun.

⁷³ The Department of Census and Statistics conducts Household Income and Expenditure Surveys every 3-4 years for about 20,000 households, all over Sri Lanka (the North and East were only included in recent surveys)

⁷⁴ The official poverty line (OPL) is based on consumption poverty anchored to a minimum recommended Food Energy Intake⁷⁴ (on expenditure of a person to meet the cost of a bundle of basic food of 2030 kcal per day in 2002) and expenditure on non-food needs.

⁷⁵ <http://www.worldbank.org/en/country/srilanka/overview> accessed on 20th June 2017

⁷⁶ Years of schooling and school attendance

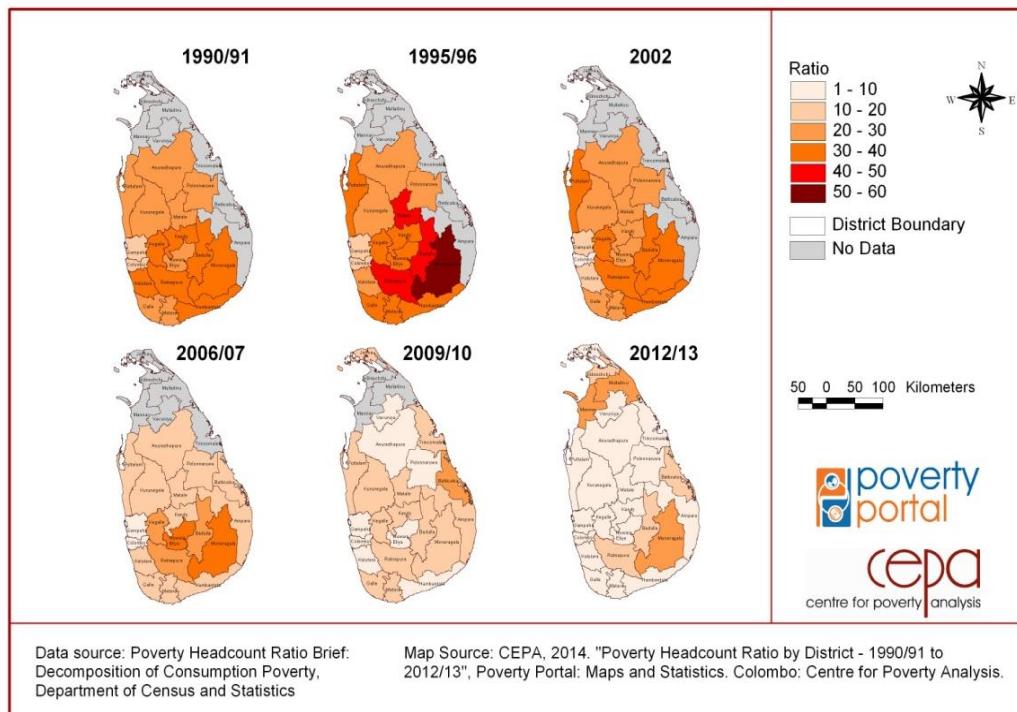
⁷⁷ Child mortality and nutrition

⁷⁸ Floor type, assets, water, electricity, toilet and cooking fuel

Near poor numbers are high. There is contention that only 5.3 percentage of *households* are classified as poor by the HIES but the Samurdhi/ Divineguma programme covers close to 16 per cent of householdsⁱⁱ. We do however note that there are considerable numbers of people who are near poor in Sri Lanka. Nanayakkara (2017)ⁱⁱⁱ finds that if Sri Lanka's poverty line is adjusted by 10 per cent, the poverty head count will increase to 9.9 per cent (an additional 620,000 people) indicating that there are many people who are just above the poverty line and a shock (natural or otherwise) can easily push them into poverty. Using the moderate poverty line of USD 3.10 PPP, he further finds that the proportion of population below the moderate poverty line is 14.6 percent of the population. In addition to that he found that the near multi-dimensionally poor is 11.2 per cent. In fact, the World Bank (2015)^{iv} argues that the bottom 40 per cent (consumption) be considered for policy and programme interventions; for instance, in relation to fostering growth and jobs.

Substantial Spatial Variation. The other consideration is the substantial variation in poverty that the national figures mask. There is wide disparity on the poverty headcount amount the various Districts. In the last HIES (2012/3), the conflict affected north and east Districts reported higher levels of headcount poverty. More specifically in the North and East, the Districts of Mullaitivu (28.8 per cent), Mannar (20.1 per cent) Batticaloa (19.4 per cent) and Killinochchi (12.7 per cent) reported high levels of poverty head count. Outside the North and East, Moneragala (20.8 per cent) and Badulla (12.3 per cent) reported high levels of poverty. The Western Province had the lowest poverty headcount of 1.4 per cent (See Figure T7.2).

Figure T7.2: Poverty Head Count Ratio by District



In addition to the poverty headcount, it is also important to take into consideration the number of people who are poor. As noted previously, Colombo and Mullaitivu have the lowest and the highest poverty headcount ratios, respectively. However, given its higher population density, Colombo has a higher number of poor people in comparison to Mullaitivu. The District that has the highest number of poorer people is Ratnapura, followed by Galle, Kurunegala, Batticaloa and Badulla (Districts that have around 100,000 poor people in each).

The Growth Elasticity of poverty⁷⁹ calculation finds that there is significant variation in both the changes to the poverty headcount and consumption growth amongst the districts of Sri Lanka). The reported poverty levels of a majority of the districts have shown a decline between 2009/10 and 2012/3. However, poverty levels have increased in the districts of Anuradhapura, Moneragala, Polonnaruwa and Vavuniya⁸⁰. Similarly, in a majority of the districts, the mean per capita consumption has increased between 2009/10 and 2012/13 in line with the decreased poverty levels and economic growth. However, in Anuradhapura and Moneragala, mean per capita consumption in real terms has declined. Similarly, the multi-dimensional poverty index shows that northern districts are more vulnerable together with the Nuwara Eliya and Matale districts in the Central Province, the Batticaloa District in the Eastern Province and the Badulla District in the Uva Province.

Amongst the sectors, the estate community among whom the poverty headcount has reduced drastically between the HIES surveys of 2009/10 and 2012/13, still has reported higher levels of poverty headcount (10.9 per cent) compared to urban and rural areas. Poverty is however multidimensional and in addition to income poverty the estate community lags behind other communities in housing quality, water quality and education

Poverty is complex. We however need to recognize that no single indicator or approach can capture all dimensions of this complex phenomenon and that poverty goes beyond income and basic services. For instance, employment/ income whilst reducing financial poverty does not necessarily reduce vulnerability, even among those in the formal sector. For instance, insufficiency of income amongst workers in the formal plantations results in higher levels of malnutrition amongst the estate community^v. The informal economy of Sri Lanka is quite high at 60 per cent ^{vi} and only a very small percentage of them have permanent tenure^{vii}. This job uncertainty increases vulnerability especially amongst the households in which a majority of the income earners are in the informal economy as employees or own account workers. In addition to the temporary nature of informal work, the other vulnerabilities observed include lack of social security (i.e. Employees Provident Fund), no savings in case of loss of their job and no formal plans for retirement^{viii}

The local economy, availability of resources/ assets, educational attainment of employment seekers and climatic conditions can play a role in the stability of employment/ income. The still undeveloped nature of the northern economy, results in poorer and less educated northern households seeking income from weather dependent sectors of agriculture and fisheries as labour^{ix} that results in irregular income. The dependence of Monaragala farmers on slash and burn cultivation and the lack of irrigation facilities to improve productivity are probable reasons for the continued higher levels of poverty in the district (Amarasinghe, Samad, & Anputhas, 2005^x; Department of Census and Statistics; World Food Programme, 2005).

⁷⁹ Percentage reduction in poverty rates associated with a percentage change in mean (per capita) income

⁸⁰ Comparison of other northern districts were not done due to partial or lack of data collection during the 2009/10 HIES Data survey

Table 1: Regional Variation in Poverty

District	Poverty Status (Head Count)			Mean Per Capita Consumption (Real Terms - 2002)			Growth Elasticity of Poverty (a)/(b)	Multi-dimensional Poverty Index
	2009/ 10	2012/ 13	Change (a)	2009/ 10	2012/ 13	Growth (b)		
Colombo	3.6	1.4	-0.61	5,310	6,160	0.16	-3.82	1.7
Gampaha	3.9	2.1	-0.46	4,857	5,708	0.18	-2.63	1.4
Kalutara	6	3.1	-0.48	4,104	5,085	0.24	-2.02	3.7
Kandy	10.3	6.2	-0.40	3,505	4,111	0.17	-2.30	4.7
Matale	11.5	7.8	-0.32	3,294	4,132	0.25	-1.26	6.5
Nuwara Eliya	7.6	6.6	-0.13	3,117	3,176	0.02	-6.93	10.7
Galle	10.3	9.9	-0.04	3,248	3,629	0.12	-0.33	3.8
Matara	11.2	7.1	-0.37	3,361	3,873	0.15	-2.40	4.1
Hambantota	6.9	4.9	-0.29	3,506	3,804	0.08	-3.42	2.2
Vavuniya	2.3	3.4	0.48	3,771	4,513	0.20	2.43	6.0
Batticaloa	20.3	19.4	-0.04	2,729	2,861	0.05	-0.92	11.3
Ampara	11.8	5.4	-0.54	2,904	3,091	0.06	-8.45	2.8
Trincomalee	11.7	9	-0.23	2,771	3,093	0.12	-1.99	4.0
Kurunegala	11.7	6.5	-0.44	3,165	3,881	0.23	-1.96	2.8
Puttalam	10.5	5.1	-0.51	3,273	4,283	0.31	-1.67	2.5
Anuradhapura	5.7	7.6	0.33	3,574	3,423	-0.04	-7.88	2.2
Polonnaruwa	5.8	6.7	0.16	3,692	3,950	0.07	2.22	4.7
Badulla	13.3	12.3	-0.08	3,007	3,298	0.10	-0.78	8.7
Moneragala	14.5	20.8	0.43	2,512	2,416	-0.04	-11.39	4.7
Ratnapura	10.5	10.4	-0.01	3,008	3,087	0.03	-0.36	3.9
Kegalle	10.8	6.7	-0.38	3,072	3,749	0.22	-1.72	4.0
Jaffna		8.3						5.2
Mannar		20.1						10.1
Mullaitivu		28.8						10.2
Killinochchi		12.7						6.4
Sri Lanka	8.9	6.7	-0.25	3,677	4,192	0.14	-1.76	4.0

Source: Authors Calculation based on Household Income Expenditure Surveys of 2009/10 and 2012/3; Nanayakkara, W. (2017, March 30). *Status of Poverty in Sri Lanka Based on Different Poverty Lines.* <http://www.ips.lk/talkingeconomics/2017/03/30/status-of-poverty-in-sri-lanka-based-on-different-poverty-lines/>

Village studies done by the Centre for Poverty Analysis in the North Central and Uva provinces suggest, our household asset base (e.g. quality of house, movable assets) has improved, but the dependence of many for real income, is in government jobs, including those from the war economy and/ or migration to other countries. Thus, job creation especially in the service and manufacturing sectors outside the Western Province requires incentivization.

Table 2: Other Indicators of Development

	Own house	Housing line rooms or shanties	More than one bed room	Drinking water within premises	Safe Drinking Water	Toilet exclusive to the household	Education passed GCE (A/L) and above
National	86.1 %	5.5 %	79.2 %	81.2 %	88.7 %	89.8 %	12.0 %
Urban	81.2 %	5.0 %	78.1 %	92. %	98.7 %	88.6 %	19.7 %
Rural	91.5 %	2.7 %	81.0 %	79.6 %	89.0 %	90.8 %	10.9 %
<i>Estate</i>	<i>8.2 %**</i>	<i>56.9 %</i>	<i>51.6 %</i>	<i>67.4 %</i>	<i>43.2 %</i>	<i>75.9 %</i>	<i>2.1 %</i>

Source: Department of Census and Statistics (2013). Household Income and Expenditure Survey 2012/13 - Preliminary Report, Colombo. This report is based on survey of July – September 2012 (first quarter of the survey) and not on the full survey

**72.7 per cent however report that they stay rent-free in the house

Poverty and Disasters. Sri Lanka is prone to multiple natural hazards and is affected by high frequency-low moderate severity as well as low frequency-high severity events. These hazards include floods, cyclones, landslides and drought, epidemics and human-elephant conflict. A World Bank study estimates that US\$ 380 million is annually lost due to disasters, and flood related loss is estimated at US\$240 million annually (World Bank, 2015, p. 120)^{xii}.

Disasters and shocks can undermine poverty eradication; evidence from other countries find that disasters can lead to an abrupt, systemic, intergenerational and long-lasting increase in poverty due to the event and the time taken to recover which can be several years (Ministry of Disaster Management, 2017, p. 193). In addition, the Ministry of Disaster Management (2017)^{xiii} reports that the affected communities indicate that floods or droughts affect them almost on a yearly basis, and such frequency of disasters also impacts the long-term resilience of the poorest population.

One of the most vulnerable is the agricultural community. Though the agricultural sector's contribution to the national economy has been declining drastically (around 7.5 per cent in 2016 of the Gross Domestic Product (GDP), a significant share of the workforce of (28.7 per cent in 2015^{xiv}) continues to be engaged in the sector. This productivity issue is a likely contributory factor for those engaged in agriculture to report higher levels of poverty than any other sector. Agriculture is a climate sensitive sector and climate related hazards have a significant effect on agricultural production. The frequency of natural disasters (i.e. floods, landslides and dry periods) impact agricultural production, especially seasonal farming, fisheries, agricultural labour, and livestock; and undermines the food security of this population (Ministry of Disaster Management, 2017, p. 77)^{xvii}. As the livelihood of a large population depends on a climate sensitive agricultural

^{xiv}Department of Census and Statistics. (2016). *Sri Lanka Labour Force Survey - 2015*. Colombo: Department of Census and Statistics

sector, this vulnerable group requires special attention in development interventions with attention to adaptation^{xiv}.

Poverty and Addiction. Studies in Sri Lanka point to various types of alcoholic beverages including illegal beverages having a direct association with the level of poverty. Surveys done by a number of researchers and organisations find that the users of alcohol in Sri Lanka averages between 33 to 39 per cent^{82, xv, xvi} with current users of tobacco estimated at 31 per cent^{xvii}. Baklien & Samarasinghe (2004)^{xviii} in their survey found that amongst the daily drinkers, 60 per cent exclusively consume Kasippu. It is also noted that consumption of illegal alcoholic beverages increases the likelihood of being in a poor household by 2–3 per cent. Households who are characterized as non-poor but are just above the poverty line behave more like the poor rather than the non-poor in terms of alcohol consumption^{xix}. Other studies point to 7 per cent of men reporting that their expenditure on alcohol is higher than their income^{xx}. Thus, addressing the issue of addiction amongst poor and the near poor should be an integral part of any poverty eradication programme.

Judiciary. There are approximately 745,000 cases that are pending in the legal system of Sri Lanka as of September 2016^{xxi} with a larger percentage of cases pending in magistrate courts⁸³ (72 per cent of the outstanding cases) and in District Courts⁸⁴ (23 per cent of the outstanding cases). The World Bank (2013)^{xxii} review of the Sri Lankan justice system highlights that over 91 per cent of the criminal cases and 70 per cent of civil cases are completed within 5 years. In addition, it notes that cases that are in the court system for more than five (5) years are partition cases followed by land and money matters cases. Such long gestation periods result in assets not being able to be productively used^{xxiii} and will discourage the vulnerable seeking justice through the court process. Reform efforts are underway to reduce the time taken for business purposes^{xxiv}, and the same level of attention is required in relation to other parts of the legal system, which would make legal remedies more accessible to the poorer segment of Sri Lanka.

Income inequality is high. The Gini coefficient of the mean household income of Sri Lanka is 0.48⁸⁵, an indication that income inequality is high. This income inequality has persisted in Sri Lanka since its independence (Isenman, 1980, p. 247; Ratnayake, 2013, p. 7) with very little changes over the years (Figure T7.3). Inequality hinders the poor from benefiting from services. In development literature, the universal provision of health and education by the government is stated as a key reason for higher human development indicators of Sri Lanka. Higher education does provide a means for Sri Lankan households to increase their income and hence is certainly a means to reduce poverty (See Figure T7.4). It is noted that those having only O/L qualifications are more likely to report employment in the informal sector, (Department of Census and Statistics, 2016) and thus have temporary jobs increasing uncertainty to their lives.

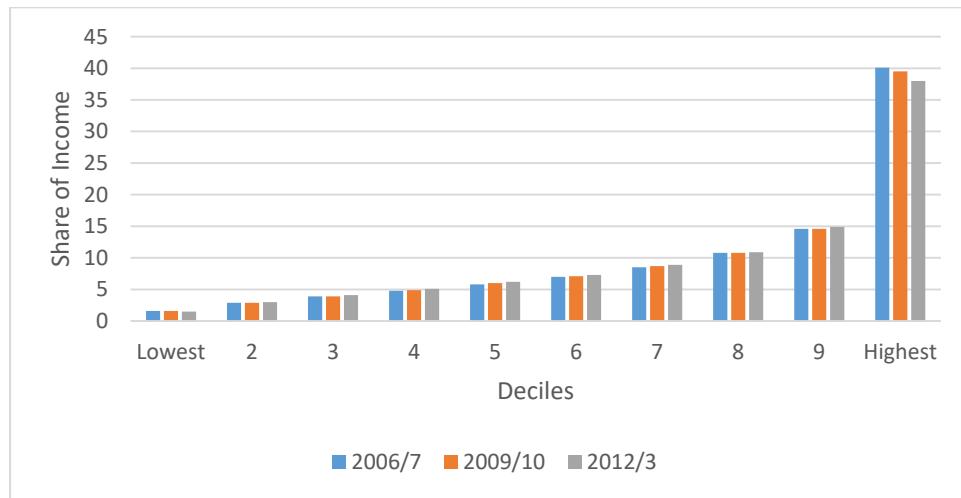
⁸² Of the surveyed 69.6% of men and 26.5% of women have consumed alcohol at some time in their life; 54.5% of the men and 7.6% of the women had consumed alcohol in the 12 months prior to the survey; 37.5% of men and 2.4% of women consumed alcohol in the 30 days prior to the survey; and 5.4% of males reported consuming alcohol more than 5 times a day (Somatunga, Ratnayake, Wijesinghe, Yapa, & Cooray, 2014). Mid-wives conducted the survey and hence there could be under-representation of women drinkers.

