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# Mainstreaming Disaster Resilience :

Identifying Opportunities in National Policies and  
Legal Framework in relation to Rural Development





# **Mainstreaming Disaster Resilience :**

## **Identifying Opportunities in National Policies and Legal Framework in relation to Rural Development**

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the Environmental Foundation (Guarantee) Limited.

ILO Country Office for Sri Lanka and the Maldives

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Mainstreaming Disaster Resilience: Identifying Opportunities in National Policies and Legal Framework in relation to Rural Development

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## Foreword

In 2018, Sri Lanka ranked the second most vulnerable country to climate change in the world according to the Global Climate Risk Index report (2019). While climate change is a problem, and one that must be solved at the global level, climate related disaster preparedness (mitigation measures and adaptation) and building local community resilience are central elements to mitigate any adverse impact at a country and community level.

The main climate related disasters in the most vulnerable landscapes of Sri Lanka are frequent floods, landslides and droughts. These events affect the livelihoods of thousands, especially those operating in the informal economy. As such, mainstreaming disaster resilience programming into local economic development approaches can effectively mitigate any adverse impact.

Guided by ILO Recommendation No. 205, 2017 on Employment and Decent Work for Peace and Resilience, the International Labour Organization (ILO) has been supporting the Government of Sri Lanka to improve preparedness measures while working towards realising its commitment to achieve decent work for all.

This publication **‘Mainstreaming Disaster Resilience: Identifying Opportunities in National Policies and Legal Framework in relation to Rural Development’** is an important result of the collaboration between the ILO and the Government of Sri Lanka. The desk review of policies combined with a literature review, and solicitation of recommendations from key stakeholders and experts has resulted in the articulation of a range of options for future policy development. Zeroing in on watershed and water resource management in land-use and development planning, specifically in the agriculture and plantation sectors, this publication offers concrete recommendations for policy mainstreaming.

**‘Mainstreaming Disaster Resilience: Identifying Opportunities in National Policies and Legal Framework in relation to Rural Development’** also constitutes an important contribution to the national dialogue on mitigation of climate change and Sri Lanka’s achievement of SDG 13 on Climate Action. It is hoped this contribution will be of value and utility to policy makers and implementers alike.

**Simrin Singh**

Director

ILO Country Office for Sri Lanka and the Maldives

## Preface

Sri Lanka is facing new opportunities for social and economic development. The country has recently graduated to upper middle-income and is on the path to progressively achieve the Sustainable Development Goals (SDGs). Nevertheless, there still remain disparities between regions and social groups. Moreover, the economy is fragile, and a quarter of the population is considered nearly poor and vulnerable to shocks that can push them back into poverty. Climate-related disasters are one of these drivers, with a recurrent occurrence of floods, landslides and droughts affecting particularly the impoverished sectors living in high-risk conditions and with reduced capacities for recovery. Consequent to recurrent disasters in the country, there is a growing appreciation of the need for developing stronger resilience to avoid excessive damages. The Government's National Policy on Disaster Management, 2013 (NPDM 2013) prioritizes resilience and encourages disaster mitigation measures beyond haphazard relief actions. Prevention and resilience to climate change have been widely discussed in the United Nations Country Team (UNCT) Committee on Disasters and is reflected as one of the four priorities in the recently signed UN Sustainable Development Framework (UNSDF) 2018-2022.

The recent droughts as well as the floods in the south have had a severe impact particularly on poor and vulnerable households. This shows the necessity for climate-proofing existing livelihood development programmes and support schemes provided to such groups. The current vulnerability to climate disasters threatens the sustainability of such support efforts. Therefore, introducing the correct climate resilience measures needs to be seen as an integral part of the strategies to improve the quality of current jobs when creating new job prospects.

The International Labour Organisation (ILO) saw a potential for contributing to this process applying the strategies formulated in its flagship programme –Jobs for Peace and Resilience. A number of impact mitigation and resilience strengthening activities have been identified on the basis of a careful analysis of the impact of recent natural disasters in Sri Lanka, in consultation with the constituents. It is important to note that these disasters are not one-off events but occur in a cyclical manner. For this reason, efforts have been made to identify measures that not only alleviate the immediate impact from the most recent disasters but also strengthen resilience in the longer run and thus reduce risks and vulnerabilities before new floods and droughts occur.

## Acknowledgements

This publication was produced with the support of the project “Jobs for Peace and Resilience: Strengthening disaster resilience of rural communities and micro and small enterprises in the North and South West of Sri Lanka”. The ILO Country Office for Sri Lanka and the Maldives collaborated with the Environmental Foundation Limited (EFL) to carry out a policy review to identify areas of strategic intervention to promote sustainable employment that will lead to ecological sustainability and in turn build resilience.

This ILO-commissioned research was undertaken by EFL. A special thanks to Mrs. Wardani Karunaratne for her guidance and contribution, Mrs. Hafsa Hudha and Mrs. Lasantha Waithanage for their support in researching and compiling this publication. The valuable support of Mrs. Chamila Weerathunge (National Project Coordinator – ILO) in recognizing the necessity for this study and technical inputs in reviewing the content. We also acknowledge the contribution from Mr. Prasantha Senarathge (Finance and Admin Assistant – ILO). The technical services and feedback of Mr. Bjorn Johannessen (Senior Engineer – ILO Decent Work Technical Support Team for Asia), is also appreciated.

Carrying out this study would not have been possible without the contributions of Ms. Malani Lokupothagama (District Secretary, Ratnapura), Mr. U.D.C. Jayalal (District Secretary, Kalutara), Mr. S.B. Udowita (Additional District Secretary, Ratnapura), Mr. D.L.W.D. Samarawickrama (Assistant Director – Planning, Kalutara), Mr. Manju Gunawardana and other government officers who assisted by providing information and participating in stakeholder consultations. The support received from the Department of Agrarian Development, Department of Agriculture, Disaster Management Centre, Department of Irrigation, Department of Land Use and Policy Planning, Department of Meteorology, Ministry of Plantation Industries, the National Building Research Organization, The Board of Investment and The Urban Development Authority in providing information is gratefully acknowledged. The study was proofread by Ms. Agana Gunawardana. The usual disclaimers apply with respect to errors and omissions. The responsibility for views expressed in this study rests solely with the researchers and not their institution of affiliation, and the publication does not constitute an endorsement by the ILO.

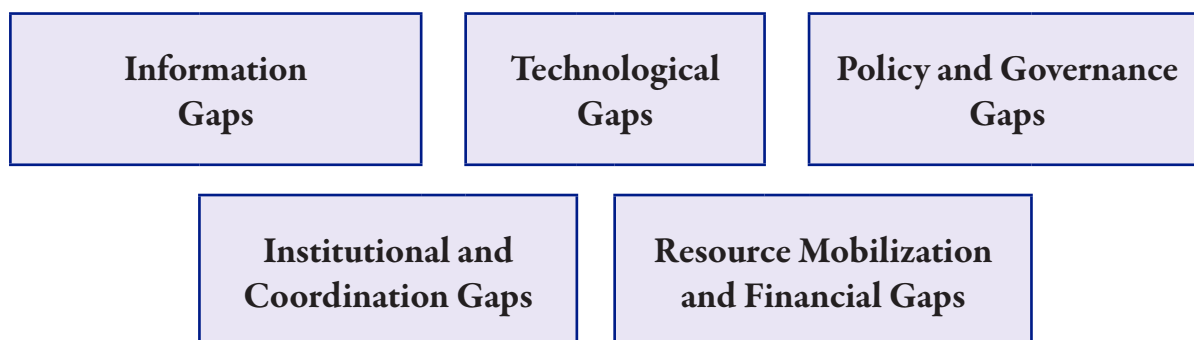
**Thomas Kring, PhD**  
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Jobs for Peace and Resilience  
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## Executive Summary

In the realm of climate change adaption and disaster resilience, this publication is looking at a few areas, which could contribute to strengthening ecological infrastructure to mitigate disaster impacts. The publication has sought to review disaster management laws in light of promoting resilience. Moreover, it has identified three strategic areas of intervention, namely, land-use and development planning, agriculture and water resources management, as areas that if regulated in view of climate change can ensure building resilience, and policy recommendations to that effect have been made. The publication has also deliberated on cross-cutting areas of livelihood such as small and medium-scale enterprises (SMEs), insurance and finance and inclusion of gender as a driver of resilience, as well.