⁸³Cases which are criminal in nature

⁸⁴Cases which are civil in nature

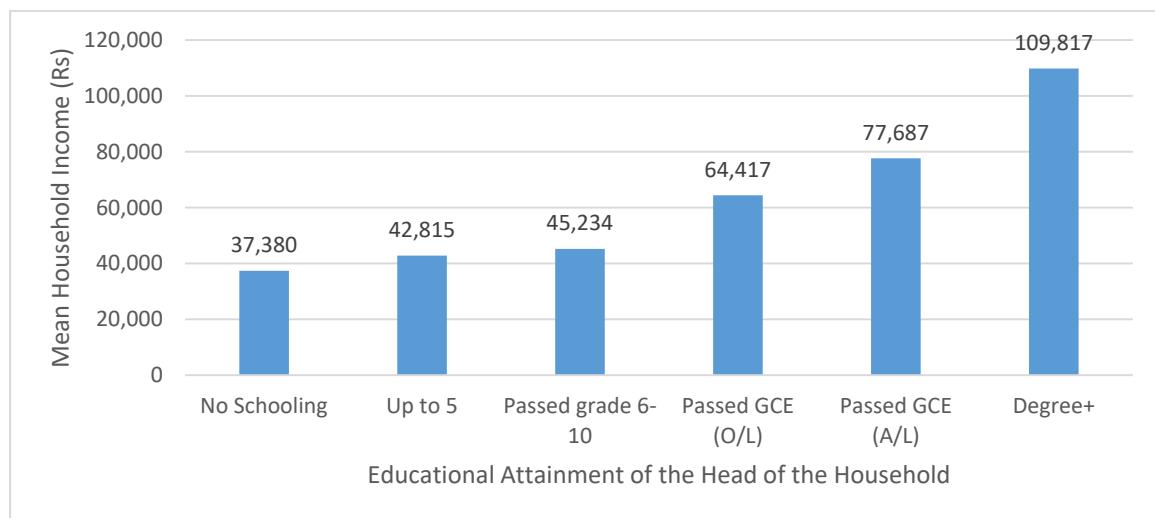
⁸⁵ Department of Census and Statistics. (2015). Household Income and Expenditure Survey 2012/3. Colombo: Department of Census and Statistics.

Figure T7.3: Household Income Share by Income Deciles



Source: HIES various reports, Department of Census and Statistics

Figure T7.4: Educational Attainment of Head of the Household and Mean Household Income

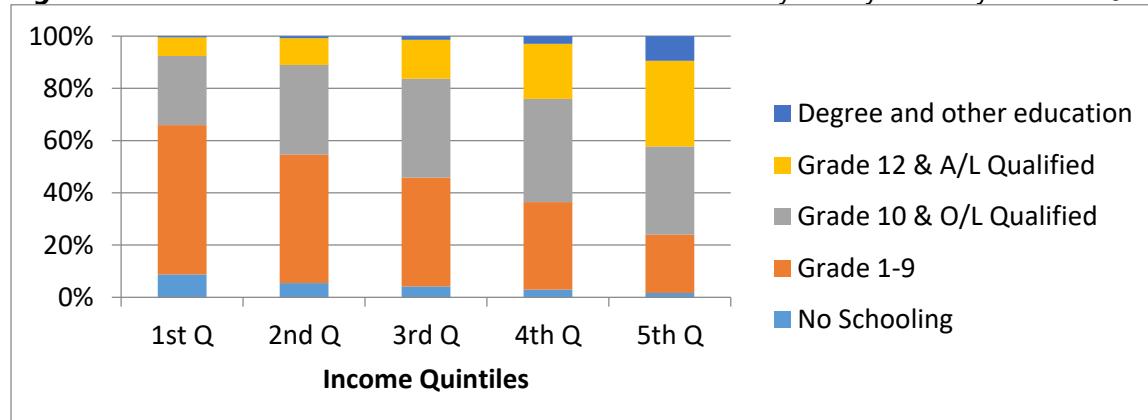


Source: HIES 2012/3, Department of Census and Statistics

These inequalities also hinder the poorer families reaping benefits from the services offered by the government such as education. Evidence points to poorer communities lacking access and having poorer outcomes in both education and health that the government offers free-of-charge up to the tertiary level. HIES surveys indicate that the educational attainment amongst poorer households is weaker and that richer households are more likely to benefit from free education (See Figure T7.5). Caste related issues are observed to constrain access to general education resulting in lower levels of education attainment for children from households that are lower in the caste hierarchy^{xxv}. Children from poorer households also have a poorer start to their education. Studies in foreign countries have shown that preschool education is important for the later educational attainment of a child^{xxvi, xxvii, xxviii, xxix}. A World Bank report (2014)^{xxx} finds that in Sri Lanka children between the ages of 3-4 from richer families are more likely to enrol in preschool in

comparison to the children of poorer families. Thus, children of poorer households are more likely to have a poorer start to their education. In health, Nanayakkara (2013)^{xxxii} finds that even though health facilities are available up to tertiary levels, deprivation is associated with chronic illness due to increasing prevalence of non-communicable diseases or disability of the head of the household or inadequate nutrition. Thus inclusive policies such as those in education and health provide a start, but in an evolving context additional measures are needed to leave no one behind.

Figure T7.5: Educational Attainment of 21 Years and above- By Family Monthly Income Quintiles



Households and groups are identified as poor and/or near poor. HIES provides valuable information on the trend on poverty and an understanding of who is poor among the population and where they are likely to reside as noted in the previous sections. With consistency reports^{xxxii, xxxiii, xxxiv} based on the HIES, a number of groups were found to be poorer than the rest of the Sri Lankan population. These include,

- the poor and near-poor (the bottom 40 per cent) are rural, disproportionately young and disconnected from productive earning opportunities;
- have lower education attainment and their children are less likely to pursue secondary and collegiate education⁸⁶ (secondary school attendance (87 per cent) and completion (53 per cent);
- are less likely to be working;
- a larger proportion is engaged in agriculture;
- had little progress, while the near poor are closer to those of the poor than the top 60 per cent in income and consumption;
- are far behind the ownership of productive assets;
- had little improvements to access to basic services from the year 2002;
- have limited access to credit markets;
- have consumption and income inequality associated with unequal access to health and education services;

- Inequality is also apparent in access to basic housing infrastructure (permanent housing structure - 77 per cent), as well as health and nutrition outcomes (access to iron-rich foods (51 per cent) and stunting rate also remains high at 19 per cent)

The high suicide rate, increasing drug menace penetrating the lives of school children, increasing crime rate, highly divisive society on political, racial and religious lines declining opportunities for consensus on national issues, and declining incomes and opportunities to raise income leading to frustration to youth raises the percentage of poverty focus to the bottom 40 per cent of our society. The ill effects of poverty and inequality in growth and distribution are felt by the whole population with adverse implications to the economy and society.

2. Critical Issues, Impacts and Solutions

2.1. Present Status, Issues and Problems

- Growth was not in sectors in which a large number of the poor and a large number of the marginalized groups are engaged.
- No policy advocacy to effectively move factors (land, labour and capital) to more potential sectors or ventures from which the poor and near poor can benefit.
- The poor and the near poor have less access to capital, productivity- increasing technology, markets and networking.
- The bottom 40 per cent of the population has the least access to economic and social infrastructure, and has a high opportunity cost of innovative mechanisms preventing adoption.
- The negative impact of often yearly natural disasters on the poor and near poor.
- The absence of adequate social protection for the physically and mentally handicapped and chronically ill members of households that cripples and traps such households in abject poverty.
- Poor groups are less organized, as inclusive and accountable economic and social institutions legally recognized, to be able to manage their own resources and to partner with the government and private sector, and to deal with market forces adopting more sustainable production and consumption practices.
- Individual households are not strong enough as economic units to make investment decisions with risks without proper networking to leverage required support.
- Lack of focus on public and private enterprises in micro economies with growth potential engaging the peoples sector partnership for mutual benefits for the partners.

2.2. Likely Impacts and Consequences of the Problem

The critical issues stemming from the deep-rooted problems will have substantially adverse effects and impacts on economy, society and the environment alike. The frustrations of the bottom 40 per cent of the population with the incapacity as single households to influence, draw attention to and secure resources needed in the pursuits that would generate reasonably adequate and decent income through sustainable means would generate unrest and leading to social and political instability gradually.

The cost of giving hand-outs to appease the demand, through pressure groups or agencies unchanged and unprepared to address the issues effectively would be higher than the returns and would further divide the society adding to the problems of no consensus since policies and institutions matter. The following would need attention.

- The delayed attention to the cumulative effects of the issues will fail the production sector in competing for export and domestic market shares and will let the monopolistic or unscrupulous forces to benefit.
- The women, the youth, the adults of entrepreneurial talent would keep themselves away from wealth generating production processes and depend more on welfare or socially adverse ways of living. Such means would include encroachment on lands meant for conservation and negligence on resource protective measures, progressively loosing capacity to manage inputs and waste.
- Efficiency and effectiveness of resource allocation to increase volumes of production and consumption to meet the desired targets by the wider population will decline.
- Rivalries among various political and social groups will overtake and discourage effective citizen engagement in governance.
- Incentives will accrue to the better off increasing inequality and ignoring sustainability ethics.

2.3. Remedies, Measures and Implementation

The sustainable growth imperative demands caring for the natural resources for the benefit of the present generation and the future generation while not discouraging the prudent use of resources for inclusive growth. This calls for adopting practices caring for humanity and the environment of the territory occupied by people. People can be effectively mobilized for such production and consumption practices if the compliance of law and order is coupled with ethics and with the core values of the society. The following recommendations would form an activity mix for investment for a vision of desired sustainable poverty reduction.

- While addressing the macro economic issues to ensure an enabling environment for investments in innovative mechanisms, for the desired structural transformations, ensure that such policies promote inclusive growth in the micro economy.

Vision for 2030: *Macroeconomic policies adopted by the government reflect implications on inclusive growth promotion strategies at a micro level.*

Indicators of results: *Increased growth in sectors directly benefitting the large majority of the labour force with increased income and consumption through sustainable means.*

- Mobilize the divisional secretariat as the unit of planning and coordination of interventions for sustainable production, consumption and conservation in their area of authority in line with the provincial and national strategy, engaging stakeholders of public, private and peoples sector for development for investment.

Vision for 2030: *Divisional and provincial government development and administrative structure to be restructured taking up responsibility of coordinating economic and social interventions for effective improvement of the micro economy of their area of authority.*

Indicators of results: Decentralized procedures adopted for decision making and surveillance on sustainable inclusive microeconomic development interventions at divisional and provincial levels

- Mobilize government, private sector and other non-government agencies to declare the space in their programs for the poor in response to the current national call on supporting the sustainable development process to reach the national goal of a poverty free Sri Lanka by 2030.

Vision for 2030: The government and the private sector organizations disclose opportunities available in their sustainable production programs for the poor to benefit.

Indicator of results: (i) Economic opportunities widely published and communicated to poor areas and communities for the poor to benefit from the government and private sector benefitting all. (ii) Innovative mechanisms are advocated including detailed costs, benefits and implications attractive to the poor and disadvantaged groups who will benefit (3) Special procedures adopted by concerned agencies to provide last mile services to the poor.

- Launch and regularly refresh a countrywide campaign to increase effective citizen engagement in public affairs in rural as well as urban economies, mainstreaming a community self-managed development approach in all Grama Niladhari Divisions with targets for 2020, 2025 and 2030 giving priority to the poorer and disadvantaged areas and community groups.

Vision: Citizen education reaches every village and continues to be refreshed to safeguard community interests to overcome poverty

Indicators of results (i) Number of institutions being engaged in disseminating civic education to communities (ii) Resources mobilized for increasing dissemination of civic education (iii) Number of community institutions adopting community driven development approaches leveraging funds from the government.

- Promote and scale up the use of community platforms with community self-managed, inclusive, and accountable economic institutions in the villages, with information, decision making power, and supplementary resources. Such institutions help communities to invest on demand driven pursuits under the slogans of cleaner village, greener village, self-sufficient village, peace in village, village with prosperity and reconciliation, etc., converging various line agency projects to the living and economic space of the micro economies.

Vision for 2030: Empowered, strengthened and formally organized communities manage resources effectively and actively in the path to progress

Indicators of results: (i) Community institutions operating with legal acceptance with over 80 per cent household participation and over 50 per cent women participation managing resources and implementing village development plans complying with rules (ii) Funds granted and regenerated by such organizations in implementation of plans and self-governance in collaboration with local government and private sector.

3. Sustainability Perspective – 2020 and Beyond

Inclusive, accountable and formally organized community institutions will be active in managing investments for the increasing income in 5,000 Grama Niladhari Divisions, adopting community driven development approaches addressing the priority needs of the bottom 40 per cent of the

population. This number will be increased to cover 10,000 Grama Niladhari Divisions (GNDs) by 2025 and all divisions will be covered by 2030.

A countrywide civic education campaign mainly focused on the communities undertaking community managed development will have coverage completed through specifically identified training institutions involving the local government by 2020, demonstrating scalability to cover the rest of the country by 2025 and 2030 progressively.

The Divisional Secretariats will play a key role in planning and coordination on development interventions, specifically integrating Samurdhi safety net interventions and other programs for sustainable management of resources complementing a more holistic approach for poverty alleviation.

Convergence of relevant government and private sector development interventions for providing basic and growing needs of the bottom 40 per cent of the population will be evidenced in the poorer and disadvantaged areas. This would cover 1,000 GNDs and communities through government and private sector investments and partnerships on improved supply/value chains of crops/products/services with growth potential for technology adoption on innovations, import reduction and/or increasing exports.

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T. CROSS CUTTING THEMES

T8. Reconciliation, Security and Peace⁸⁷

1. Current Status

National reconciliation, security and peace are critical to the achievement of sustainable development in Sri Lanka. Ensuring brotherhood and mutual trust between communities, as well as personal security provides the necessary foundation for lasting peace and sustainability. Reconciliation can also be reinforced and solidified through a successful development process that shares the common core principles of non-discrimination, gender equity and inclusion. Security is also an essential element of both personal and national development. Hence, reconciliation, security and sustainable development efforts are mutually reinforcing, with the success of one process inevitably reinforcing the success of the other and failure in one necessarily damaging the prospects of the other.

At the same time, the security parameters that shaped “defence” of Sri Lanka during the armed conflict and in its immediate aftermath have evolved in recent years. New and emerging challenges in the wider region and on the international scene, combined with unconventional threats with potential to cause instability in the internal and external environments, require diligent multi-disciplinary analysis and action. Civilian participation in policy development and in other measures affecting their lives is imperative.

The essence of Sri Lanka’s vision of national security, in the post-conflict era and in the lead-up to 2030, needs to be derived from an effective and judicious integration of inter-linked and interdependent principles of peace, human rights and development. While ensuring that human security remains at the core of it, reconciliation assures the enhancement of equity, inclusivity and respectability required for a united, secure, responsible, and forward-looking state.

The challenges that post-2015 Sri Lanka is faced with are diverse, intensive and complex. Responses to some of them like extreme violence and organized crime essentially remain in the realm of law and order. These challenges cut across ethnic, religious and linguistic lines. However, solutions to security issues arising from internal and external volatilities in the areas of food, energy, climate, health, nature etc., are linked to civilian and developmental dimensions that go beyond conventional national security. Responses to them squarely fall in the civilian domain, but with adequate civil-military cooperation and coordination. The UN global counter terrorism strategy, for instance, provides an integrated pathway to addressing the challenge of terrorism in all its forms and manifestations.

The goals of stability, prosperity and security are paramount and must be achieved through democratic control of all actors including security forces. Sri Lanka’s national security strategy needs to integrate all these factors into its policy calculus, thus entailing a comprehensive people-centred security strategy for the country.

⁸⁷ Writing Team: Mano Tittawela (Leader), Asanga Abeygunasekera and Mohan Munasinghe

The National Reconciliation Policy adopted by the Council of Ministers in May 2017 will serve as the guidepost of principles and the framework for reconciliation work going forward. The issues linked to reconciliation are analysed below (in Section2), within this framework.

Key issues and solutions relating to national security concerns are discussed in Box BT9.1, below.

Box BT9.1 National Security

In the post-war era, the new security environment is one in which Sri Lanka is faced with a host of non-traditional, emerging security threats whilst simultaneously dealing with security issues that stem from being a post-conflict society. Emerging security threats that Sri Lanka has to confront include those relating to maritime security, economic security, cyber security and transnational organized crime. Meanwhile, in the post-conflict context, Sri Lanka has had to address issues of national reconciliation (discussed in the main text), rehabilitation and resettlement of former LTTE cadres, ethnic minority rights, countering radicalization and violent extremism, and the threat of the resurgence of terrorism.

Sri Lanka's national security architecture must go beyond protecting the physical boundaries of the state and the physical security of its citizens. On this basis, the definition of national security that Sri Lanka utilizes should be changed.

Presently, Sri Lanka is on a trajectory towards becoming a trade, financial and services hub in the region. Sri Lanka's strategic plans for hub status, food security in terms of fisheries, resource mining in the Indian ocean and Sri Lanka's 'air/sea' Search and Rescue (SAR) zone all depend on a safe and secure maritime domain. At present, however, the lack of policies, deficiency in capabilities and inadequate synergy between key stakeholders (Sri Lanka Navy, Sri Lanka Air Force, and Sri Lanka Coast Guard) have made it difficult for effective monitoring of Sri Lanka's maritime domain.

Under the broad rubric of economic security, the area of foreign investment has been identified as an area for concern. Currently, Sri Lanka has no formal mechanism to evaluate the national security implications of large scale foreign projects in the country. As a result, a fear of domestic security vulnerabilities has at times prevented otherwise beneficial inflows of foreign investments.

Sri Lanka currently lacks a comprehensive cyber infrastructure making it vulnerable to severe damage in the event of a cyber-attack. In addition, there is no research and development into cyber issues and no adequate monetary investment on this front.

On Transnational Organized Crime (TOC), Sri Lanka is being used as a corridor for the illicit flow of drugs, human trafficking and smuggling of migrants, illicit trading of firearms, trafficking in natural resources etc. There have been many TOC networks operating between Sri Lanka's unprotected coastlines. This has been compounded by the fact that the region already holds a saturated arms market and technology that has allowed extremists groups to tap into these resources and thrive in the past.

Critical issues and solutions include the following:

- Terrorism and Radicalization – youth, religious and ethnic grievances leading to radicalization.
A multi-pronged strategy (starting with reconciliation, as discussed in the main text) that covers ethnic, linguistic and religious elements needs to be implemented. Major community engagement projects are required. Even though radicalization has occurred only within a small population, it is still on the rise.
- Maritime security – protecting our maritime border as an island nation.
Effective monitoring of Sri Lanka's maritime domain must be comprehensively implemented. Military hardware needs to be upgraded and existing maritime Intelligence, Surveillance and Reconnaissance (ISR) capability of the networked C3I (Command, Control, Communications and

Intelligence) capacities, naval and aviation capabilities, and operational capacities need to be evaluated and enhanced.

- Economic security – protecting our critical economic infrastructure

A *Security Review Provision* should be established under Sri Lankan law, to assess the impact of Large Scale Foreign Projects on national security which includes impact on domestic manufacturing and service capacity, the stable operation of the national economy, basic societal order, impact on living conditions, etc.

- Cyber security – defending against cyber threats to our critical infrastructure

We need to strengthen our cyber defence infrastructure through the introduction of a national cyber security strategy with inter-agency cooperation and cyber operation command centres. An inclusive inter-agency cyber task force comprising relevant government, private sector and civil society institutions should implement this cyber security strategy.

- Health security – reducing the incidents of infectious diseases and viruses

Health would be a component of upgrading national preparedness to meet emerging health security threats, starting with a focus on dengue. Initiatives should be taken to fund local research and development of medication to fight diseases. Encouraging universities and other medical research organizations and assisting them in areas such as securing patents and promoting research would be beneficial.

- Environmental security – mitigating natural and man-made disasters in the country and reducing the incidence of climate change

See Cross-cutting Themes: T1. Air Quality, Disasters and Climate Change.

- Energy security – reducing energy dependency and providing future sustainable energy security

See Sectors: S3. Energy.

- Transnational Organized Crime – eradicating the destination and transit routes of Sri Lanka for all forms of trafficking

Sri Lanka must implement a more stringent immigration policy and more effective border controls, supplemented by comprehensive training of border security officers and the police force. Collaboration with countries in the region must be improved to ensure regional security, including better monitoring and surveillance of Sri Lanka's maritime borders and coastal areas to stop the flow of illicit drugs, weapons etc. The equipment and training of navy, coastguard and air force should be upgraded.

2. Critical Issues, Impacts and Solutions (relating to Reconciliation)

2.1. High Youth Unemployment

2.1.1. Present Status, Issues and Problems

Prevailing economic conditions have not resolved the issue of high youth unemployment rates. Legacies of conflict and mismanagement have restricted development. Positive results have been achieved from infrastructure investment in the Eastern Province which can be replicated elsewhere, with additional emphasis on youth and the promotion of multi-cultural and gender-balanced work teams.

2.1.2. Likely Impacts and Consequences of the Problem

Economic:

- Reduced contribution to the economic growth by young people in the labour force.

Social:

- High levels of youth unemployment can lead to increased risk of violence and extremism.
- Likelihood of increases in petty and common crime

Root Causes:

- Weak economic conditions and low growth combined with a labour force that does not have the skills matching existing employment opportunities (linked to education and training).
- A legacy of conflict and instability in some regions leading to retarded development, limited investment and job creation
- Discrimination on gender, linguistic or religious grounds.

2.1.3. Remedies, Measures and Implementation

- Introduce pro-active measures to increase youth participation in the economy through full-time employment, (particularly when such efforts increase female participation in the work force and address underlying disparities in work-force participation between communities), to foster reconciliation and durable peace. Such measures simultaneously contribute to wealth creation and growth.
- Conduct accelerated infrastructure projects with special emphasis on multi-cultural youth participation.
- Introduce targeted interventions addressing multiple critical issues at once. For example, an acceleration of infrastructure investment in war affected communities can be paired with the recruitment of integrated youth work forces to bring members of different communities, who rarely interact in their daily lives, together.
- Engagement of unemployed youth in integrated, multi-cultural environmental projects such as tree planting or coastal climate change mitigation. This requires relatively low skill levels so engagement can be productive early on, while skills enhancement can be built in at subsequent stages.
- Conduct integrated skills training for youth, linked to real or projected demand in the labour market for Youth-led environmental projects.
- Introduce educational reforms including lessons in both official languages and English.
- Integration of a compulsory reconciliation curriculum in the national curriculum.
- Youth employment programmes, ideally linked with progressive educational reforms and the inclusion of a national reconciliation curriculum, can target under-privileged youth and youth from war-affected communities, while simultaneously being careful to include balance across communities so as not to create resentment or social jealousy.

2.2. State Institutions which are not efficient, have weak accountability and are not as inclusive as desired on either Gender, Linguistic or Religious/Ethnic Grounds

2.2.1. Present Status, Issues and Problems

Efficient, accountable, inclusive and clean institutions increase public confidence in the state and contribute to greater investor confidence. Citizens of all backgrounds have greater allegiance to a state represented by institutions perceived as fair, inclusive, clean and efficient, with respect for the rule of law. For example, police forces around the world have undergone reforms to better reflect the communities they police and to change the nature of their policing techniques to engage in two-way communication with communities. Currently, there also exists a gender imbalance in leadership roles in both the public and private sectors.

2.2.2. Likely Impacts and Consequences of the Problem

Economyic

- Inefficient and corrupt institutions erode the trust of both domestic and foreign investors, accelerate capital flight, and contribute to brain drain.
- Inefficient healthcare has an impact on public health which in turn has a negative impact on the economy.
- Inefficient management of Government resources and finances slows growth and poverty reduction efforts and so on.

Society

- Loss of public trust in public institutions.

Environmental

- Poor coordination and governance leading to environmental disasters such as the Meethotamulla land fill tragedy.

Root Causes:

- Endemic corruption
- Impunity for corruption and serious crimes
- Security forces overwhelmingly staffed by the majority after decades of conflict
- Language rights and policies not implemented

2.2.3. Remedies, Measures and Implementation

- Effective implementation of language rights and policies so that government services from policing to health care, to Courts are accessible in both official languages.

- Creation of effective institutions and programmes to foster reconciliation and long-term stability, e.g. Office of Missing Persons (OMP), a comprehensive reparations programme and a credible Truth and Reconciliation Commission.
- Introduce anti-discrimination legislation – such as that adopted in South Africa post-apartheid, to increase representation of women and minorities in national institutions.
- Continued strengthening of anti-corruption measures adopted since 2015.
- Increased representation of minorities in armed forces and police
- Increased representation of minorities in judiciary and greater accountability for all types of crime and corruption, particularly involving high level officials.
- A well-run Truth and Reconciliation Commission would make broad recommendations for institutional reform to ensure greater inclusiveness, accountability and fairness of institutions thus ensuring the non-recurrence of violence, while simultaneously fostering greater confidence in long-term stability and a better environment for investment and growth.
- Constitutional reforms could also play a major role in fostering reconciliation and economic growth as a consequence of greater investor and business confidence.

2.3. Gender (see also Section T3. Gender)

2.3.1. Present Status, Issues and Problems

Existing cultural norms and societal expectations have often leaned towards the discrimination and underutilization of women. Female workforce participation is low while the number of women in higher positions is also less. In the backdrop of a post war nation, women have often been one of the largest victim groups. Frequently their gender has been used against them either to punish and/or to discriminate. Cases of sexual and gender based violence and domestic violence are on the rise while the number of resolved cases remain alarmingly low. The underutilization of women in the workforce in areas such as academia and business among others, simply takes away a valuable and much needed contribution from half of the population. Sri Lanka can only benefit from greater gender equality and gender participation. Measures must be in place to promote the equality of women and protect their safety. This in turn will result in less violence in the home and elsewhere, and greater room for healthy male-female relationships, which will benefit the reconciliation process to a great extent. Greater and more equitable participation of women in the workforce will also accelerate economic growth.

2.3.2. Likely Impacts and Consequences of the Problem

Economic:

- Greater economic burden of the family on women in female-headed households not only in the North but also in other parts of the country.

Social:

- Existing cultural norms that are harmful to women must be challenged and transformed. Women have to be able to interact with the society as equal citizens with freedom and agency in order to fully achieve their potential and become effective citizens of the population. Gender inequality is not just a rights issue, it has an economic cost that is often ignored and which negatively impacts the society at large.

Environmental:

- Women play an important role in interacting with the environment and the natural resources that surround them. Gender comes in to play especially when the environment changes due to climate change and natural disasters, and both men and women need to adapt. Livelihoods that depend on the environment such as agriculture etc., are especially crucial when it comes to women's interaction with them.

Root Causes:

- A long history and culture of male domination has led to a skewed view of Gender, especially women and their roles in the society.
- Perpetuation of stereotypes within the education system.
- Discriminatory policies in the work place.
- A lack of cohesive engagement with issue of gender equality.
- Disproportionate impact on women and girls due to decades of conflict.

2.3.3. Remedies, Measures and Implementation

- Challenge stereotypes and gender discrimination within the education system at a young age
- Initiate and implement policies that are gender sensitive and inclusive within the work place.
- Reconciliation efforts should consider the role of women and their engagement seriously and provide unique platforms for engagement, including in the transitional justice mechanisms envisioned, namely the Truth and Reconciliation Commission, a reparations scheme, the Office of Missing Persons and an accountability mechanism.
- Transform structural shortcomings that create and perpetuate gender discrimination and violence.
- Refine and strengthen existing laws that protect women and provide access to justice, combined with effective implementation of such laws.
- Equip women to take on new and challenging responsibilities, especially in the face of dire economic situations, in areas worst-affected by the war. These women, along with other women in similar positions, comprise a significant part of the population and their effective interactions with the economy and skills development would be beneficial to the nation.
- Greater gender equality and education on gender will lead to better relationships between men and women and also reduce the level of gender based discrimination and violence.

2.4 Land

2.4.1. Present Status, Issues and Problems

Land has always been one of the most valuable assets one could possess, but sadly, has been lost by many during the protracted civil war in Sri Lanka. This has rendered many people in the North and East destitute and homeless, and despite many calls to the Government to remedy the status quo, land restitution remains a significant issue, although the majority of privately owned lands have now been returned. Military occupation of these lands in former war zones also contributes to a culture of fear and surveillance, and sometimes, a systematic undermining of civil liberties. Furthermore, tensions surrounding land issues lead to an increased risk of violence and hatred between various groups, which would undermine reconciliation efforts.

The return of land, relocation and rehousing of internally displaced individuals and de-militarization of former war zones serves as clear and tangible evidence of reconciliation, as well as a genuine political will to treat minorities as first-class citizens of the country. It also is good economics, providing opportunities for livelihoods and wealth creation for one of the poorest regions of the country in war-affected areas.

2.4.2. Likely Impacts and Consequences of the Problem

Economic:

- To many in the North and East, agricultural activities were a primary source of income and catered to self-sufficient communities. Incomes, autonomy and self-reliance would be direct benefits of land restitution. With the threat of war now over, civilians would be able to engage in their livelihoods, which collectively, would lead to regional development. Land-related work does not require technical or niche skills, and would be appropriate for unskilled workers who would otherwise have no source of income in these areas.

Social:

- The return of lands remedies issues pertaining to homelessness and poverty. It also creates a sense of economic and personal security, which in turn will help dissipate feelings of mistrust and antagonism felt towards the government and military. Military held lands could be used in agricultural and other projects, where the participation of all ethnicities can be encouraged, so as to foster a sense of community.

Environmental:

- Generating revenue and development through land is a labour intensive process, and the active and increased participation of more people will result in putting abandoned or un-utilised land to better use. The beginning of agricultural activities will lead to prevention of soil erosion, environmental degradation and an overall waste of land, which will have tangible benefits to the environment.

Root Causes:

- Appropriation of land belonging to civilians in the North and East as military occupation of these lands and homes continue long after the war has come to an end.
- Internally displaced people in former war zones have no knowledge of legal procedures (or absence of such procedures) that would facilitate restitution of land. This is compounded by the fact that many have lost deeds and other official documents that are required to proving ownership of land.
- Loss of livelihood stemming from loss of land. The sole source of income of many people in the North and East was from agricultural produce, and such appropriation of land has rendered many destitute.
- Development and other projects continue to be vested in the hands of the military, which robs locals of opportunities for development and sources of income.

2.4.3. Remedies, Measures and Implementation:

- Devolution of land power. Despite the passing of the Thirteenth Amendment to the Constitution, the power sharing model of Sri Lanka is yet to yield optimum results. Great authority must be vested in the hands of the Provincial Councils, so that a more context-specific and useful approach could be adopted with regards to the use of land.
- Restitution of all land held by the military in the North and East.
- Agricultural activities/ regional development programs which garner support of marginalised groups such as women, youth and minorities, as well as those from opposing political ideologies, would be helpful in fostering a sense of community and providing a space for all ethnic groups to work together towards common goals.

2.5. Language Barriers

2.5.1. Present Status, Issues and Problems

Language is a fundamental tool for communication and provides a means for ethnic integration and participation in Sri Lanka. It is known that erroneous language policies in the past have had a negative impact on both ethnic reconciliation and economic development in the country. Measures to increase the bi-lingual capability of Sri Lankans through education can nurture reconciliation, peace and long term economic growth.

2.5.2. Likely Impacts and Consequences of the Problem

Economic:

- The current economic conditions in Sri Lanka have not resolved the communication gap between different ethnic groups, and this causes instability across the country, which would have an impact on the long term economic growth.
- The opportunity to receive foreign investments is lost, especially from the Diaspora or India (Tamil Nadu) as their principal language is Tamil, and they currently would prefer to interact with North and East only rather than the Nation as a whole.

- Additional business opportunities for both major language groups have been created in areas where their language is not predominant. Some actions have been taken by the Government to address these issues, e.g. the launch of the translator service by the Office of National Unity and Reconciliation focuses on providing translators for any situations varying from administrative assistance, to basic translation services.

Social:

- The learning of both languages can be used as a primary tool to ensure attitudinal changes amongst the two communities and will help overcome cross-cultural barriers.

Environmental:

- By bridging the language barriers faced in Sri Lanka, the execution of policies related to the protection of the environment can be implemented in a timely and effective manner.

Root Causes:

- The conflict and instability in some regions led to division of communities.
- Lack of investment in developing bilingual/trilingual capabilities.
- Non-incorporation of both languages across the education of youth.
- Endemic discrimination both by the majority, and the minority with others in regions where the national minority is the majority.
- Resource constraints in both financial and human resources.

2.5.3. Remedies, Measures and Implementation

- Use the learning of both languages as a primary tool to ensure attitudinal changes amongst the two communities to create an understanding of all the cultures in Sri Lanka.
- Provide integrated skills training for the communities to learn both languages.
- Introduce educational reforms including lessons in both official languages and English.
- Ensure that public services and communications are available in both official languages.
- Recruit Tamil speakers in all Government services, including the police, especially where Tamil speakers are a majority.

3. Sustainability Perspective – 2020 and Beyond

3.1. Reconciliation

The National Reconciliation Policy adopted by the Cabinet of Ministers in May 2017 will guide the overall direction and emphasis of the reconciliation agenda. By 2020 the Secretariat for the Coordination of Reconciliation Mechanisms will have supported the establishment of key transitional justice mechanisms: The Office of Missing Persons (OMP); a truth and reconciliation commission (TRC); and an office of reparations will be fully operational by 2020, providing critical assistance to victims. The legal framework for a domestic judicial mechanism to deal with the most

serious crimes and atrocities of the past will be ready to be presented to the Parliament. The high unemployment rate of youth should be mitigated due to the increase in public and private mega projects. For example, the Megapolis project and Cinnamon Life project, combined with community based initiatives and investment in small and medium enterprises (SMEs). The opening of job opportunities will stimulate engagement and inter-community integration across the nation and will eventually also contribute to a participatory transitional justice and reconciliation process, which should reduce the risk of violence and extremism created by high youth unemployment.

During the past two years, the Sri Lankan government has focused on developing policies and Action Plans, which, in addition to the National Reconciliation Policy, includes specific efforts to address issues such as violence against women, empowering female headed households, women's entrepreneurship development, and institutionalizing gender mainstreaming. The positive impact of the implementation of these policies will begin to be felt by 2020.

Constitutional reform should contribute to greater investment and accelerated development in the provinces as well as acceptance of all communities of their full and equal place in a unified and democratic Sri Lanka, removing long-existing tensions and encouraging economic growth, security and stability.

The restitution of lands held by the military to civilians and the withdrawal of the military from business activities, will be close to completion by 2020. The satisfaction and opportunities gained by the restitution of lands and transfer of businesses to civilians should help communities to reconcile and can also create additional economic opportunities in impoverished regions, especially in the North and East, if well planned.

The government has taken important steps to give equal representation to the Tamil language in national life. By 2020 these measures will be in the process of being fully implemented in practice with the judiciary and police services, for example, being more accessible to Tamil speakers. Constitutional reforms are expected to further strengthen Tamil language rights contributing to greater inclusion and commitment to national goals.

By 2025 the impact of a serious national reconciliation effort, effective youth employment programmes, investments in education, gender equality and wise economic policy, combined with increasing respect for good governance and the rule of law in an inclusive, multi-cultural Sri Lanka, in pursuit of a clear national vision, will allow for Singapore-like stability, innovation and growth to take hold. This will set the stage for growing foreign and national investment, sustained GDP growth and improving social indicators across regions and communities, leading to greater social harmony and prosperity to 2030 and beyond. If the hard work of reconciliation is undertaken now the stage for a peaceful and prosperous future for all Sri Lankans beyond 2030 will be set. Without those efforts, we remain vulnerable to slipping back into conflict at worst, or to years of low growth, inequality, and poor, divisive governance at best.

3.2. Security

Security in the future will comprise of citizen-centric and state-centric security issues. While being unable to predict the longevity of the state structure in the international arena, we must align our security model to combat the emerging threats of the future. The ultimate aim is to have a dynamic security model in Sri Lanka that can evolve with the trajectory of the threats facing our nation.

2020

Given the current trajectory of the country, in 2020 it is likely that threats faced by our nation will be mainly non-traditional in nature. The institutional structure should be designed to pre-emptively combat such threats. *Total security* must be the security of the future, where Sri Lankans are safeguarded not only from physical security threats but also from economic, social and environmental security threats. In its approach to enhancing national security, Sri Lanka should invest in R&D initiatives to forecast the strategic future of the country. This will help to identify short, medium and long term threats, so that we are better prepared to address the challenges such threats pose.

Working towards creating a common Sri Lankan national identity by 2020, is essential for the country, especially in curbing the radicalization of youth. Radicalization is an emerging global threat and therefore, Sri Lanka must mitigate its effects locally so as to prevent xenophobia. In this regard, dignity and respect for all ethnicities, cultures and religions must be taught on an educational level in Sri Lanka.

2025-2030

In this time frame, Sri Lankan should be approaching security in a more holistic manner. Ideally, we would be addressing the following potential threats to Sri Lanka in the future: economic information warfare, cyber warfare (biometric authentication and privacy concerns), bio-war, agri-terrorism, radicalization and ethnic identity, and geo-political strategic concerns. A comprehensive Defence and Security Policy should be in place by 2025, drafted through a participatory mechanism with input from think tanks, the parliament and other relevant stakeholders.

By 2030 Sri Lanka would have achieved Indian Ocean hub status as a financial, maritime and services transitory point in the geo-political context. On this trajectory, Sri Lanka must navigate its position in the Indian Ocean- between China and India and balance all strategic interests in the country. The World Economic Forum⁸⁸ has predicted that by 2030 the world will be multi-polar and thus it is crucial that Sri Lanka incorporates this balancing-act into its foreign policy in the long term.

Furthermore, the CPEC initiative as part of China's "One Belt One Road" will influence trading patterns in the Indian Ocean. It will witness a large increase in the volume of trade between China and Pakistan. Sri Lanka must look to take advantage of these shifting trade patterns to increase its own trade in the region

⁸⁸ <https://www.weforum.org/agenda/2016/11/america-s-dominance-is-over/>

T. CROSS CUTTING THEMES

T9. Youth Trans-generational Perspective⁸⁹

1. Present Status

1.1. Youth Demography in Sri Lanka

The National Youth Policy defines Youth as the population between the ages of 15 – 29. The 2012 Census of Population and Housing estimated that 4.92 million of the population (approximately 23 per cent) would be within this age group in mid-2016. Youth are universally considered a demographic dividend that if properly harnessed into the labour force, can be a transformative and productive engine of growth. The National Youth Policy 2014, is based on the underlying framework of three areas: "to make sure that there is a conducive, supportive and equitable environment and opportunities for Youth to flourish (Ensuring Youth), to create conditions where Youth can be independent, creative, innovative and confident (Enabling Youth) and to strengthen Youth to participate and take responsibility on behalf of themselves, their community and humanity (Empowering Youth)". The Youth population in Sri Lanka is evenly spread across rural, urban, and estate regions with the latter having the lowest percentage of the three. The Youth population is also for the most part evenly distributed throughout the seven provinces (Ministry of Youth Affairs and Skills Development). Optimizing youth developmental is a priority, as Sri Lanka approaches the last stage of its demographic dividend. Scaling up of investments is essential to address youth issues like high levels of unemployment, limited access to sexual and reproductive and mental health services, and poor quality and disparities in education.