It is apparent that there are five overarching issues in Sri Lanka (Diagram 1). This publication has sought to discern that bridging one of these five overarching gaps – policy and governance – is the key facilitator and eradicator of the remaining four issues.

**Diagram 1: Overarching issues faced in Sri Lanka**



The publication further includes five pragmatic recommendations for each area of strategic intervention and six overarching recommendations.

### Five pragmatic recommendations for each area of strategic intervention include;

- Recommendation one: Policy interventions for building resilience;
- Recommendation two: Development of transformative capacity through encouraging good governance and transformation of leadership to local authorities;
- Recommendation three: Research, improved dissemination of information, education, training and use of technology for building resilience;
- Recommendation four: Pursue solutions that deliver resilience;
- Recommendation five: Community empowerment through community participation in decision-making.

**Six overarching recommendations include;**

1. Understanding, managing, and reducing disaster risk;
2. Making investments in resilience;
3. Monitoring and measuring progress toward resilience;
4. Building local capacity and accelerating progress: resilience from the bottom up;
5. The landscape of resilience policy: resilience from the top down;
6. Linking community and governance to guide national resilience.

## List of Abbreviations

|         |                                                                  |
|---------|------------------------------------------------------------------|
| AAIB    | Agricultural and Agrarian Insurance Board                        |
| ADB     | Asian Development Bank                                           |
| DIA     | Disaster Impact Assessment                                       |
| DRM     | Disaster Risk Management                                         |
| DRR     | Disaster Risk Reduction                                          |
| EFL     | Environmental Foundation Limited                                 |
| GoSL    | Government of Sri Lanka                                          |
| ILO     | International Labour Organisation                                |
| IPCC    | Intergovernmental Panel on Climate Change                        |
| MDGs    | Millennium Development Goals                                     |
| NAP-CCI | National Adaptation Plan for Climate Change Impacts in Sri Lanka |
| NCDM    | National Council for Disaster Management                         |
| NDC     | Nationally Determined Contributions                              |
| NDMC    | National Disaster Management Centre                              |
| NDRMP   | National Disaster Risk Management Plan                           |
| NEOP    | National Emergency Operations Plan 2013                          |
| NGOs    | Non-governmental Organizations                                   |
| NITF    | National Insurance Trust Fund                                    |
| NPDM    | National Policy on Disaster Management 2013                      |
| SDGs    | Sustainable Development Goals                                    |
| SLCDMP  | Sri Lanka Comprehensive Disaster Management Programme 2014-2018  |
| SLNDMP  | Sri Lanka National Disaster Management Plan 2013                 |
| SMEs    | Small and Medium-Scale Enterprises                               |
| UDA     | Urban Development Authority                                      |
| UDA Law | Urban Development Authority Law, No. 41 of 1978                  |
| UN      | United Nations                                                   |
| UNCCD   | UN Convention to Combat Desertification                          |
| UNCT    | UN Country Team                                                  |
| UNDP    | UN Development Programme                                         |
| UNDRR   | UN Office for Disaster Risk Reduction                            |
| UNSDF   | UN Sustainable Development Framework                             |
| WMO     | World Meteorological Organization                                |

## The Project

The International Labour Organization (ILO) under its flagship programme on Jobs for Peace and Resilience has adopted a proactive approach to climate and disaster resilience and development. The pilot project in Ratnapura and Kalutara addresses flood resilience of tea plantation workers and tea smallholders including other micro, small and medium-sized enterprise (MSME) sectors.

Building resilience through improvement of land and water resources management requires the timely involvement of a number of agencies and fields of competence. Building local capacity would be an important dimension in resilience-oriented work in the community level. However, opportunities for such initiatives should be identified at strategy and policy-levels and operationalized.

Bearing the following in mind, this publication has sought to identify the opportunities/gaps in national strategies/policies in relation to rural development for mainstreaming disaster resilience.