1.2. Education and Employability

According to the Department of Census and Statistics, the literacy rates in Sri Lanka are 98.5 per cent, 98.3 per cent and 97.9 per cent for the age groups of 15 – 19, 20 – 24 and 25 – 29 respectively. There is also a higher percentage of literacy amongst females and hence low gender inequality in terms of education. Available data on employment reveals that "the proportion of the labor force with at least O-level qualifications grew by 5.9 per cent over the 1992–2006 period and included an increase in those who were A-level qualified or degree holders. At the same time, the proportion of the employed with an education attainment of primary level or below decreased markedly (from 26.8 per cent to 21.0 per cent)" (Gunatilaka, Mayer, & Vodopivec, 2010). According to the Millennium Development Goals report on Youth (2014), over half of those surveyed for the study sought traditionally popular professions such as, doctors, lawyers, accountants, engineers, and teachers. However, according to Central Bank data, only 10 per cent of secondary schools offer science subjects for the Advanced Level examination. Almost one fourth of them are located in the Western Province. As a result, a large proportion of Sri Lankan undergraduates study in the arts

⁸⁹ Writing Team: Praveen Abhayaratne (Leader), Nilangi Kulasinghe, Rozanne Croos Moraes, Ranjiva Munasinghe, Sohan Dharmarajah, Buminda Jayasuriya and Harshana Hiripitiya.

stream. "This results in an oversupply of arts graduates and high unemployment among them, as they compete for limited jobs" (UNDP, 2014).

More concerning is the number of students that do not qualify for the Advanced Level examination (approx. 200,000) and for entry into University (approx. 90,000). Of those qualifying for entrance to University, about 100,000 are unable to receive a placement due to limited availability in State Universities. This amounts to close to 400,000 Youth that do not receive any form of higher education. The Ministry of Youth Affairs and Skills Development has established 17 institutions to address these shortcomings in the education system. The National Vocational Qualifications Framework, Technical and Vocational Education and Training (TVET) programs served close to 80,000 Youth in 2014[5]. According to the Millennium Development Goals report on Youth (2014), "the general acceptance of the country's TVET sector has been low due to poor recognition of the qualifications, low employability of the graduates, and the ineffectiveness of the course in catering to the demands of the market". According to the 2015 Labour Force Survey, outdated higher education curriculums, inadequate links between the higher education system and private sector, and the resulting mismatch of competencies to demands of the labour market, prevents Sri Lanka from making use of the opportunity to productively utilize the demographic dividend of Youth.

The recent employment rates by industry for Sri Lanka are 28.4 per cent in agriculture, 26.3 per cent in industry, and 45.3 per cent in the services sector, respectively. The Youth unemployment rate in 2016 was 21.6 per cent (UNDP, 2018). Youth who were not engaged in education, employment, or training in 2015 amounted to 734,550 individuals (Department of Census and Statistics, 2015). Based on data from the National Youth Survey of 2013 and studies conducted for the HDR 2014 showed that "Youth unemployment stems from a range of factors such as mismatched skills, limited employment creation in the formal private sector, aspirations misaligned with actual job opportunities, a lack of entrepreneurship, and deeply entrenched factors of class, ethnicity, and caste" (UNDP, 2014). There are regional disparities in how these factors affect Youth.

1.3. Governance and Policy

As highlighted above, Sri Lanka has a National Youth Policy-2014 and a number of agencies such as the National Youth Services Council, National Youth Corps, and the Ministry of Youth Affairs and Skills Development to address the needs and development activities related to Youth in Sri Lanka. The Human Development Report (HDR 2014) on youth and development in Sri Lanka importantly notes, "Sri Lankan Youth have often been the focus of public attention for their violence and political extremism. But a close analysis shows that they have also been at the forefront of highlighting some serious flaws in the post-colonial Sri Lankan state, its policy and society" (UNDP, 2014). Therefore, it is important to understand the views of local Youth in the context of implementation of long term policies that will have a direct impact on their lives. A consistent complaint shared during the focus group discussions conducted as a part of the National Youth Survey 2013 was "...the lack of policy implementation. They expressed disillusionment and cynicism regarding the possibility of change or transformation – a dangerous attitude, since it leads to both alienation and mistrust of the possibility of change through peaceful and democratic means" (UNDP, 2014). The same survey revealed that large proportions of Youth did not trust political parties, representatives, and public institutions. The National Youth Survey of 2013 revealed that political connections, family connections, and recommendations from professionals were important in securing employment in the public and private sectors. This requirement and the

efforts to conform to it perpetuates and increases a sense of discrimination amongst unemployed youth and those employed in the informal sector.

2. Key Issues, Impacts, Remedies

2.1. Increased Consumerism

The previous generation (those above 30 years of age), grew up in a world very similar to their parents, with one radio channel, two television channels, all three state controlled, and a fixed, wired telephone line to the house or closest payphone be it at the post office or the shop at the town intersection. Those below 30, grew up with multiple radio and television channels, a rapidly expanding and accessible mobile phone market, and location based access to the internet, all driven by vibrant private sector enterprise. In an age of information at our fingertips, where Internet access is now available throughout all major and minor population centers in the country, Sri Lankans of all ages have access to information of all types. While it exposes the youth to varying sources of politics, current affairs, technology, and popular culture, it also supports the spread of a culture of consumption and competition. Youth are increasingly aware and aspire to dress differently to their parents, have access to modern technological devices, travel and experience other parts of the country, eat different cuisine, are less reluctant to spend, and seek various forms of entertainment. As a result of labour migration, access to information and information technology, consumption patterns, social identities, and participation in economic activities are taking on characteristics of a modern industrial economy and culture. The key characteristic here that is relevant is the very basis of the conventional economic model, increased consumption. Consumption habits demand access to disposable income gained through regular wages, highlighting the importance of economic development and the corresponding employment opportunities for a demographic of over 5 million youth by 2020.

Post war Sri Lanka is fast transforming into a modern economy on the model of industrial economies, turning raw materials into goods for distribution and consumption. The agriculture based model that dominated the economy up until the 1980's, has been replaced by industry, commerce, and service sectors that now absorb much of the labour force, and account for a majority of economic activity. The expansion to, present and continued operation of supermarket chains, finance and leasing companies, and leading consumer brands, in every major town island-wide in the past eight years is testament to the rise in incomes, expenditure, and consumption habits of a new generation of Sri Lankans.

Young people do not have the ability to determine the economic system and how that development will materialize -- only to ask for it and vote for it. Nevertheless, it is not invalid to assume that Sri Lankan youth today will demand to consume in the same manner we do today or better, qualitatively. While we hope to nurture greater numbers of enabled, employed, and empowered youth, their consumption too needs to be accommodated both in terms of quality and quantity. This situation, when juxtaposed with the need for sustainable consumption and the threats resulting from climate change, presents a challenging situation.

Earth overshoot day, fell on the 2nd of August 2017, the day on which we consume the resource allocation of the earth for a year, and the earth's ability to regenerate and absorb the impact of that consumption. With such a trend of over consumption, how do we ensure inter-generational equality in terms of quality of life for future generations? It is now known that the western industrial model is inadequate for balancing social, environmental, and economic objectives of society (see

balanced inclusive green growth path explained in Introduction, Box B.1). Market forces have not been able to effectively transform resource extraction, production, consumption, and waste disposal in a sustainable manner. Yet, we continue to pursue development along this same model, and continue to promise youth a secure future.

If today's youth are to have a secure future, we need to embrace an economic model of development and growth that is not contradictory to what science and experience has revealed. A circular economy approach to development based on the carrying capacity of eco-systems is proposed here as the remedy to this situation.

2.2. Climate Change

Climate change is a household concept today, tangibly so for those living in rural areas, and especially for those that depend on predictable weather patterns for their livelihoods. Increased extreme weather events combined with dry areas become drier, wet areas becoming wetter, has been experienced throughout Sri Lanka in the last decade with greater consistency. However, as the intensity and uncertainty of climate change related events increase, and are experienced over longer periods of time, recovery of the agriculture and plantation sectors will be affected. Recurring drought and flooding will also affect water security in general. The inherent risk to the tourism sector in such a situation is also considered. This combined effect of food and water insecurity can have a debilitating impact on the economy and the well-being of Sri Lankans in general and youth specifically. Youth employed in the agriculture, plantation, and tourism sectors will be affected by fewer job opportunities and stagnant or decreasing earnings in such a situation.

The current understanding and studies on the impact of climate change in Sri Lanka needs to be incorporated into development planning in all sectors. The agricultural sector, land use, and food security concerns should be considered priorities.

2.3. Rural and Urban Migration

While Sri Lanka's population remains primarily rural based and engaged in agricultural activities, except in the Western province, many rural Youth migrate to urban areas in search of temporary and permanent employment opportunities. Subjective examination of data reveal that much of the younger population combine industry and service related employment opportunities with agricultural activities to achieve basic income targets. Many rural Youth migrate to larger cities, primarily in the Western province to work in the construction industry, as the opportunity arises. They return to agricultural activity as and when needed but do not rely on it as their primary income source, rather, as their source of household food security. These forms of urban migration are resulting in a lack of permanent and skilled labour in the agricultural sector and an unreliable labour pool in the construction and services sectors.

Unplanned urbanization can put tremendous pressure on infrastructure, basic services, land, housing and the environment. These congestion forces lie at the heart of Sri Lanka's uncontrolled urbanization. Hidden urbanization stems from official statistics understating the population living in areas that have urban characteristics but fall outside of municipal borders.

The World Bank states, "The official statistics of urban population in Sri Lanka is 14 per cent to 18 per cent - but if you look at the agglomeration, it is (actually) around 47 per cent".

Dealing with the complexities of urban migration requires a cross-sectoral approach that complements national development objectives in respective sectors. For example, temporary migration of unskilled labour to urban areas as a result of low incomes in the agricultural sector is commonly due to climate change, water insecurity, animal-human conflict, and market distortions. This situation affects economic growth potential as well as national food security.

The quality of urban spaces, structures, and improved connectivity with and in between urban areas must be managed. Land and housing policy reforms should ensure space for affordable housing while fostering innovative housing finance to allow better access to everyone.

Remedial measures need to incorporate climate change adaptation strategies, incentives for retaining youth in the agricultural sector, national food security strategies, ecosystem based land use management strategies, and water resources management.

2.4. Pollution

The outcome of increased economic activity in terms of production and consumption is waste. How we manage pollutants that are released into the air, land, and water, determines the health and quality of life for future generations. Recent reports have ranked Sri Lanka among the top countries that contribute to ocean pollution from plastic waste. There are many pollutants that escape into the soil and water on land that cannot be effectively monitored or regulated by the Central Environment Authority. The release of raw sewage, garbage, and industrial waste from isolated population centres and factories located outside of industrial zones into rivers, streams, and the ocean, are one such example. Electronic waste that is collected in various dumping or collection centres pose another growing hazard.

Sri Lanka also ranks in the top consumers of chemical agricultural pesticides and fertilizers per capita. The most telling symptom of the resulting pollution of water and soil is in the epidemic faced in the North Central province of Chronic Kidney Disease (CKD). Farmers in the Central province are known to use the greatest quantities of fertilizers to feed a soil that has good physical characteristics but is infertile chemically and biologically dead. The phasing out of the fertilizer subsidy and promotion of organic fertilizer as the alternative is an important policy that the Government of Sri Lanka recently implemented. Nevertheless, many farmers continue to rely on chemical fertilizers and pesticides that are available in the market. The loss of topsoil due to erosion, mainly from intense precipitation and flooding that affects land cleared of its natural vegetation compounds the problems faced with soil.

In order to deal with issues arising from solid waste generation and pollution, related policies and national strategies need to be implemented effectively and without delay. Solid waste management plans for the Western Province for example have been in place for over a decade but not implemented due to various political and community based pressures. The capacity of the Central Environment Authority needs to be increased in order to address, monitor, and regulate increasing sources of electronic and industrial waste.

The implementation of the organic fertilizer promotion policy needs to be matched with more broad based application and development of organic agriculture techniques to prevent soil and water pollution as well as to rehabilitate degraded agricultural land.

2.5. Private Sector and Education

The private sector is considered the major driver of economic growth in a country. For private sector growth to be competitive, regionally and globally, it requires a labour force that is educated, skilled, and empowered to be innovative. The mismatch of Sri Lanka's educated youth to private sector labour demands is mentioned in the introduction of this chapter. A majority of university graduates passing out with arts related qualifications are unsuitable for private sector employment and hardly cater to private sector demands. Graduates that excel in engineering and medical fields often find employment opportunities outside the country given the lack of opportunity to use advanced skills and knowledge in the local economy. Furthermore, Sri Lankan parents have a traditional mind-set of certain professions that they perceive as superior over others. At the end of secondary education once children fall short of the requirements to study for those professions they struggle with finding another career path. It is important that both parents and youth be made aware of the dynamics and opportunities of labour demand. Well thought out career guidance given at the school level is necessary. It will allow the youth to identify what they want to pursue as their career and what they gain by them.

The shortage of competent professionals in the labour market and the high number of school leavers who get introduced to the labour force without any professional competencies is another area of concern. While the private sector is willing to pay good salaries to competent and qualified labour, the education system does not cater to this demand. Curriculums in schools need to be redesigned to produce individuals with both practical and theoretical knowledge. Advanced level curriculums can be redesigned to prepare students to select their vocation when they leave school. Despite existing vocational training institutes, there is no constituted procedure to get the students who leave school after their Advanced Level examination to access vocational education streams.

Information Technology (IT) and garment manufacturing are the only sectors that have proven to be globally competitive. However, educational curriculums at all stages are far behind in catering to the demands of these sectors or other growth sectors such as eco-tourism and green technology. The private sector is currently involved with universities promoting innovation and technology. However, ad hoc policies regarding such programs and the lack of political will to see such projects through completion, discourages increased private sector engagement in these programs. For Sri Lanka to achieve socio-economic transformation that is consistent with the UNs Sustainable Development Goals (SDGs), the investment in a skilled, dynamic and empowered youth begins with an educational curriculum and system that complements and drives such transformation. While the private sector should actively play a role in promoting innovation and in identifying and promoting new technology, the education system needs to provide and nurture youth with the capabilities required to do so.

Sri Lankan Youth deserve quality education that leads to learning and skills that are relevant to their lives, and gives them the capacity required for the country's changing labour market. Higher education and vocational training opportunities must be provided for students that do not achieve the necessary marks to enter into Government sponsored higher education. Special loan and scholarship schemes should be introduced to the less privileged to receive higher education.

The education system should be geared to churn out a performance-based culture driven by technology and innovation in graduates.

Proactive promotion of the English language in the education sector where all youth have the opportunity of learning in English both as a link language and the language of choice in the private sector globally.

Sri Lankan companies that are at the cutting edge of information technology and innovation should pioneer technology transfers. Intellectual property laws must be reviewed and changed in a manner that supports and promotes innovation & technology in Sri Lanka.

2.6. Agriculture and Food Security (see also Section S1, on the same subject)

While agriculture plays a prominent role in our economy, seeds and clones that are currently being used are those that were developed in the 1970's and 1980's. These clones have now reached the point where their productivity and resistance to diseases is a serious concern. Rice seed varieties that have been developed locally have isolated productivity and ignored nutrition and resistance to climatic changes. Furthermore, many of the seeds used in the vegetable and fruit sectors are imported varieties.

The World Food Summit in 1996 defined food security focused on "all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life". In 2017, a National Strategic Review of Food Security and Nutrition was carried out and it was noted that "Another important way to address the combined issues of food security and climate change is to ensure investment on disaster mitigation and climate adaptation that includes bridging the information and communication gap between farmers and policy makers, which is lacking at present". The writers of this report did recommend that agriculture based entrepreneurship is promoted to increase youth participation and develop the small-scale agricultural business areas as a strategy to maintain employment opportunities in the agricultural sector. As per the 2013 Youth survey, it was highlighted that despite food availability and security, there was a lack of information in terms of balanced diets and nutrition within younger age groups. Concerns regarding food security are further compounded by urban migration and a complex poverty cycle affecting the agricultural sector.

Improved national research and development programs should be carried out to identify seeds and clones for agricultural products that can generate higher yields, nutrition, and improved resistance to disease.

Sri Lanka has a rich diversity and tradition of consumable fruits and vegetable varieties that can be expanded in the local market and introduced to export markets.

Water security, climate change, and impacts of poorly planned and regulated land use practices are underlying issues that need to be considered in a national strategy to revive the agricultural sector and achieve food security. It is also important to ensure that necessary measures are taken not just to ensure food security, but necessary planning done to ensure the continued availability and accessibility to a balanced diet.

2.7. Governance (see also Section T3. Governance)

Once youth have identified what change they want, they seek it proactively, and have proven to be the catalyst for change worldwide in the post-world war era. The opportunity in this characteristic of the youth demographic is that the change they seek can be a driving force for implementing the SDGs on a national scale. If Sri Lanka is to embrace the Agenda for Sustainable Development and

implement the strategy to achieve the goals, a paradigm shift is required in how we understand what development is, how it can be achieved, and how it should be implemented.

While the Youth of Sri Lanka are highly engaged in developing and building a modern economy, they are not the masters of it, but the inheritors of the path to development that we leave in place. Without proper government leadership, government communication, and inclusiveness in related processes, the youth would be forced to react to symptomatic manifestations of unsustainable development such as unemployment, economic inequality, inadequate disaster response and mitigation measures, and food security. Importation of labour from Countries that have free trade agreements with Sri Lanka will exacerbate the frustrations of Youth in the current economic climate.

In order to harness the demographic dividend of Sri Lanka and the potential of its youth, it is necessary that the government plans for sustainable approaches to development be implemented. To date, several national initiatives have been launched on sustainable development. However, it is essential that these initiatives align adequately with the SDG's across the government. In order to do so, government policy and programs must be coordinated and aligned to ensure effective delivery and implementation, without redundancy and duplication of between ministries and authorities.

3. Sustainability Perspective – 2020 and Beyond

The issues and corresponding remedies presented in the previous section collectively require an inter-related, cross-sectoral, and aligned strategy in order to be effectively implemented. Such a holistic approach would be ideally measured through the SDGs. The desirable status for 2020 and beyond from the trans-generational perspective of youth would then be a nation that is committed to achieving the national targets for the SDGs. In endeavouring to do so, the commensurate government actions and interventions should be based on sectoral national strategies that are aligned to creating a circular national economy based on the carrying capacity of Sri Lanka's eco-systems. Adopting an eco-systems based approach will allow prudent, efficient, and strategic use of Sri Lanka's natural resources that can guarantee inter-generational equity.

3.1. Circular economy

With Sri Lanka's commitment to achieve the SDGs, the complexities involved in achieving them within the existing economic and governance systems, and the challenges faced by the youth of Sri Lanka and corresponding remedial measures prescribed in the previous section, there is a case for circular economy principles to be applied in Sri Lanka. The application of such principles requires us to; a) rethink current consumption of products and services, favouring access over ownership; b) reuse materials through exchanging, cascading and recovering raw materials throughout their lifecycle; and c) redesign waste out of the industrial economy – designing goods and services that can be easily broken down and transformed, or designing business models which minimise the need of physical demand for goods in the first place. As Sri Lanka becomes more integrated in the global economy, we are well poised to adopt circular economics. Doing so requires that Sri Lanka considers economic planning as a holistic exercise based on all our resources, not separated by industry and scale. Such an approach requires adequate consideration of our environmental resources and carrying capacity of our eco-systems. The inter-relatedness of climate change, over-consumption and degradation of natural resources, agricultural output, food security, water security, industrial output and trade, employment, and education has been addressed throughout the discussion of this trans-generational perspective. The only way in which this inter-relatedness can be captured and optimized is through a circular economy approach.

While in industrialised nations the focus in building the circular economy is through optimising existing systems, in developing markets such as ours, it may manifest through sustainable development of nascent industries or enabling fairer distribution and access to resources. Leading companies are taking a systems-level approach to designing our waste – indicating imminent pressure from the developed world to integrate sustainable practices in developing market production systems. International concern over dwindling resources is likely to continue rising. Measuring up the opportunity to the challenges, it is clear that adoption of the circular economy in developing markets will require multi-faceted levels of support – from investors, government, business and civil society. With the benefit of hindsight, Sri Lanka can learn from past failures of the linear model, helped by a surge of interest from leading global corporates.

3.2. Youth for Sustainable Development

It should be kept in mind that historically and in an evolutionary sense, Youth are not satisfied with the status quo. Youth expectations far exceed the typical apathy of the general population that accepts that change takes time. Youth of any nation, want to do better than the previous generation, avoid and correct the mistakes of the previous generation, and secure a future that is less uncertain than the one they matured into. Youth drive innovation, fashion, and social revolution. They are commonly accepted as catalysts and agents of change. Therefore, it is important to prioritize investments in young people, to maximize their potential contribution to sustainability, peace and security in Sri Lanka.

Securing a future where youth are empowered, enabled, and opportunities are ensured can be done best by striving to achieve sustainable development goals. Given the role they play in future society and the size of their demographic representation, Youth should be considered fundamental investment for the successful implementation of the SDG's.

The paradigm shift that is expected will embrace, institutionalize, and socialize sustainable development values, based on technology and modern science that builds on traditional knowledge, practices, and cultural values that are still relevant and important. Therefore, the national strategy for sustainable development would be both adequately futuristic to be a radical enough change that youth can accept, but grounded in reality to be practically achievable. The youth of Sri Lanka would not be expected to lead or drive a national strategy for sustainable development, but if properly harnessed, the potential of Sri Lankan youth will be a dynamic and productive engine for achievement of the SDG's.

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R - RECOMMENDATIONS AND CONCLUSIONS

R. RECOMMENDATIONS AND CONCLUSIONS

R. RECOMMENDATIONS AND CONCLUSIONS⁹⁰

In this section, we begin with an overview of the report. Next, we summarize the main recommendations and national vision achievable by 2030 - provided that those recommendations are effectively implemented. The recommendations and vision are broken down in terms of the clusters, sectors and cross-cutting themes. Only a limited number of key recommendations are summarized here, in order to help decision makers focus on the main priorities. The main text contains more details and additional recommendations relevant to each area.

RO. OVERVIEW

The Sri Lanka National 2030 Vision is a strategic document that seeks to interpret and flesh out the vision which H.E. President Maithripala Sirisena outlined on 2 January 2017, when he gave the mandate to a Presidential Expert Committee (PEC) to prepare such a report. It responds to the 17 Sustainable Development Goals (SDGs) and 2030 Agenda universally accepted in 2015 by UN member states. In President Sirisena's vision, by 2030 Sri Lanka will become a sustainable, upper middle-income Indian Ocean hub that is economically prosperous, competitive and advanced; environmentally green and flourishing; and socially inclusive, harmonious, peaceful and just. Expanding on this vision, the report describes a practical pathway to reach such a sustainable future by 2030, including sustainability perspectives in the intermediate years 2020 and 2025.

The PEC report is the first attempt made to set out in a single comprehensive and integrated document, Sri Lanka's current country profile and status, key issues and opportunities relating to sustainable development, future priorities and targets, and new initiatives and options to achieve ambitious goals by 2030. We have sought to describe the strategic national sustainable path based on Balanced, Inclusive, Green Growth or BIGG, in simple and clear language, to inform the President, empower the people and provide guidance to the Government, civil society and the business community.

The report reflects certain limitations imposed by our mandate, as well as time and resource constraints. First, this report is not intended to be a detailed national development plan -- to avoid duplicating the work of other branches of Government who are already carrying out that task. We use existing national, sectoral and other plans and data, fitted within a consistent and comprehensive long term conceptual framework. Second, some of those other planning documents are not necessarily fully consistent with the BIGG path we propose. It is not within the PEC's mandate to revise those plans, but our key recommendations provide guidance on how other national, sub-national and sectoral plans may be brought into alignment within the BIGG path. Third, we have not been tasked specifically with implementation. However, the lack of success in

⁹⁰ Writing Team: Mohan Munasinghe (Leader) and PEC

executing past strategies and policies obliges us to put down some ideas on this key topic. Fourth, we use a simple baseline projection, without extensive macro-scenario analysis. Thus, our base case assumes an average 5-6% GNP growth rate, and 1% population growth rate up to 2030, and our results are robust over a range of values around this baseline (eg., GNP variation +/- 1%). Furthermore, some key scenarios are explored at the sector level (eg., worst case disasters affecting agriculture), to provide strategic guidance on risk management.

The BIGG pathway follows the Sri Lankan tradition of the middle path. To re-iterate, we are working towards a people-oriented and open socio-economic system, which is based on democratic and pluralistic institutions; is able to protect our ethical values, heritage and environment; and is built on respect for freedom, justice, equal opportunities, and human rights. Inspired by the ennobling elements of the country's rich past, the three major groups (Government, business, and civil society) need to be disciplined -- to play balanced, cooperative and effective roles within this framework.

We acknowledge gaps in the report and room for improvement. Therefore, we recommend that this draft be reviewed through a nationwide consultative process, to further build the consensus on and ownership of policies and measures that will guide the development of improved national, sectoral, sub-national and local plans. In particular, it is not possible to completely anticipate future shocks, as we progress towards a multi-polar world, with new economic threats, disruptive technologies, unexpected disasters, social unrest and ultimately, climate change. The 2030 Vision strategy should be updated at periodic intervals in the future, based on new information and experience gained along the way. Such a process will ensure a robust and flexible strategy based on a multi-focal vision aimed at the short (2020), medium (2025), and long-run (2030) future. The ongoing work on SDGs, appropriately prioritized to suit Sri Lankan needs, may be used as a helpful monitoring framework for progress, although it will take time to identify all the relevant indicators and targets. The implementation of the 2030 Vision will also require substantive improvements in national statistical capacity, especially to strengthen disaggregated data gathering and analysis.

The nationwide, inclusive, consultative process that we recommend to improve this report, will build a consensus and wide ownership, ultimately facilitating successful implementation. Such a process must be led by H.E. the President. It is neither within our mandate nor our intention to elaborate on this process. However, we suggest that the other branches and institutions of Government need to be brought in early. The strategic recommendations in the PEC report should be aligned with and fleshed out with more detailed plans and policies of other ministries and institutions. In particular, it would be logical and simple to begin with several ongoing initiatives already falling under the guidance of H.E. the President, including:

National Programme for Food Security Assurance

National Programme for Environment Conservation

National Programme for Alcohol and Narcotics Prevention

National Programme for Chronic Kidney Disease Prevention

National Programme for Sustainable School Communities

Gramashakthi People's Movement for Poverty Alleviation

"Daruwan Surakimu" National Programme for Child Protection

More quantitative and detailed targets will be needed in key areas at the national sub-national and sectoral levels, that could be monitored by H.E. the President and other decisionmakers. Improved

governance is essential for effective implementation, and secretaries of key ministries should lead the effort.

There should be dynamic interaction with Parliament, the Judiciary and ongoing constitutional initiatives. The business community and civil society also have a vital role to play in both the consultative and implementation processes. The PEC team members who are fully conversant with the range of sustainable development topics, stand ready to assist in this next phase of Sri Lanka's journey towards sustainable development.

R. RECOMMENDATIONS AND CONCLUSIONS

RC. CLUSTERS

RC1. Economy

RC1.1. Key Action Recommendations

- a. Strengthen fiscal consolidation and improve tax collection efforts and adopt prudent monetary and exchange rate policies to achieve internal stability
- b. Increase export earnings and FDI flows to achieve external stability – through supply-side reforms that improve export competitiveness, and a strategic approach to trade agreements. Urgent measures are also needed to manage high levels of debt.
- c. Promote sustainable agriculture through productivity improvements to address persistent poverty in the rural sector
- d. Rationalize wasteful expenditure, particularly by ensuring the precise targeting of social welfare programmes for poor households
- e. Create more job opportunities (especially for women and youth), to address inequality concerns and make growth more inclusive, coupled with increased skills development, and for women, cultural acceptance of their work outside the home/community and better child care facilities.
- f. Provide better opportunities for the growing senior citizen population to contribute their experience for sustainable development and improve their retirement social security safety nets.
- g. Continue with ongoing efforts to review and restructure strategic SOEs, by strengthening professional management and accountability, and minimising political interference – the focus should be on efficient performance of the SOE, rather than on ownership (i.e., public or private).
- h. Improve *Doing Business* indicators – specifically with regard to enforcing contracts, paying taxes, registering property, and getting credit – to improve economic efficiency
- i. Enact and enforce necessary legislation to promote transparency and accountability and thereby minimize corruption

RC1.2. Sustainability Perspective

The current policy framework of Sri Lanka is shaped by the overall vision of development of the Government presented in "The Five Point Plan: A New Country in 60 Months" in 2015. The five goals of development under the Five Point Plan (FPP) include: (1) generating one million employment opportunities; (2) enhancing income levels; (3) development of rural economies; (4) ensuring land ownership to rural and estate sectors, the middle class and Government employees; and (5) creating a wide and a strong middle class (Department of National Planning (DNP), 2016). These goals are reiterated in the Government's latest "Vision 2025" policy document⁹¹ released in September 2017, which spells out a course of reforms to make the country more competitive and

⁹¹ Vision 2025, Min. of Finance, 2017, Govt. of Sri Lanka.

raise all Sri Lankans' standards of living. The goals presented in these policy documents share many similarities with the SDGs, thus holding promise for achieving sizeable economic progress in the coming years.

In the context of the current economic status and problem areas (as discussed under each critical issue) and the policy agenda of the Government, the DNP has identified several measures that the country intends to adopt in meeting specified targets, most of which are echoed in the Vision 2025 document. Table 1 below provides an overview of recommended short to medium-term measures to be taken for different indicators of economic prosperity, and the current and likely situation in 2020 and beyond.

Table 1: Achieving Economic Prosperity: Measures, Current and Likely Future Status

Goal	Indicator	Proposed Measures for Meeting Targets	Status in 2016	Targets set for 2020 ⁹²
SDG 8/ FPP1/FPP 2/FPP3	GDP growth rate	Promotion of decent job creation, improving labour productivity through skills development, developing a pension scheme for all workers by amalgamating existing schemes, enhancing skills of migrant workers, and exploring new markets	4.4 percent	7 percent
	GDP per capita		USD 3,835	USD 5,797
	Public Investment	A focus on public social and economic infrastructure projects, while creating space for local and foreign private investors to invest in directly productive and profit-oriented ventures	5.2 percent of GDP	5.7 percent of GDP
	Private investment		25.1 percent of GDP	25.8 percent of GDP
SDG17	Budget deficit	Reforms relating to coverage, compliance and tax administration to increase Government revenue, and rationalizing Government expenditure through reduction of waste and elimination of corruption	-5.4 percent of GDP	-3.5 percent of GDP
		Encouraging export product specialization and market diversification		
		Implementing trade facilitation commitments, phasing out various para-tariffs, and reviewing and renegotiating existing FTAs and entering into new FTAs with dynamic Asian economies		
	Current account balance		-2.4 percent of GDP Exports worth USD 10 billion	2.2 percent of GDP Exports worth USD 20 billion
	FDI	Improving the business regulatory and operational environment by restructuring regulatory institutions, moving towards a low tax and tariff business environment with simplified and transparent administrative procedures, identifying and removing delays	<i>Doing Business</i> rank 110	Reach rank below 70

⁹² Targets of Department of National Planning

		and complexities in obtaining land leases, and integrating SMEs into the formal sector		
SDG9/ FPP3				
	Infrastructure	Creating an efficient transport network connecting large and emerging cities, townships, economic centers and rural hubs		Better road network
		Increasing public transport contribution to passenger movement	58 percent	65 percent
	Innovation	Increased investment in technology and innovative research	Rs. 3,195 Mn	Rs. 4,961 Mn
SDG1/SD G2/ FPP2	Agricultural productivity	Investments in the National Food Production Programme, establishment of agricultural mega zones, strengthening of value chain development, establishment of an Agricultural Marketing Authority, establishment of the Agriculture Modernization Authority, formation of farmer centric large scale agro organizations and cooperatives, and promotion of private sector participation and PPPs to modernize the sector	Rs. 11,680 Mn	Rs. 18,135 Mn
	Resilient agricultural practices	Investments in crop production and improvement to promote new hybrid and high yielding varieties of crops	Rs. 2,779 Mn	Rs. 2,976 Mn
		Investments in seed and planting material to establish seed cultivation farms	Rs. 480 Mn	Rs. 913 Mn

Source: Department of National Planning, 2017, *Public Investment Programme 2017-2020*

Vision 2025 also reiterates previous pledges to increase direct taxes, increase public revenue to 16 percent of GDP, and allow a floating exchange rate. Additionally, through fiscal consolidation efforts involving a forward-looking liability management strategy, it is hoped to bring the debt-to-GDP ratio down from the current 79 percent to 70 percent by 2020. Ongoing trade negotiations with India, Singapore, and China will continue, along with a trade adjustment program – including the enforcement of anti-dumping laws – to lessen competition impacts on domestic firms.

Making scientific forecasts for the future is however a challenging task, given the prevailing uncertainties in the current economy. It is important to monitor progress regularly and take necessary corrective action if any of the indicators are not on track to achieve the desired targets. It is also imperative that Sri Lanka integrates its economy closely with the global economy through strengthened trade and financial relations to maximize the chances of realizing the set targets. A simultaneous focus on providing adequate safety nets to safeguard the poor and vulnerable will help in ensuring that growth is inclusive, as recognized in Vision 2025. Also essential are reforms in fiscal, trade, investment and labour market policies (as discussed in previous sections) – to

remove existing impediments to achieving higher rates of economic growth that will eventually take the country to upper middle-income status.

Under a more realistic and conservative economic growth estimate of around 5 percent, GDP will increase from the present USD 81.3 billion (USD 79.7 billion in 2010 constant prices⁹³) to USD 124 billion in 2025 and to a further USD 158 billion by 2030. Assuming a constant population growth rate of 1.1 percent in the coming years, Sri Lanka will cross the USD 5,000 per capita GDP mark in 2024, reaching a per capita GDP of USD 5,285 by 2025, and USD 6,386 by 2030⁹⁴.

In 2025, such a growth trajectory would place Sri Lanka at a level comparable to that of present-day upper middle-income countries such as Thailand in Southeast Asia, Fiji in the Pacific, South Africa in the African region, and Colombia in South America. Sri Lanka's per capita GDP level in 2030 would be similar to that of the average of countries in the East Asia and Pacific, excluding high income countries. Sustainable development issues and prospects in those countries would provide useful pointers to the kinds of economic problems Sri Lanka is likely to face in 2025 and 2030.

RC2. Environment

RC2.1. Key Action Recommendations

- a. Implement urgent short, medium and long-term measures to reduce vulnerability to disasters (eg. droughts, floods, landslides) and adapt to climate change.
- b. Take early action to prevent air pollution due to heavy traffic congestion in major cities and introduce smart and sustainable transportation systems including non-motorized transport, electric vehicles and electrically operated public transport systems.
- c. Implement participatory approaches to control deforestation and increase forest cover, and reduce soil erosion, land degradation and enhance soil fertility.
- d. Introduce environment friendly waste disposal methods.
- e. Preserve ecosystem services and improve ecosystem health, and minimize adverse impacts on human health (like CKDU and dengue), by reducing water pollution from all sectors, especially industry, agriculture, and waste disposal, through better enforcement of laws, regulation and pricing policy.
- f. Replace fossil fuel based power generation for national grid by using modern renewable energy and promote application of renewable energy in industrial and commercial applications. Reduce taxes on vehicles and machinery run on renewable energy - such as electric cars.
- g. Research and implement ideas about de-growth, bio-economy and circular economy, in all resource consuming enterprises to eliminate waste and encourage recovery of resources.
- h. Implement organic and biodynamic agricultural practices to reduce the use of chemical fertilizer and agrochemicals, to prevent long term health impacts and enhance soil properties.

⁹³ World Bank, 2017, *World Development Indicators*.

⁹⁴ These calculations are based on the standard compound annual growth rate formula. The future GDP level is given by: $x(1 + r)^n$, where x is the current GDP level, r is the GDP growth rate, and n is the number of years.

RC2.2. Sustainability Perspective

In 2030, with the implementation of the sustainable development agenda through SDGs and other national green policies, Sri Lanka seeks to enjoy a pollution free, clean and green environment with high quality of life for its people and inclusive green growth. Specific policies and efforts are needed to ensure that green growth is inclusive and that environmental sustainability is not achieved at the expense of greater equity and poverty alleviation.

With the vision to achieve sustained economic growth that is socially equitable and ecologically sound, with peace and stability, the country is moving towards a National Sustainable Development Strategy. As an extended effort to this, with special attention to climate change adaptation and mitigation, the country through the Ministry of Mahaweli Development and Environment recently promoted the Blue Green Development Strategy for sustainable development. Sri Lanka has several environmental initiatives and self-imposed targets which are positive achievements. The targets established through the initiatives by H.E. the President to make agriculture organic and increase the forest cover to 35 percent, and sectoral targets such as the use of renewable energy for generating 20 percent of electricity by 2020, the introduction of a campaign for solar based electricity supply for households and commercial buildings and net-metering, are key examples. There are many departments and institutions established for sound implementation of the policies and regulations at the national, provincial and local level.

However, there are fundamental obstacles that impede the achievement of the above goals, which need to be identified and rectified. The implementation of the policies and regulations has been weak due to various issues including very poor coordination and communication among the departments and institutions. This weakness has led to a waste of financial, physical and human resources without benefits to the country. Therefore, the country has to develop a clear mechanism to improve inter-departmental and inter-institutional coordination. This is a prerequisite for effective implementation of the policy framework. Further, it is required to mobilize the stakeholders for greater collaborations and cooperation in the development and implementation of the green policies and plans.

The country needs to mobilize all the public sector institutions to achieve these targets and obtain the commitment from the private sector and civil society to actively engage in the national programmes, through financial and non-financial incentives.

The key areas which need immediate addressing are health, solid waste management, agriculture and transport. To strive for a healthy nation, we have to ensure that our environment is clean. This has become a top priority. Management of solid waste has become a serious and urgent issue, especially in the urban areas. The engagement of the community through awareness, training and obtaining the support of Community Based Organizations (CBOs) and Non-Governmental Organizations (NGOs) for waste segregation at the point of origin, is going to be one of the major strategies for effective solid waste management. The trust built through engagement will motivate the community groups to assist in this key issue of solid waste management.

Use of technology to provide resource recovery from segregated waste can be done through the private sector. Providing incentives and green credit to SMEs will encourage them to start many recycling industries or even expand existing recycling industries for plastic, paper, rubber, textile, glass and metals. SMEs can start up compost and bio gas plants at a small scale, which can support the replacement of chemical fertilizer with organic fertilizer. The long-term solutions such as

sanitary landfills and waste to energy projects which need high investment and long lead times, can be introduced later if necessary for other types of waste.

The eradication of CKDu by having an effective interdisciplinary approach which takes on the perspectives of all the stakeholders in delivering a sound solution to the recipients, will ensure a safe and secure life for them. Encouraging the replacement of agro chemicals and chemical fertilizers through the use of natural fertilizers and bio dynamic farming practices will permanently eradicate future catastrophes such as CKDu.

Another major benefit from organic agriculture will be the reduction of water pollution from agricultural activities. To eliminate the impacts caused by the pollution of water bodies, stringent measures have to be taken. Introducing the wastewater discharge fee system - which has been delayed for the last fifteen years - will ensure that all business enterprises reduce the consumption of water and lead to a reduction of the discharged pollution load. Awareness creation at the school level on the preciousness of clean water and the need for the protection of it, will make all future generations act more responsibly. All water bodies need to be protected by having buffer zones, as prescribed by the relevant legislation.