Chapter One:

# INTRODUCTION



## 1. Background

### 1.1.1 Global extreme weather events

Global momentum to combat climate change is on the high-rise with a record of average temperature increase by 1.1°C since the pre-industrial period, and by 0.2°C compared to 2011-2015.<sup>1</sup> According to the World Meteorological Organization (WMO), the unmistakable signs and impacts of climate change, such as sea level rise, ice loss and extreme weather conditions, increased during 2015-2019, which is considered the warmest five-year period on record. Furthermore, there is a dreaded increase in climate change causes and impacts rather than a decrease. The Global Climate Risk Index, compiled by Germanwatch<sup>2</sup>, ranked Puerto Rico, Sri Lanka and Dominica as the top three countries affected by climate change in 2017 and the Index goes on to place Southeast Asia at the heart of the catastrophic outcomes of climate change (Table 1).

**Table 1: The Climate Risk Index for 2017: The 10 most affected countries**

| Ranking 2017 (2016) | Country                   | CRI score | Death toll | Deaths per 100 000 inhabitants | Absolute losses (in million US\$ PPP) | Losses per unit GDP in % | Human Development Index 2017 <sup>10</sup> |
|---------------------|---------------------------|-----------|------------|--------------------------------|---------------------------------------|--------------------------|--------------------------------------------|
| 1 (105)             | Puerto Rico <sup>11</sup> | 1.50      | 2,978      | 90.242                         | 81,315.204                            | 63.328                   | -                                          |
| 2 (4)               | Sri Lanka                 | 9.00      | 246        | 1.147                          | 3,129.351                             | 1.135                    | 76                                         |
| 3 (39)              | Dominica                  | 9.33      | 31         | 43.662                         | 1,686.894                             | 215.440                  | 103                                        |
| 4 (14)              |                           | 10.50     | 164        | 0.559                          | 1,909.982                             | 2.412                    | 149                                        |
| 5 (39)              | Peru                      | 10.67     | 147        | 0.462                          | 6,240.625                             | 1.450                    | 89                                         |
| 6 (5)               | Vietnam                   | 13.50     | 298        | 0.318                          | 4,052.312                             | 0.625                    | 116                                        |
| 7 (58)              | Madagascar                | 15.00     | 89         | 0.347                          | 693.043                               | 1.739                    | 161                                        |
| 8 (120)             | Sierra Leone              | 15.67     | 500        | 6.749                          | 99.102                                | 0.858                    | 184                                        |
| 9 (12)              | Bangladesh                | 16.00     | 407        | 0.249                          | 2,849.678                             | 0.410                    | 136                                        |
| 10 (20)             | Thailand                  | 16.33     | 176        | 0.25                           | 4,371.160                             | 0.354                    | 83                                         |

PPP= Purchasing Power Parties GDP= Gross Domestic Product

<sup>1</sup> WMO. (2019). Global climate in 2015-2019: Climate change accelerates. [online] Available at: <https://public.wmo.int/en/media/press-release/global-climate-2015-2019-climate-change-accelerates> [Accessed 31 Dec. 2019].

<sup>2</sup> A globally accredited environmental group that “promotes North-South equity and the preservation of livelihoods”.

### 1.1.2 Climate change and its impact on South Asia

Average temperatures in Southeast Asia have risen every decade since 1960.<sup>3</sup> The Asian Development Bank (ADB) estimates that Southeast Asia could suffer bigger losses than most regions in the world.<sup>4</sup> Amongst the many impediments the region is faced with, experts predict that ensuring food security for South Asia's ever-growing population and stabilizing its demand for water, housing and energy would be a daunting task.

Sri Lanka has been identified as a South Asian hotspot. A hotspot is defined as an area wherein changes in average weather will adversely affect the living standards and the negative impacts of such are predicted to be even greater.<sup>5</sup>

### 1.1.3 Sri Lanka's profile

Sri Lanka is an island in the Indian Ocean. The nation's geographic placement makes it highly vulnerable to hydro-meteorological disasters such as floods, droughts, landslides and slope failures. In the recent past, the frequency and the intensity of disasters and their impact on the nationals have escalated considerably.

The exacerbating impacts of disasters can be attributed to:

1. Climate change;
2. Anthropogenic activities like environmental degradation, unplanned development, improper management of waterways and economic activities concentrated in flood-prone and coastal areas;
3. Community vulnerabilities;
  - High population density and a demographic trend towards the aging population;
  - Large segments of the population constitute of the elderly, women, children and the differently abled who are disproportionately affected by disasters;
  - Concentration on climate-sensitive livelihood.

<sup>3</sup> Imf.org. (2018). The impact of climate change in Southeast Asia – IMF finance & development magazine. [online] Available at: <https://www.imf.org/external/pubs/ft/fandd/2018/09/southeast-asia-climate-change-and-greenhouse-gas-emissions-prakash.htm> [Accessed 31 Dec. 2019].

<sup>4</sup> Raitzer, David A.; Bosello, Francesco.; Tavoni, Massimo.; Orecchia Carlo.; Marangoni, Giacomo and Samson, Jindra Nuella G. (2015). Southeast Asia and the economics of global climate stabilization. [online] Manila: Asian Development Bank, p.9. Available at <https://www.adb.org/sites/default/files/publication/178615/sea-economics-global-climate-stabilization.pdf> [Accessed 31 Dec 2019].

<sup>5</sup> Mani, M., Bandyopadhyay, S., Chonabayashi, S., Markandya, A. and Mosier, T. (2018). South Asia's hotspots: The impact of temperature and precipitation changes on living standard. [online] World Bank Publications. Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf> [Accessed 31 Dec. 2019].

### 1.1.4 Historic overview of disaster management in Sri Lanka

Sri Lanka, albeit a relatively small island, is rich in many aspects: biodiversity and culture to name two. The roots of disaster management date back to the Sri Lankan monarchy with the fight against climate change in Sri Lanka being incepted by the kings. The Sri Lankan tank and reservoirs system bears witness to the remarkable human effort taken by the ancient kings to mitigate and adapt to disasters such as droughts and floods.

#### Methods adopted to mitigate droughts;

The major feature of the hydraulic civilization found in the dry zone was the construction of an intricate system of reservoirs for storing water for agriculture. This was because irrigated water from the reservoir became critical during the drought to go about daily routines. The reservoirs were originally used by villagers to store rainwater to be employed during the dry season for the crops (now referred to as 'rainwater-harvesting'). Thousands of such centuries-old reservoirs are spread through Sri Lanka's dry agro-rich areas – mainly in the Northern, North Central, North Western, Eastern and Southern provinces. Research by the International Water Management Institute (IWMI) in Colombo has found that these reservoirs can also be used to divert excess water during floods.<sup>6</sup>

#### Methods adopted to mitigate floods :<sup>7</sup>

1. Taking water away from people:

This is referred to as the structural approach. This approach was implemented along the basins of Kelani, Gin and Nilwala rivers as a measure to control inundation and consequent damages.

2. Taking people away from water:

This approach is a non-structural approach where timely flood warnings were given to people to move out of an area before the breach of floods. This method is at present practiced as the 'early warning system'.

These tanks and reservoirs are remarkable evidence that the concepts of mitigation and adaptation of climate change and disaster management have been engrained in the Sri Lankan culture even before these terminologies were conceptualized. Methods of mitigation for both droughts and floods were adopted by the kings to ensure the security of their people.

The systems followed back in the day show that the system had sufficient integration within communities. It was done by the people for the people and the acknowledgment of this necessity led to a greater appreciation. The community was vested at the core of disaster management. However, that culture seems a distant memory. Sri Lanka needs to reinstall the community resilience system

<sup>6</sup> Perera, A. (2019). Ancient kings fight climate change: Sri Lanka. [online] ReliefWeb. Available at: <https://reliefweb.int/report/sri-lanka/ancient-kings-fight-climate-change> [Accessed 31 Dec. 2019].

<sup>7</sup> Jegarasasingam, V. (2019). Sri Lanka: Country Report. [online] ADRC. Available at: <https://www.adrc.asia/countryreport/LKA/LKAeng98/index.html> [Accessed 31 Dec. 2019].

that is buried due to encroachment and poor maintenance and develop a protection scheme catering to modern requirements.

## 1.2 Describing the concepts of disaster and climate resilience

The United Nations (UN) Office for Disaster Risk Reduction (UNDRR)<sup>8</sup> defines “disaster management” as “the organization, planning and application of measures preparing for, responding to and recovering from disasters.”<sup>9</sup> As such, disaster resilience is a significant component of disaster management.