A major contribution to air pollution is vehicular traffic. Planning for pollution free transport in the long term with long range transport systems can reduce vehicle congestion and air pollution. The Ministry of Megapolis and Cities has a long-term plan for changing the current patterns of transport. The short-term plans for dedicated lanes for buses, rapid bus transit systems, and building flyovers at key junctions will ease our traffic problem and reduce air pollution. Encouraging people to switch to electric cars and setting up solar charging stations through the provision of tax concessions and incentives to the private sector, will eliminate air pollution. Government strategies to discourage fossil fuel use for transport, industry and power generation through various financial and non-financial measures will further improve our air quality.

Implementation of zonal arrangements as per the UDA plan for siting industries, and setting up housing schemes and condominiums in commercial areas are going to be key requirements for effective land use. The implementation of green building guidelines for public sector buildings, the proposed green public procurement plan, and the development of eco villages are going to contribute to green economic growth with inclusive community engagement.

The environmental vision for the future is a clean and green country. The engagement of today's school children who are going to be future citizens, is of utmost important. Creating awareness, training and encouraging their involvement in environment related projects and activities will empower them to be champions of the change.

The 2020 Vision is to mobilize all groups including the public sector, private sector and especially school children, through awareness, training and motivation, and to initiate all actions as a step towards the 2030 vision.

RC3. Society

RC3.1. Key Action Recommendations

- a. Implement measures to reduce income inequality through a twin strategy of progressive taxation and enhanced social investments leading to a guaranteed minimum household income and social security for all.
- b. Manage the increasing trend towards casualization of work and the expansion of the informal sector, through appropriate policy and program interventions in order ensure greater income and employment security.
- c. Formulate and implement a comprehensive, multi-level program of reconciliation at national and community levels.
- d. Take measures to arrest the trend towards greater social inequality in terms of income distribution and regional disparities, in particular rural urban disparities. Reduce gender-based inequality.
- e. Public -private as well as rural and urban gap in healthcare, education, livelihoods and transport needs to be narrowed in order to create greater equity in life chances across social strata.
- f. Take measures to improve the professional quality and outreach of various targeted social services to empower marginalized and disadvantaged groups such as the poor, disabled, the elderly, mentally ill, etc.
- g. Strengthen the subsidiarity principle by empowering lower tiers of government, especially local bodies and take effective measures to facilitate citizen participation in governance and development.
- h. Strengthen the rule of law, ensure personal safety and reinforce the regulatory functions of governance at all levels, in order to stem the tendencies towards lawlessness, abuse of power and corruption. Take special measures to arrest gender based violence.

RC3.2. Sustainability Perspective

2020 is close. It is not realistic for us to expect a drastic change in the present situation within such a short period. On the other hand, if the appropriate policy measures and other interventions are introduced and implemented from now on, it is reasonable to expect some significant improvement by 2020. This is true with respect to most of the social issues discussed above. Our approach to addressing social issues should be multifaceted. In other words, a concerted effort must be made to address diverse issues simultaneously, not in a piecemeal fashion.

If a national, multi-sectoral action plan is developed and implemented, progress can be measured and monitored based on a set of indicators dealing with the social issues discussed in the report. Since some of the social issues are structurally rooted, significant change in the present situation with respect to such issues cannot be expected by 2020. Yet, it would be possible to achieve significant progress with respect to all indicators by 2025, provided rational policies and effective measures are put into place during 2017. Monitoring and measurement of progress can be greatly facilitated by a multi-agency platform that brings together all relevant agencies in order to share information and take follow up action. This platform would be housed in a national secretariat established for the purpose.

Even though it is not possible to provide data on the levels of achievement by 2020 with respect to social issues, it is reasonable to assume that significant progress can be made in the next three years in regard to policy and programme development and the commencement of their implementation. If these initial steps are taken without further delay, by 2025, impressive results can be achieved in relation to almost all the issues. For instance, absolute poverty could be eliminated and a substantial reduction in income inequality could be achieved by 2025, provided effective measures are taken to redistribute income through a progressive taxation regime.

The following conditions would facilitate the consolidation of social, economic and environmental gains made over the next decade or so, most probably helping Sri Lanka to reach the SDGs by 2030. The country needs to take full advantage of the emerging global development policy consensus, where social and environmental issues have been recognized as priority areas for national and global interventions. Those issues that have been clearly identified in this document can be addressed effectively only through evidence based public policies relating to taxation, human resource development, research and development, health, transport, social security, gender equality, social cohesion, etc. If state interventions are effected through multi-sectoral and multi-stakeholder action, by 2025, the country could become economically more developed and equitable, socially cohesive and just, and politically more integrated and responsive, ensuring greater social equality, peace, justice and ethno-religious harmony. Such conditions would encourage people to live contented lives, without being forced to leave the country in search of more lucrative employment and greener pastures elsewhere.

R. RECOMMENDATIONS AND CONCLUSIONS

RS. SECTORS

RS1. Agriculture and Food

RS1.1. Key Action Recommendations

- a. Enhance the capacity and the ability to better forecast seasonal rainfall and provide early warnings on extreme weather events using modern technology, and develop institutional arrangements to speedily respond to such early warnings.
- b. Develop drought tolerant crop varieties and cropping patterns which consume less water, labour and agro chemicals, and incentivize their adoption.
- c. Educate farmers on the need to conserve water and on the use of new technology for farming, value addition and marketing, with the aim of obtaining medium to long-term results.
- d. Enable farmers to overcome the scale constraint so that less water using crops can be produced, stored, value added and marketed profitably. This will facilitate the provision of effective credit, input supply and storage, as well as insurance, in a sustainable/commercially viable manner.
- e. Educate consumers at large, on better nutrition and appropriate changes in food habits. Consumption of less starch and sugar and increased consumption of fruits and vegetables, may be useful in reducing the present high dependence on water for agriculture.

RS1.2. Sustainability Perspective

2020

The domestic rice output for the year 2017 is estimated by the United Nations (UN) World Food Programme (WFP), to be sufficient for just over seven months. This is a sharp deterioration from a more or less self-sufficient position in the decade before 2016. As per the GDP calculations of the Department of Census and Statistics, the agriculture sector declined by 2.9 percent in the second quarter of 2017 despite a sharp improvement in tea prices.

If Maha 2017/18 is also below par due to continuing water shortages, the year 2018 is unlikely to be a favourable year for agriculture. As per the WFP, farm household debts have doubled over the last couple of years and the shortage of capital is adding to the negative effects on the sector. As there remains just one more year to reach 2020, the 2020 outlook in terms of domestic food availability, nutrition and farm incomes does not appear to be encouraging.

2025 – 2030

A sustainable positive outcome is achievable if the previously outlined five point action framework is implemented. The potential agriculture sector scenario beyond 2020 has to be seen in the light of the likely developments in the rest of the economy. With a less than 10 percent value addition to the GDP at present, agriculture cannot be the leading force in the economy. Nevertheless, it can become a much more productive and efficient sector, providing affordable nutrition to the populace in a sustainable manner while providing a high standard of living for those engaged in agriculture. Export agriculture covering both traditional export crops and non-traditional crops such as fruits and vegetables, flowers and foliage, can make a significant contribution to the sector if modern technology is used for growing and value addition.

The proposed development of megapolises and other urban centres, and the associated physical infrastructure development, will speed up the structural transformation of the economy. The resulting shift of labour away from agriculture will begin to reduce the pressure on sensitive eco systems and enable land consolidation. This will also encourage mechanization and increase capital intensity. The increase in disposable incomes all round as a result of overall economic development, can result in a shift of the demand away from rice to fruits, vegetables, fish and dairy products, encouraging diversification towards high value, less water dependent crops. However, all this cannot be assumed to happen automatically. A guided transformation is required. If not, the rural poor will suffer in the process. For the long-term sustainability of the sector, a heightened awareness of the potential impacts of technical barriers to trade as well as FTAs is required.

RS2. Education

RS2.1. Key Action Recommendations

- a. Ensure a country-wide network of high quality pre-primary education service delivery mechanisms, while providing children from low income households with publicly funded Early Childhood Care and Education (ECCE) services.
- b. Establish a better-articulated outcome based curriculum, integrating and embedding skills - cognitive as well as socio-emotional - which focus on the underlying objective that all children should be successful learners, confident individuals, responsible citizens and effective contributors.
- c. Improve teacher professionalism, standards and training in the use of modern teaching-learning methods.
- d. Support systematic reforms in the Technical and Vocational Education and Training (TVET) sector, particularly to match training supply with demand, by creating strong linkages between training supply end users and market demands.
- e. Diversify and modernize the curriculum of universities and other higher education institutions, in order to enhance social development and address present and future demands of local and international labour markets.

RS2.2. Sustainability Perspective

To ensure the sustainability of the strategic recommendations proposed for the education sector, it is recommended that a master plan be developed, identifying short-term actions for 2020, medium-term projects and programmes for 2025 and long-term programmes for 2030. Moreover, commitments of financial and other necessary resources through the national budget should be ensured for the sustainable implementation of the proposed master plan.

In keeping with the vision of Sri Lanka as an upper middle-income economy by 2030, the education system should be providing not only a basic standard of quality education for everyone (including adults), but also high-end educational opportunities for the most gifted students, using the latest technology, curricula and teaching methods available in advanced countries. Therefore, the cooperation and commitment of the political leadership, policymakers, technocrats and educators are essential to achieve the expected outcomes of this futuristic agenda proposed for the education sector by 2030.

RS3. Energy

RS3.1. Key Action Recommendations

- a. Implement rational plans, especially the scientifically derived and robust Long-Term Generation Expansion Plan.
- b. Mobilize funds for sector development through sustainable energy pricing policies and appropriate external financing. Demand management and conservation should be a priority.
- c. Carry out regular upgrades of the transmission and distribution system to ensure adequate power system reliability.
- d. Take prudent steps to develop indigenous renewable energy sources such as wind, solar and biomass, to significantly improve the security of supply, while reducing carbon emissions.
- e. Give priority to offshore gas development in the Mannar Basin and elsewhere, to increase independence from imported energy, reduce foreign exchange costs, and strengthen the creditworthiness of the national economy.
- f. Ensure that all energy projects proceed only after inclusive and meaningful consultations with stakeholder communities potentially impacted by their development.

RS3.2. Sustainability Perspective

2020

Renewable energy options show promise for the future. Sri Lanka is a tropical country blessed with abundant sunshine. We have moderate wind speeds, and being a small land mass exposed to the sea, the wind persists - for most parts of the year - near the coastal belt, especially in the northwestern to northern land mass and the southeastern land mass. There are very high winds (mostly seasonal) in the hill country and wind gaps as well. Sri Lanka could also plant fast growing tree crops suitable for biomass based power generation. As most of our garbage is bio-degradable, if there is any energy to be extracted, one popular method would be anaerobic digestion and a small quantity of energy derived through the thermal route.

Most of the renewable energy systems such as Solar PV, both small scale roof top and MW scale grid connected power plants, wind, and to a certain extent biomass, are being actively pursued by the private sector in particular and the Ceylon Electricity Board (CEB) in the case of wind. There are also a few waste to energy projects being pursued.

Sri Lanka will continue to be a green country as far as the energy scenario is concerned. Most of our large traditional and small scale hydro resources have been almost fully harnessed. The renewable energy share in the primary energy supply, including biomass and hydro, has dropped from about 80 percent in the late 1970s to about 48 percent in 2015, although there has been an appreciable increase in terms of the contribution of renewable energy to the primary energy supply. This means that although there has been a shift in certain categories, especially in the urban household energy mix, the country is making good progress in the utilization of renewable energy sources.

Increased penetration of renewable energy and distributed electricity generation with customer participation, require careful management of the transmission and distribution network. This will ensure the quality and continuity of the electricity supply to all customers, in line with the increasing reliability needed in a modern economy. Implementation of demand management initiatives that include wide and discretionary participation by customers to manage and save energy, responding to utility signals on price, and other incentives, require advanced metering infrastructure. The CEB and LECO have already commenced pilot implementation of smart metering infrastructure, and will implement several more pilot projects in 2018 and 2019. Further, smart and pre-paid meters would be provided on request to any customer starting from 2018, to enable customers to manage and monitor their own consumption, with or without utility intervention.

2025-2030

The draft "National Energy Policy and Strategies of Sri Lanka" states, "A paradigm shift of policy is envisaged to defend and improve the share of renewables in the primary energy supply from the 55 percent level maintained during the last decade." This supports the Intended Nationally Determined Contributions (INDCs) according to the Paris agreement (COP 21) and SDGs. Sri Lanka is committed to reducing Green House Gas (GHG) emissions by 20 percent (4 percent unconditional and 16 percent conditional) from the Business as Usual scenario.

In keeping with the above targets of 414MW of wind and 410MW of solar by 2020, 894MW of wind and 1,009MW of solar are to be introduced by 2030 according to the 2018/2037 Long-Term Generation Expansion Plan (LTGEP). This will greatly reduce the GHG emissions by about 20 percent in the power sector alone.

Implementation of "smart" and sustainable initiatives will complement the renewable energy initiatives in the electricity sector, to facilitate a wide range of distributed generation, smart grid, smart metering and demand management options that are planned. These initiatives will sustain future developments, including climate change related commitments and technological progress such as electrified railways, autonomous electric cars, smart city requirements, etc.

RS4. Health

RS4.1. Key Action Recommendations

- a. Establish a hierarchical system that develops the peripheral hospitals (with mobile labs) to deliver Primary Health Care, leaving Secondary and Tertiary Care hospitals to deal with complex cases.
- b. Establish a supply chain with appropriate auditing, accountability and transparency mechanisms, in supplying medicines and equipment to hospitals.
- c. Educate the public on proper sanitation, healthcare standards and avoidance of road traffic accidents.
- d. Increase trained staff in Ministry of Health (MOH) areas - with suitable remuneration for working in remote areas - to further reduce maternal and infant mortality and minimize communicable diseases, and provide well trained ambulance crews to deal with the transfer of sick patients to specialized units.
- e. Set up a digital platform for Electronic Medical Records, develop public-private partnerships, and establish a National Health Insurance scheme to reduce the financial burden on the Government.

RS4.2. Sustainability Perspective

2020 to 2025

Within this period, a transparent procurement system will be established to deliver quality non-consumables and consumables. Electronic medical record keeping will also be set up. The Government will control and manage the issue and use of hazardous materials. All patients will be registered under a Board Certified General Practitioner.

2025 to 2030

A countrywide National Health Insurance scheme will be established during this time frame, and public-private partnerships will become more prevalent.

RS5. Marine Resources

RS5.1. Key Action Recommendations

- a. Establish a state of the art marine research institute with improved infrastructure and human resources, to conduct marine research and to develop as a "center of excellence in marine research". This would serve as an umbrella organization, coordinating and facilitating marine research and the sustainable utilization of ocean resources.
- b. Promote environmentally friendly fishing gear and provide incentives for environmentally friendly fishing gear operations.
- c. Increase the Marine Protected Area network and provide for the effective management of these areas. Improve the fragmentation of state institutions dealing with marine resource management.

- d. Develop fishery harbour infrastructure. Promote underutilized facilities such as the Dikkawita Fishery Harbour to enhance economic development.
- e. Restore severely degraded ecosystems and key habitats, and conserve important species.
- f. Invest more on the marine sector in order to get the maximum return from the blue economy, since the future resource base will be the ocean.
- g. Expand ocean based resources beyond fisheries to pharmaceuticals, minerals, responsible tourism, shipping, and renewable energy.

RS5.2. Sustainability Perspective

Sri Lanka has not recognized the full potential of the ocean resources, other than fisheries. Therefore, the ocean needs to be given top priority, as a future resource base and also to boost the economy of Sri Lanka. However, all the ecological and economic services depend on our ability to maintain the health of the ocean. Increased scientific knowledge, development of research, and transfer of marine technology, are essential in order to improve ocean health and to enhance the contribution of the ocean for the development of countries, small island developing states in particular. Since we are approaching the maximum limit from our coastal fish production, marine aquaculture (mariculture) as well as the marine ornamental fish trade targeting the export market will be substantially developed with the latest technology. Furthermore, the seafood export industry will be developed with value additions. If Sri Lanka is to benefit from the blue economy, existing and new ports should be developed based on the green harbour concept.

It is imperative to carry out baseline studies, resource surveys and exploration of non-living resources. Ocean based ecotourism including marine mammal observations, snorkeling, diving, sport fishing and other water sports, will be further promoted after setting up all the regulatory mechanisms. There are a few direct references to new technologies such as blue carbon and bioprospecting which could have future consequences – particularly if they are woven into livelihoods as a means of supporting development.

RS6. Transport

RS6.1. Key Action Recommendations

- a. **Improve access and affordability of transport for all within a sustainable physical environment:** Complete a mobility assessment to fill service gaps by 2030. Special attention to be given to improve access for (a) children, women, the senior citizens and the disabled; (b) remote communities and (c) the poor. By 2025, each city with over 100,000 population to have adequate walkability, cycling and access by public transport modes, while controlling traffic volumes and parking to levels sustainable for the physical and cultural character of the city.
- b. **Protect Lives:** To provide an allocation of 5% of capital investment in the sector for transport safety improvements. Safety and Security in travel, including for women, will be considered a basic right of society.
- c. **Protect the natural environment:** Assess transport infrastructure and services from 2020 based on: a) use of physical resources, b) number of beneficiaries, c) use of renewable energy d) environmental impacts and e) vehicle-km and fuel consumption.
- d. **Improve connections nationally and with the world:** Multi-modal transport & logistics networks to be developed by 2018 with strategic plans to (a) develop domestic aviation, (b)

- improve international air travel and (c) improve export facilitation and port development.
- e. **Make employment fulfilling and productive:** The GoSL will by 2030 take steps to formalize transport employment and to create decent work conditions. Transport sector to be made a driver of the economy pursued through strategies encouraging related domestic value addition.
 - f. **Consultations are critical for major projects:** Such projects will proceed only after consultations with all stakeholder communities likely to be impacted.

RS6.2. Sustainability Perspective

The ‘business as usual’ scenario is likely to lead Sri Lanka into having a highly unsustainable transport sector by 2020. Urban congestion is likely to consume over 20 percent of GDP, while air pollution, road accidents, waste in transit and energy consumption will continue on an increasing trend. If unattended, these trends are likely to cause major economic, social and environmental impacts to an extent that livability, both in urban and rural areas, will become intolerable by 2025. The consequent reduction of economic activity and resulting internal and external migration is likely, until Sri Lanka reaches an equilibrium of lower economic and social activity in keeping with the economic cost of mobility. However, the interventions proposed above will pre-empt such an eventuality and allow the country to continue at an even higher trajectory of economic growth that will reduce the cost of mobility by half by 2030, while also improving social interactions and reducing environmental impacts by at least one third.

RS7. Urban Development and Physical Planning

RS7.1. Key Action Recommendations

- a. Enforce the National Physical Planning Policy through the intervention of the Head of the State.
- b. Carry out wider and more frequent awareness building among the general public regarding the National Physical Plan and the state of its implementation.
- c. Strengthen the Planning and Implementation divisions of the local authorities with relevant expertise, technology and institutional settings.
- d. Perform strict conformity checks on the compliance of projects to the Local Development Plan in the allocation of funds from national, provincial and local budgets.
- e. Set up an annual and periodic implementation programme within the National Physical Plan.
- f. Minimize the potential for community tensions to arise from such infrastructure plans by making consultations with stakeholder communities an integral part of the planning process.