Disaster resilience has been part of the research literature for decades. With an unprecedented increase in climate volatility-induced disasters, resilience has now become a popular term used among nations following the adoption of ‘The Hyogo Framework for Action’ by 168 members of the UN. This ensures and prioritises reducing risks of disasters and building resilience to disasters. The term ‘resilience’ accommodates different societal needs to promote inclusion and reference, which is rightly what the concepts seek to achieve – to make it indigenous to said region of use.

## 1.3 Synergy between disaster and climate resilience, disaster risk reduction and climate adaptation

Disaster risk reduction (DRR) is “aimed at preventing and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and thereby to the achievement of sustainable development.”<sup>10</sup> Similarly, climate change adaptation seeks to detail the actions that ought to be taken to prepare the communities, other relevant stakeholders and ecosystems to cope with the changing climate conditions.

As the diagram below depicts, DRR and climate adaptation methods aid the promotion of “resilience”, the common denominator in this research.

<sup>8</sup> “UNDRR (formerly known as UNISDR) is the focal point of the United Nations system for disaster risk reduction and the custodian of the Sendai Framework, supporting countries and societies in its implementation, monitoring and review of progress”. Unisdr.org. (2019). UNDRR. [online] Available at: <https://www.unisdr.org/> [Accessed 31 Dec. 2019].

<sup>9</sup> Unisdr.org. (2019). Terminology - UNDRR. [online] Available at: <https://www.unisdr.org/we/inform/terminology> [Accessed 31 Dec. 2019].

<sup>10</sup> *Ibid*

**Diagram 2: Synergy between disaster and climate resilience, disaster risk reduction and climate adaptation**



## 1.4 Nexus between vulnerability, disaster and climate resilience

‘Vulnerability’ is a complex subject matter, involving various determinants and components, that is vastly contextual owing to its multiple definitions and different conceptual frameworks over the evolution of the discourse of disaster management. This publication deems to highlight the close interlink between vulnerability and resilience building.

What is vulnerability?

Some authors often consider vulnerability the opposite of resilience as disasters escalate existing vulnerabilities of the poor which pushes those living on the margins even closer to the edge whilst building resilience aids the communities to build back better. Further, vulnerabilities determine the impact of a disaster on an individual or community. Hence, appropriately identifying and effectively addressing vulnerabilities is fundamental when building resilience and has rightfully been placed as a core element of adaptation and disaster management.

For the purpose of this publication, “vulnerability” will be defined as “the characteristics determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.”<sup>11</sup> Borrowing partly from the definition of the Intergovernmental Panel on Climate Change (IPCC)<sup>12</sup> on vulnerability, this research has considered Sri Lanka’s political, cultural and institutional and natural resources processes as a facilitator in building a resilient Sri Lankan citizenry.

<sup>11</sup> *Ibid*

<sup>12</sup> “Created in 1988 by the WMO and the United Nations Environment Programme (UNEP), the objective of the IPCC is to provide governments at all levels with scientific information that they can use to develop climate policies. IPCC reports are also a key input into international climate change negotiations.” Ipcc.ch. (2019). *About — IPCC*. [online] Available at: <https://www.ipcc.ch/about/> [Accessed 31 Dec. 2019].

Vulnerability reduction constitutes an important common ground between the two areas of policy and practice.<sup>13</sup> This publication explores the ripple effects of addressing and curtailing environmental vulnerabilities as an ultimatum in building resilience.

**Diagram 3: Types of vulnerabilities**



<sup>13</sup> IPCC (2012). *Managing the risks of extreme events and disasters to advance climate change adaptation*. [online] Cambridge: Cambridge University Press, pp.65-108. Available at: [https://www.ipcc.ch/site/assets/uploads/2018/03/SREX-Chap2\\_FINAL-1.pdf](https://www.ipcc.ch/site/assets/uploads/2018/03/SREX-Chap2_FINAL-1.pdf) [Accessed 31 Dec. 2019].