RS7.2. Sustainability Perspective

As stated earlier, for healthy social and economic development, planned physical development is not an option, but a necessity. In order to achieve a sustainable physical development, the updated National Physical Plan is proposed to be implemented under the directives of the National Physical Planning Council, headed by H.E. the President and represented by the relevant line ministries and institutions. The National Physical Plan should be adopted as a Broad National Level Policy

Guidance for the identification, selection and implementation of inter-regional, regional and local level development projects and programmes. In the implementation of the Plan, the Government may consider priorities that will best serve social and economic development as a whole, the benefits of which will reach the community at large. The Government may also reconsider some of the projects which are presently in the pipeline for their immediate requirement, bearing in mind the unfavorable impact that they can have upon a planned, sustained physical development in the island.

The initial planning and implantation of the high priority projects such as highway and railway development, should be realized by 2025, in order to lay the foundation for a future settlement development pattern and to capitalize upon the dividends of the demography and global opportunities. The pull factors of the major infrastructure developments, upon the completion of such projects, will initiate a gradual transformation in the physical landscape of the island, and thus, the initial stages of the expected urban development and settlement distribution pattern can be expected to materialize by 2030.

RS8. Water

RS8.1. Key Action Recommendations

- a. Initiate a national wide programme to identify suitable areas for small storage ponds and gravity driven "Mini Schemes" with pipe borne water, with the support of Provincial Councils, Water Boards and other authorities.
- b. Construct "Micro Bunds" on mountain slopes along the contour to control surface erosion and improve water infiltration and absorption into sub soil strata.
- c. Commence a national level mechanism with the support of the Central Environmental Authority to control water pollution.
- d. Commence a programme to restore small irrigation tanks scattered throughout the country.
- e. Launch an island wide awareness programme with the support of respective local authorities to provide information on the best practices in basin management, including excavation control, home garden landscaping, mini agriculture, construction of roads etc.

RS8.2. Sustainability Perspective

2030 Target

In the water sector, the main goals of the road map towards the 2030 vision would be to provide access to 'quality drinking water' for every citizen despite climate change, drought or rain; to ensure water for agriculture, including paddy, other food crops and commercial farming; and to provide basic sanitary facilities to all families in rural, estate, and metropolitan areas.

2020

In the road map toward 2030, the first stretch from 2018 to 2020 would cover events to promote rain water harvesting in CKDu and other possible rural areas (with subsidized financing), rehabilitate minor tanks for drinking and agriculture, and improve recharge aquifers in the Jaffna area. Other steps would be to clean, rehabilitate and construct shallow wells for drinking and minor agriculture and to improve sanitation in rural schools and the estate sector, with the assistance of provincial

authorities and respective Government agencies. A survey should be started immediately to quantify the work and data, and a necessary budget should be allocated.

2025

In the second section of the road map - 2020 to 2025, proper planning and policy decisions need to be made to reach the 2030 goal with a sufficient budget allocation and minimal socio-economic resistance.

It is also a priority to prepare a "National Water Use Master Plan" covering both 'surface' and 'ground' water, optimization of water use, and measures to maintain the quality of water.

In 2025, a "National Secretariat for Water Management" would be set up with the participation of all Government agencies dealing with water, to form a single body for making policy decisions in the water sector. Its goals would include supplying drinking water to 65 percent of the population, improving the pipe borne network, organizing methods like reverse osmosis (RO) Plants, harvesting rain water, reserving necessary funding, procurement planning, planning for improving sewerage networks in the metropolis, and planning to improve sanitation in the rural and estate sectors.

In line with the major works planned, drinking water coverage will increase up to 60 percent from the present coverage of 45 percent, with the support of the National Water Supply and Drainage Board (NWSDB) and the local authority. The supply of irrigation water to north central province (NCP) and north western province (NWP) will also be enhanced, diverting 900 MCM/year to NCP and 100 MCM/year to NWP.

2030

At the end of the road map in the year 2030, more than 90 percent of the water retention storage in the country will be harnessed by developing and rehabilitating major, medium, and minor tanks, while conveyance losses will be minimized. The quality of water in rivers and water bodies will be maintained at World Health Organization (WHO) standards for drinking water sources and will be made suitable for agriculture. Access to drinking water for all citizens will be reached - 65 percent from pipe borne water and other organized resources like RO plants, and the balance 35 percent by rain water harvesting.

"Smart Water Allocation" assisted by "Real Time Software Modules" will be the decision support mechanisms for the National Water Management Secretariat for most of the water allocation in irrigation, agriculture, drinking and hydro power in 2030.

No trans-basin diversion is envisaged beyond 2030, unless the National Water Use Master Plan suggests in advance that excess water is available for the next 50 years. However, "In Basin" water use developments will be promoted, with appropriate agriculture crops, drinking needs, and industrial use being harmonized with water availability and rainfall.

Rain water harvesting in urban and rural areas will be utilized with subsidized financing, as an alternative to pipe borne supply. In particular, the CKDu affected zones will be fully supported with quality drinking water by rain water and small tanks, and with RO plants when necessary as a last solution. Water supply for all agriculture will be measured and quantified by 2030, and will be

priced and charged for commercial farming. However, water for paddy will be subsidized with a 'value', as an indicator on expenditure incurred for the National Budget.

All the ground water aquifer reservoirs will be surveyed for a data base, giving the quality and quantity of water available as an alternative to surface water, if and when necessary.

Sewerage plants in most of the metropolis will be upgraded and high priority will be given to the renovation or construction of a sewerage system in the new city development plans, as a Government Policy beyond 2030, with proper access to acceptable sanitary facilities for all.

R. RECOMMENDATIONS AND CONCLUSIONS

RT. CROSS CUTTING THEMES

RT1. Climate Change, Disasters & Air Quality

RT1.1. Key Action Recommendations

- a. Prioritize adaptation to climate change impacts, especially to protect the poor and vulnerable.
- b. Reduce deforestation which aggravates the frequency of disasters such as floods, landslides and droughts.
- c. Recognize the urgent need for strong policy decisions, sustainable land use practices and the development of early warning systems.
- d. Prioritize education and awareness creation among all citizens, especially at the school level.
- e. Develop innovative projects through careful research to take excess water from the southwest to the northeast of the country, to overcome the long-term effects of droughts.

RT1.2 Sustainability Perspective

The population and the number of vehicles will increase with economic development. However, if vehicles entering Kandy, Colombo and other major towns and cities are controlled, and only zero or near zero emitting vehicles are allowed to enter, air pollution will reach a near zero level in the city by 2020. Pollution related health problems will thereby be minimized. This will result in the Government health bill being lowered, with a healthier workforce and increased efficiency or output.

Cities could become more environmentally friendly. Forest patches and pedestrian walkways, will attract both foreign and local tourists, thereby stimulating economic growth. The improvement of the Kandyan home garden concept will help to prevent soil erosion. The prevention of housing development on hilly slopes will help to reduce landslide type disasters.

Increased forest cover will enhance water retention in the soil and improve infiltration. Evaporation will be replaced with evapotranspiration. This will bring about a natural air conditioning effect that will reduce dryness. Introducing some of the ancient wisdom of irrigation and water management - such as the cluster of cascading tanks of various sizes - into planning processes, will make it possible to live even with drought conditions. By cultivating short term crop varieties and using drip irrigation, farmers will be able to manage their finances as well as their nutrient intake. When the above actions are taken in a systematic way from now onwards, poverty will be reduced to a manageable level by 2020.

Proper scientific planning and increasing tree cover will reduce disasters such as flooding and landslides. Implementing existing rules and regulations without deviations, will reduce unauthorized developments and unauthorized structures in river banks, reservations, and near and around waterways and canals, and will prevent flooding and landslides to an extent, by 2020. Controlling and managing natural resource extraction such as sand, soil, gravel and metal will prevent many environmental problems including health hazards. While these actions will help to reduce the effects of disasters by 2020, education and awareness creation from a young age need to be undertaken in order to provide better living conditions for the future generation.

RT2. Ethics, Values & Citizenship

RT2.1. Key Action Recommendations

- a. Instill common values, ethics and a sense of citizenship in a unitary SL through an effective public communication strategy. This may include religious programmes conducted in temples, kovils, churches, mosques and places where people of different faiths gather. The focus of these programmes should be the common core and humane values that all religions seek to promote. This can help to promote respect for diversity of views and beliefs, tolerance, peaceful conflict resolution, and freedom from violence in our society. This approach may also help to prevent the politicization of religious or ethnic and other identities, and the transmission of disruptive and negative messages in the name of religion.
- b. Use education as a tool to bolster citizenship in Sri Lanka. Programmes such as Global Citizenship Education (GCE) can inspire action and build partnerships, dialogue and cooperation, through formal and informal education.
- c. Promote community based approaches which create learning environments that promote links to communities, as well as linking learners to real-life experiences (such as exchange programmes, community-based activities and foreign language studies). The aforementioned platforms help to improve citizenship through active and informed participation at the community, local, provincial and national level.
- d. Encourage the celebration of diversity through state interventions to incentivize inter-religious and inter-ethnic appreciation. Social and historical education should strive to instill a critical, independent and responsible mentality among young people and promote understanding of the traditions of other communities (by learning each other's language, getting to know each other's festivities, exchanging cultural, musical, literary, culinary knowledge, etc.). Religious education - which most young people receive - should be incentivized to reflect positive traits of other communities and faiths. It should help students to recognize the shared values that exist across religious identities.
- e. Ensure recognition of equal rights through state intervention to affirm through all means, including its basic norms like the Constitution, that human rights are a common set of values across all cultures and identities. Civics teaching should have as a cornerstone the understanding of the Bill of Rights in the Constitution, the Universal Declaration of Human Rights, treaties we have ratified and signed as a state, and customary norms of international law that bind all nations. This should not be merely theoretical but participatory - students

must be able to identify in their daily reality the situations that go against the realization of human rights, and should be able to volunteer and engage to bring about peaceful, cooperative, and smart change.

RT2.2 Sustainability Perspective

A common sense of morality, citizenship values and ethics should be instilled in people by using religion as a vehicle. In other words, a set of moral and ethical values shared and shareable by all religions, should be established among the population. It is hoped to build an active, cohesive, empowered and tolerant citizenry who share a common historical narrative, or at the very least, respect different perspectives.

New communication technology will be used to challenge all identified negative features of our society and institutions, especially through the activism of youth groups and the guidance of enlightened religious leaders. Acts of abuse of power, lawlessness and corruption from any source will not be accepted by the public, and will be publicized and critiqued. The right to information and media freedom will be strengthened.

RT3. Gender

RT3.1. Key Action Recommendations

- a. Recognize and value unpaid care and domestic work by adopting policies to formalize, diversify and develop household care across state, private and public-private partnerships. At the same time, programmes on shared responsibility between men and women within the household should be mainstreamed into the educational curriculum.
- b. Promote work life balance for men and women.
- c. Develop policies to enable women to access upper secondary and higher education, particularly in STEM subjects, and train women in technical, innovation and leadership skills to bring them into the formal economy at better rates of pay. The development of such skills would also minimize current gender wage gaps.
- d. Develop policies that provide adequate retirement benefits for the elderly and protection against post-retirement labour exploitation in the informal sector.
- e. Introduce a national transport policy that not only focuses on rural-urban connectivity, but also ensures zero tolerance of women's sexual harassment in buses and trains.
- f. Reform laws in all areas identified by a well-established evidence base of research and policy, and strengthen law enforcement to prevent impunity and provide access to remedy and relief, especially for Violence Against Women (VAW) and Sexual and Gender Based Violence (SGBV).
- g. Introduce policies to encourage the reporting of harassment. Provide human resource training by professionals, including health professionals, to halt its prevalence at the workplace.

RT3.2 Sustainability Perspective

A 17 percent increase in the 60+ aged population is expected by 2022, while female life expectancy is expected to reach 82.5 years by 2026 as against 72.3 years for men. An increase in the fertility rate of women who are 35+ years until 2022 is also projected. These demographic trends will result in increased financial insecurity, including greater health and long-term care costs, that will force elderly women into jobs in the informal sector, working long hours for pay that is less than that of younger workers. At the same time, older mothers will experience the effects of a change in the pattern of intergenerational wealth transfer, where instead of a wealth flow from employed children to parents, children continue to be financially dependent on parents.

The increase in the elderly population will also seriously impact the job prospects of younger women. There is a disproportionate burden on younger women of caring for the elderly and children, requiring them to live in close proximity to sites of parental and child-care, which limits their access to employment with better income. This is particularly acute in rural areas, where 85 percent of the poor and a majority of the elderly population are located. This situation is also severe in the north and east where many women are the sole heads of households, with extremely limited livelihood options. Even in those districts where urban and livelihood development has occurred, women's responsibilities within the household dissuade them from maximizing on this dividend.

An integrated plan that strengthens retirement benefits, re-skills 60+ year old women for better jobs, formally recognizes unpaid care and domestic work, brings in public-private partnerships for household care, and mainstreams joint responsibilities of men and women in parenting and household care into educational curricular and workplace norms, will alleviate the disproportionate burden on women in the informal and unpaid care economy. Programmes to train younger women in technical and leadership skills will enable them to enter the formal economy at better rates of pay. Adopting policies to monitor and abolish gender wage gaps and ensure the accessibility, safety and security of women in relation to public transport and workplaces, as well as strengthening the prevention of domestic violence will further encourage women into the labour force, facilitate their wellbeing and increase their productivity. The sustainability of a cohesive, ethical society as well as greater economic productivity rests on equal opportunities for all, including women, in accessing economic resources and well paid and dignified employment, and being safe from harm including SGBV.

RT4. Governance

RT4.1. Key Action Recommendations

- a. Establish rule of law by supporting the creation of independent and professional institutions that can effectively serve the public, forming an understanding among politicians of the importance of such institutions for good governance.

- b. Establish a good governance strategy and structure that cuts across all levels (e.g. central, provincial and local) of public bodies/agencies, thereby re-defining their scope, re-assigning specific roles, responsibilities and accountabilities, and empowering them with delegated authority independent of political intervention or influence.
- c. Maintain a workplace culture with strong ethics and integrity as part of the governance framework and for good public sector performance. Public sector employees must operate independently with integrity and maintain high standards of ethical conduct, to uphold sound decision-making processes and ensure community confidence and trust in the public sector.
- d. Ensure clear and transparent relationships between the elected Government and the bureaucracy to prevent any undue influence in the administration of public functions and to ensure swift and efficient implementation of Government policies and strategies.
- e. Drive the performance of the public sector with optimum effectiveness and efficiency through performance monitoring and evaluation systems and processes, both at an individual and organizational level, and through performance reporting.
- f. Create a culture in which people will be naturally motivated to do 'the right thing, the right way', with loyalty and commitment. Promote and inculcate values such as integrity, trust, respect, directness, speed and transparency, and direct leadership across all levels of public servants.

RT4.2 Sustainability Perspective

A consistent policy framework for good governance by the public sector will help overcome the fundamental problems mentioned above and ensure effective implementation. Decentralization of planning and plan implementation, adoption of the subsidiarity principle in the devolution of power, people's participation in governance at national, provincial and local levels and the empowerment of local councils, will change the highly centralized decision making structure that is presently in place.

Well defined management responsibilities and accountabilities, meaningful strategic plans, programmes and action plans, and independent oversight are cornerstones of governance for the public sector. The public sector will be run with optimum effectiveness and efficiency through performance monitoring and evaluation systems and processes, both at an individual and organizational level, and performance reporting.

There will be a culture in which people will be naturally motivated to do 'the right thing, the right way', with utmost loyalty and commitment. The constitutional reform process will help ensure peace and sustainable development.

RT5. Innovation, Technology & Industry

RT5.1. Key Action Recommendations

- a. Create the leading test-bed in the region for product and process innovation by incentivizing private firms and non-profit entities to put in place the necessary elements for an innovation test-bed.
- b. Further encourage Sri Lanka's inchoate angel and venture capital financiers and promote the provision of incubators and accelerators, along with incentives for large companies to create space for innovation.
- c. Create conditions for cross-fertilization of ideas along with a reward system for successful innovators (including, but not limited to, an effective intellectual property system).
- d. Foster mindsets conducive to innovation and larger-than-Sri Lanka thinking through the educational system and media.

RT5.2 Sustainability Perspective

Actions initiated in the coming two years will take some time to yield results. Achievements that will form the basis for a significant advance in the Global Innovation Index are possible within this time frame.

Successful implementation of these recommendations by 2025 will vault Sri Lanka to the forefront of innovation among lower middle-income countries in South and Southeast Asia. Inclusion in the top ten among lower middle-income countries and within the top two of South Asian and Southeast Asian countries within that income group, are achievable targets. It should also be possible to document measurable contributions to the diversification of exports and improvement of export volumes.

After 2025, the targets should be redefined as appropriate for an upper middle-income country.

RT6. International Relations

RT6.1. Key Action Recommendations

- a. Maximize Sri Lanka's geostrategic potential to serve as an emerging transshipment and logistics hub, as well as a commercial hub connecting different regions.
- b. Vigorously pursue economic diplomacy initiatives to bolster the economy, enhance development activities and attract foreign investors and traders to the country, taking advantage of the positive international focus on Sri Lanka.
- c. Promote Indian Ocean based regional cooperation as a priority in the Sri Lankan Foreign Policy. The country's active role in the Indian Ocean Rim Association (ORA) is aimed to ensure maritime safety and security, protection of ocean related resources and freedom of navigation, and to reap the benefits of a Blue Economy.

- d. Provide better and more efficient Consular Services for the protection and the advancement of the welfare of Sri Lankans abroad, as well as to minimize document forgeries often committed in the past by human traffickers and people smugglers.
- e. Further focus on facilitating negotiations related to the fishermen issue while countering misinformation propagated by certain diaspora elements through think-tank intervention, by promoting Sri Lanka's image through the media and through the practice of public diplomacy.

RT6.2 Sustainability Perspective

Beyond 2020, we would aim to:

- Assist in the realization of SDG 17 (means of implementation) by working with international organizations such as the United Nations Conference on Trade and Development (UNCTAD), United Nations Development Programme (UNDP), Food and Agriculture Organization (FAO), WFP, United Nations Industrial Development Organization (UNIDO) & financial institutions, most importantly with the bilateral donor countries from the West, using our recently strengthened and expanded relationship to secure financial and technical support for development.
- Project Sri Lanka as a model for specific SDGs such as SDG 16 (just and inclusive society), so that in a world of crises and uncertainties, communities dedicated to peace building and economic development could pay increased attention to Sri Lanka, in our nation's efforts to strengthen democratic institutions and develop projects and programmes. This would create a positive atmosphere for trade and development cooperation.
- Help bridge bilateral and multilateral donors in intensifying efforts towards inclusive, sustainable industrial development (SDG 9), as Sri Lanka's industrial base expands with increasing economic activity and investment. While North-South cooperation remains an important mode of facilitation of technical knowledge, Sri Lanka's leadership as a robust and resilient trade and maritime hub providing connectivity between East and West, could help leverage South-South cooperation for economic advancement.
- Look beyond the EU GSP+ trade facility. The EU has stated that it has extended this concession to Sri Lanka due to the lack of diversification of its economy and to provide incentive for reform. Implementation of 27 International Conventions which Sri Lanka is party to, which include seven core human rights conventions, is key to securing this facility and continuing to receive benefits from the EU GSP+ arrangement. While contributing to maintaining this benefit, we have the vision and initiative to transform the trade relationship with Europe into one of free trade, by the time the GSP+ facility ceases to exist in 2022/2025.

RT7. Poverty & Inequality

RT7.1. Key Action Recommendations

- a. Ensure that macroeconomic adjustments favour micro economic interventions at the local level for inclusive growth, with gender and youth specific components.
- b. Mobilize partnerships among individuals and enterprises in production sectors ranging from divisional through provincial to national levels, improving the supply/value chains of growth potential products and services benefiting the poor, with supply side inputs on demand driven processes.
- c. Request public, private and people's sector agencies responding to the national call to contribute towards the goal of ensuring a poverty free Sri Lanka by 2030, to declare their action plans.
- d. Launch and regularly refresh a countrywide campaign of citizen engagement in public affairs, giving priority to poorer communities and lagging areas, using a community self-managed development approach.
- e. Promote inclusive and accountable community institutions practicing principles of good governance and ethics, as platforms for the convergence of services from various programmes directly focusing on the poor and the disadvantaged, to overcome poverty and inequality.

RT7.2 Sustainability Perspective

Inclusive, accountable and formally organized community institutions will be active in managing investments from increasing income in 5,000 Grama Niladhari Divisions (GNDs) by adopting a community driven development approach, thereby addressing the priority needs of the bottom 40 per cent of the population. This number will be increased to 10,000 GNDs by 2025, and all divisions will be covered by 2030.

A countrywide civic education campaign mainly focused on training communities to undertake community managed development, will be carried out through specifically identified training institutions related to certain Local Governments by 2020, demonstrating scalability to cover the rest of the country by 2025 and 2030 progressively.

Divisional Secretariats will play a key role in the planning and coordination of development interventions, specifically integrating Samurdhi safety net interventions and other programs to facilitate the sustainable management of resources, thereby creating a more holistic approach to poverty alleviation.

The convergence of relevant government and private sector development interventions for providing the basic and growing needs of the bottom 40 per cent of the population, will be evidenced by the poorer and disadvantaged areas of over 1,000 GNDs and communities being covered through government and private sector investments and partnerships on improved supply/value chains of crops, products and services, with growth potential for technology adoption on innovations, import reduction and/or increasing exports.

RT8. Reconciliation, Security and Peace

RT8.1. Key Action Recommendations

Reconciliation

- a. Rapidly fulfil key outstanding commitments related to the reconciliation agenda, including the establishment of an effective Office of Missing Persons (OMP), an enhanced reparations system, a Truth and Reconciliation Commission (TRC), and a credible judicial mechanism to prosecute allegations of the most serious crimes committed during the conflict.
- b. Articulate constitutional reforms acceptable to all communities or an alternative political accommodation equally acceptable to all.
- c. Launch a comprehensive Communications Strategy to explain and sell proposed reforms and reconciliation efforts nationally, with full engagement of the President, Prime Minister and all members of Cabinet. Launch programmes to diminish conflict and foster reconciliation in focus areas.
- d. Carry out the complete hand-over/restitution of military occupied lands in the North and East. If, on an exceptional basis, some of the land is deemed essential for national security reasons, fair compensation should be paid promptly and clear explanations provided to justify the expropriation, via legal means. Plans for handover of military occupied lands should be transparent, non-discriminatory, and included in the above-mentioned Communications Strategy.
- e. Implement immediate efforts to enhance gender equality in all Government services, particularly at the highest levels.

Security

- a. Establish a National Security Policy through a participatory mechanism that reflects the multiple security domains that the country is engaged in and the roles of different actors that safeguard our security (i.e. the state, the tri-forces and the new dimension of the citizenry guaranteeing its own security).
- b. Comprehensively implement effective monitoring of Sri Lanka's maritime domain. The existing maritime Intelligence, Surveillance and Reconnaissance (ISR) capability of the networked C3I (Command, Control, Communications and Intelligence) capacities, naval and aviation capabilities and operational capacities need to be evaluated and enhanced.
- c. Implement a more stringent immigration policy and a more robust border security policy in order to combat transnational organized crime. These policies must be enforced with comprehensive training of border security officers and the Sri Lankan Police Force.
- d. Establish a *Security Review Provision* on large scale foreign projects under Sri Lankan law. The proposed *Security Review Provision* should assess the impact of large scale foreign projects on national security which includes impact on domestic manufacturing and service capacity, the stable operation of the national economy, basic societal order, impact on living conditions etc.
- e. Introduce a national cyber security strategy with inter-agency cooperation and cyber operation command centres to build Sri Lanka's cyber defense infrastructure. An inter-agency

cyber task force with relevant Government and private sector institutions should implement this cyber security strategy.

RT8.2 Sustainability Perspective

Reconciliation

The National Reconciliation Policy adopted by the Cabinet of Ministers in May 2017 will guide the overall direction and emphasis of the reconciliation agenda. By 2020, the Secretariat for the Coordination of Reconciliation Mechanisms will have supported the establishment of key transitional justice mechanisms: the OMP, a TRC, and an office of reparations will be fully operational by then, providing critical assistance to victims. The legal framework for a domestic judicial mechanism to deal with the most serious crimes and atrocities of the past will be ready to be presented to the Parliament. The high unemployment rate of youth should be mitigated due to the increase in public and private mega projects, such as the Megapolis project and Cinnamon Life project, combined with community based initiatives and investment in Small and Medium Enterprises (SMEs). The opening of job opportunities will stimulate engagement and inter-community integration across the nation and will eventually also contribute to a participatory transitional justice and reconciliation process, which should reduce the risk of violence and extremism created by high youth unemployment.

During the past two years, the Sri Lankan government has focused on developing policies and action plans, which, in addition to the National Reconciliation Policy, includes specific efforts to address issues such as VAW, empowering female headed households, women's entrepreneurship development, and institutionalizing gender mainstreaming. The positive impact of the implementation of these policies will begin to be felt by 2020.

Constitutional reform should contribute to greater investment and accelerated development in the provinces, as well as acceptance of all communities and their full and equal place in a unified and democratic Sri Lanka, removing long-existing tensions and encouraging economic growth, security and stability.

The restitution of lands held by the military to civilians and the withdrawal of the military from business activities, will be close to completion by 2020. The satisfaction and opportunities gained by the restitution of lands and transfer of businesses to civilians should help communities to reconcile and can also create additional economic opportunities in impoverished regions, especially in the North and East, if well planned.

The government has taken important steps to give equal representation to the Tamil language in national life. By 2020, these measures will be in the process of being fully implemented in practice with the judiciary and police services, for example, being more accessible to Tamil speakers. Constitutional reforms are expected to further strengthen Tamil language rights, contributing to greater inclusion and commitment to national goals.

By 2025, the impact of a serious national reconciliation effort, effective youth employment programmes, investments in education and gender equality, and wise economic policy, combined with increasing respect for good governance and the rule of law in an inclusive, multi-cultural Sri Lanka in pursuit of a clear national vision, will allow for Singapore-like stability, innovation and growth to take hold. This will set the stage for growing foreign and national investment, sustaining GDP growth and improving social indicators across regions and communities, leading to greater social harmony and prosperity by 2030 and beyond. If the hard work of promoting reconciliation is undertaken now, the stage for a peaceful and prosperous future for all Sri Lankans beyond 2030 will be set. Without those efforts, we remain vulnerable to slipping back into conflict, at worst, or to years of low growth, inequality, and poor, divisive governance at best.

Security

Security, in the future, will comprise of citizen-centric and state-centric security issues. While being unable to predict the longevity of the state structure in the international arena, we must align our security model to combat the emerging threats of the future. The ultimate aim is to have a dynamic security model in Sri Lanka that can evolve with the trajectory of the threats facing our nation.

2020

Given the current trajectory of the country, in 2020 it is likely that threats faced by our nation will be mainly non-traditional in nature. The institutional structure should be designed to pre-emptively combat such threats. *Total security* must be the security of the future, where Sri Lankans are safeguarded from physical security threats, but also from economic, social and environmental security threats. In its approach to enhancing national security, Sri Lanka should invest in R&D initiatives to forecast the strategic future of the country. This will help to identify short, medium and long-term threats, so that we are better prepared to address the challenges such threats pose.

Working towards creating a common Sri Lankan national identity by 2020 is essential for the country, especially in curbing the radicalization of youth. Radicalization is an emerging global threat and therefore, Sri Lanka must mitigate its effects locally, so as to prevent xenophobia. In this regard, dignity and respect for all ethnicities, cultures and religions must be taught on an educational level in Sri Lanka.

2025-2030

In this time frame, Sri Lanka should be approaching security in a more holistic manner. The following are the potential threats we could expect Sri Lanka to address in the future: economic information warfare, cyber warfare (biometric authentication and privacy concerns), bio-war, agri-terrorism, radicalization and ethnic identity, and geo-political strategic concerns. A comprehensive Defense and Security Policy should be in place by 2025, drafted through a participatory mechanism with input from think tanks, the Parliament and other relevant stakeholders.

By 2030, Sri Lanka would have achieved Indian Ocean hub status as a financial, maritime and services transitory point in the geo-political context. On this trajectory, Sri Lanka must navigate its position in the Indian Ocean between China and India and balance all strategic interests in the

country. The World Economic Forum⁹⁵ has predicted that by 2030 the world will be multi-polar and thus it is crucial that Sri Lanka incorporates this balancing-act into its foreign policy in the long term.

Furthermore, the CPEC initiative as part of China's "One Belt One Road" will influence trading patterns in the Indian Ocean. It will witness a large increase in the volume of trade between China and Pakistan. Sri Lanka must look to take advantage of these shifting trade patterns to increase its own trade in the region. However, this must not be to the detriment of trade between India and Sri Lanka.

RT9. Youth Transgenerational Perspective

RT9.1. Key Action Recommendations

- a. Provide quality education to youth that leads to learning and skills that are relevant to their lives, and give them the capacity required for the country's changing labour market. Investment in a skilled, dynamic and empowered youth population begins with an educational curriculum and system that complements and drives such transformation.
- b. Embrace a model of sustainable development and growth that is not contradictory to what science and experience have revealed, to enable the youth to have a secure future. A circular economy approach to development based on the carrying capacity of eco-systems, is proposed as the remedy to this situation.
- c. Provide incentives for retaining youth in the agricultural sector, including the promotion of agriculture based entrepreneurship to increase youth participation and develop small-scale agricultural business areas.
- d. Encourage the private sector to actively play a role in encouraging innovation and in identifying and promoting new technology for youth participation in the labour force.
- e. Use the potential of youth to catalyse the implementation of the sustainable development plans of the Government.

RT9.2 Sustainability Perspective

The issues and corresponding remedies presented in the previous section collectively require an inter-related, cross-sectoral, and aligned strategy in order to be effectively implemented. Such a holistic approach would be ideally measured through the UN SDGs. The desirable status for 2020 and beyond from the transgenerational perspective of youth, would then be a nation that is committed to achieving the national targets for the SDGs. In endeavouring to do so, the commensurate Government actions and interventions should be based on sectoral national strategies that are aligned to creating a circular national economy based on the carrying capacity

⁹⁵ <https://www.weforum.org/agenda/2016/11/america-s-dominance-is-over/>

of Sri Lanka's eco-systems. Adopting an eco-systems based approach will allow prudent, efficient, and strategic use of Sri Lanka's natural resources that can guarantee intergenerational equity.

Circular economy

With Sri Lanka's commitment to achieve the UN SDGs, the complexities involved in achieving them within the existing economic and governance systems, and the challenges faced by the youth of Sri Lanka and corresponding remedial measures prescribed in the previous section, there is a case for circular economy principles to be applied in Sri Lanka. The application of such principles requires us to: a) rethink about the way we currently consume products and services, favouring access over ownership; b) reuse materials through exchanging, cascading and recovering raw materials throughout their lifecycle; and c) redesign waste out of the industrial economy – by designing goods and services that can be easily broken down and transformed, or designing business models which minimize the need or physical demand for goods in the first place. As Sri Lanka becomes more integrated in the global economy, we are well poised to adopt circular economics. While in industrialized nations the focus in building the circular economy is through optimizing existing systems, in developing markets such as ours, it may manifest through the sustainable development of nascent industries or enabling fairer distribution and access to resources.

Leading companies are taking a systems-level approach to designing out waste – indicating imminent pressure from the developed world to integrate sustainable practices in developing market production systems. International concern over dwindling resources is likely to continue rising. Measuring up the opportunity to the challenges, it is clear that adoption of the circular economy in developing markets will require multi-faceted levels of support – from investors, the Government, business and civil society. With the benefit of hindsight, Sri Lanka can learn from past failures of the linear model, helped by a surge of interest from leading global corporates.

Youth for Sustainable Development

It should be kept in mind that historically and in an evolutionary sense, youth are not satisfied with the status quo. Youth expectations far exceed the typical apathy of the general population that accepts that change takes time. Youth of any nation want to do better than the previous generation, avoid and correct the mistakes of the previous generation, and secure a future that is less uncertain than the one they matured into. Youth drive innovation, fashion, and social revolution. They are commonly accepted as catalysts and agents of change.

The problems humanity faces due to the overconsumption of natural resources, pollution, and inequality have been recognized, and the manner in which these can be changed to ensure prosperity for all while protecting the planet, has been outlined in the 2030 Agenda for Sustainable Development. The corresponding 17 SDGs are globally accepted as the solution because they are comprehensive, holistic, and inclusive. Securing a future where youth are empowered, enabled, and ensured of opportunities can be done best by striving to achieve these sustainable development goals. Given the role they play in future society and the size of their demographic representation,

youth should be considered a fundamental investment for the successful implementation of the SDGs.

Expectations and implementation

The paradigm shift that is expected will embrace, institutionalize, and socialize sustainable development values, based on technology and modern science that builds on traditional knowledge, practices, and cultural values that are still relevant and important. Therefore, the agenda for sustainable development should be not only adequately futuristic to be a radical enough change that youth can accept, but also grounded in reality to be practically achievable. The youth of Sri Lanka may not be able to lead a national strategy for sustainable development, but if properly harnessed, the potential of Sri Lankan youth will be a dynamic and productive engine for the achievement of the SDGs.

ANNEXES

ANNEX A. REPORT CONTRIBUTORS

EDITOR AND OVERALL COORDINATOR	Mohan Munasinghe	
TOPICS	LEAD AUTHORS	WRITING TEAMS
I - INTRODUCTION	Mohan Munasinghe	PEC
C - CLUSTERS		
C2 - ECONOMY	Saman Kelegama and Dushni Weerakoon	Wimal Nanayakkara, Ashani Abeysekera, Yolanthika Ellepola
C3 - ENVIRONMENT	Hemanthi Ranasinghe and W. L. Sumathipala	Kamal Ranathunga, Sena Peiris, Lakmini Senadheera
C4 - SOCIETY	Siri Hettige and Savithri Goonesekere	S. Colambage, P. Ganeshamurthy, Subhangi Herath
S - SECTORS		
S1- AGRICULTURE & FOOD	Anura Ekanayake	Gerry Jayawardena, S.R.K. Aruppola
S2 - EDUCATION	Madhura Wehella	Jayantha Balasooriya
S3 - ENERGY	Shavi Fernando	Tilak Siyambalapitiya, Harsha Wickramasinghe, Randika Wijekoon
S4 - HEALTH	P.A. Gooneratne	Ruvaize Haniffa, Palitha Bandara, Ajit Amarasingha, Maruieanne Samaraweera
S5 - MARINE RESOURCES	Kamal Ranatunge	Ariyaseela Wicremanayaka, Upali Amarasinghe
S6 - TRANSPORT	Amal Kumarage	Rohan Samarakajiva, Jagath Munasinghe, T.L. Gunaruwan
S7 - URBAN DEVELOPMENT AND PHYSICAL PLANNING	Jagath Munasinghe	Sumith Samaratunge, Kumaraguru Sugirdhan
S8 - WATER	S R K Aruppola	Sarath Gamini

T - THEMES		
T1 - CLIMATE CHANGE, DISASTERS AND AIR QUALITY	W.L. Sumathipala	Ariyaratne Hewage, Hasula Wickremasinghe, Shiromani Jayawardene
T2 - ETHICS, VALUES AND CITIZENSHIP	Asanga Tillekeratane	Savithri Goonesekere, Siri Hettige, Mano Titawella, Mohan Munasinghe
T3 - GENDER	Neloufer de Mel	Lakshman Dissanayake, Vagisha Gunasekera, Harini Amarasuriya, Pradeep Peiris, Kumuduni Samuel
T4 - GOVERNANCE	Savitri Goonesekere	Siri Hettige, Mano Titawella, Mohan Munasinghe
T5 - INNOVATION, TECHNOLOGY AND INDUSTRY	Rohan Samarajiva	Daniel Alphonsus, Louiqa Rashid, Nathan Sivagananathan, Sanjiva Weerawarana, Hans Wijayasuriya
T6 - INTERNATIONAL RELATIONS	Abdul Azeez	Foreign Ministry Staff
T7 - POVERTY AND INEQUALITY	Gamini Batuwitage and Udan Fernando	K. Romeshun
T8 - RECONCILIATION, SECURITY AND PEACE	Mano Tittawela	Asanga Abeygunasekera, Mohan Munasinghe
T9 - YOUTH TRANSGENERATIONAL PERSPECTIVE	Praveen Abhayaratne	
R - RECOMMENDATIONS AND CONCLUSIONS	Mohan Munasinghe	PEC
ADMINISTRATION		
COMPILING AND EDITORIAL SUPPORT	Chandima Wickremasinghe	Yvani Deraniyagala, Priyangi Jayasinghe, Nishanthi De Silva, Thisuri Wanniaratchi
PROJECT MANAGEMENT TEAM	Mohan Munasinghe	<p>Presidential Secretariat J. Wijeyratne, Chandima Wickremasinghe, Shiral Laktilaka, Harindra Dassanayake, Thisuri Wanniaratchi</p> <p>Munasinghe Inst. For Development Sria Munasinghe, Yvani Deraniyagala, Priyangi Jayasinghe, Nishanthi De Silva</p>

ANNEXES

ANNEX B. PRESIDENTIAL EXPERT COMMITTEE ON SUSTAINABLE SRI LANKA 2030 VISION

1. Prof. Mohan Munasinghe (Chairman)
2. Dr. Saman Kelegama
3. Dr. Dushni Weerakoon
4. Prof. Hemanthi Ranasinghe
5. Dr. W.L. Sumathipala
6. Prof. Savitri Goonesekere
7. Prof. Siri Hettige
8. Mr. Asoka Abegunawardhana
9. Dr. Ajith Amarasinghe
10. Prof. K Amirthalingam
11. Eng. S R K Aruppola
12. Dr. Jayantha Balasooriya
13. Dr. Suren Batagoda
14. Dr. Gamini Batuwitage
15. Prof. Neloufer de Mel
16. Prof. K N O Dharmadasa
17. Dr Anura Ekanayake
18. Eng. Shavi Fernando
19. Dr. Udan Fernando
20. Dr Kishu Gomes
21. Dr. Pani Gooneratne
22. Dr. T L Gunaruwan
23. Dr. Ahilan Kadirgamar
24. Dr. S A Karunaratne
25. Prof. Amal Kumarage
26. Dr. Ram Manikkalingam
27. Mr. Sanjay Mudalige
28. Dr. Jagath Munasinghe
29. Prof. Prasanna Perera
30. Dr. Kamal Ranatunge
31. Eng. Nihal Rupasinghe
32. Prof. Rohan Samarajiva
33. Mr. Susil Sirivardena
34. Dr. Tilak Siyambalapitiya
35. Mr. Mano Tittawela
36. Prof. Asanga Thilakerathne
37. Prof. Jayadewa Uyangoda
38. Dr. Madhura Wehella
39. Eng. Harsha Wickramasinghe
40. Mr. Ariyseela Wickremanayake
41. Dr. Hans Wijesuriya