## 1.5 Need for review

With the high rise in climate-induced disasters, the need for a policy revamp is timely and imperative. A review of this sort is intended to help understand the system that is currently in place and the necessary amendments that need to reignite the system and/or ensure efficient implementation of the system. It is undisputed that the Government of Sri Lanka (GoSL) has taken many policy measures to tackle the oncoming impediments of climate change and adequately build resilience. However, there still remains significant room for progress and measures that need to be revised or rehabilitated. Policy gaps that stall implementation have to be identified and opportunities for inclusion of improvised measures that ought to be taken to sufficiently prepare and build the citizenry of Sri Lanka have to be highlighted. As such this review envisions to make pragmatic recommendations that can be used to strengthen policy which is a significant tool in redirecting the much-needed focus on building community resilience.

## 1.6 Objectives

Reiterating the observations above, Sri Lanka, with scope for progressive improvements and amendments, has a comprehensive policy framework in place. However, there is an impairment in the implementation of the framework and in the dissemination of information to the grass-roots level. In order to improve resilience of the most vulnerable communities affected by the impacts of climate change, these impediments have to be identified and addressed. With the understanding that stringent policy facilitates conservation and strengthens environmental infrastructure which assists in building community resilience for climate-driven disasters, this publication intends to:

1. Identify the existing national and local government legal and policy framework aimed at building resilience. It aims to understand the specific socio-economic and long-term environmental impacts of climate-induced disasters and how it affects the vulnerable communities in the country with specific attention to cross-cutting issues and sectors susceptible to DRR in the areas on land-use and development planning, agriculture and water resources management;
2. Identify gaps in strengthening ecological infrastructure in the existing legal and policy framework of Sri Lanka in the areas of disaster management, land-use and development planning, agriculture, water resources management and insurance and financing through a thorough review of laws, regulations and policies and a series of stakeholder consultations with national and local administrators. This enables to understand the impracticalities of certain policies and systems currently in place to address climate change, disaster management and DRR;

3. Evaluate the means of mainstreaming disaster resilience in developmental strategies and climate sensitive cross-cutting sectors;
4. Provide pragmatic recommendations of possible means of mainstreaming disaster resilience into development strategies and plans, whilst considering vulnerabilities faced by marginalized groups like women.

## 1.7 Methodology

Methods utilized for the compilation of this publication are:

- A detailed review of the existing national and local government policies and legal framework which aligns with climate change and includes disaster resilience in rural areas, with specific reference to agriculture, plantation sector, forest cover, land-use changes, water resources management, soil management and developmental projects. Documents perused include circulars, regulations, policies, strategies, action plans and programmes among others.
- Interviews with the relevant national and local level government institutions to identify existing administrative structures and relevant policies, circulars, regulations and strategies which are aligned with and include disaster resilience in rural areas with specific reference to agriculture, irrigation, environment, water and natural resources management, forestry, business development and other physical infrastructure.
- Extensive multi-stakeholder consultations and discussions were carried out, with the aim of identifying the strengths, opportunities and gaps of the present DRM systems, in three districts, namely Kalutara, Ratnapura and Kilinochchi, with personnel engaged in climate change, DRM and livelihood sectors such as district/ divisional secretaries; planning directors at district secretariats; and officials of the District Disaster Management Coordination Units (DDMCU), Department of Physical Planning, Agrarian Services Department, Irrigation Department, Small and Medium-scale Enterprises (SMEs), Non-governmental Organisations (NGOs) and Community-Based Organisations (CBOs) operating in the districts of Kalutara, Kilinochchi and Ratnapura.
- A literature review on climate-induced disasters and its impacts within the Sri Lankan context and disaster risk management (DRM) initiatives and best practices which have been already implemented.

## 1.8 Scope of the publication

The common consensus regarding the subject matter is that building resilience is a multi-faceted expansion across a wide array of areas. Having comprehended the conceptual vastness, the publication focuses on a few areas which would contribute to a stronger environment that mitigates impacts from disasters and reduces the frequency of disasters as a conserved environment has the ability to absorb minor incidences/shocks. The ultimate aim of the publication is improving ecological infrastructure and advocating for a livelihood resilience model that will ensure long-term sustainability which resonates with the core of resilience.

Chapter Two:

## FRAMEWORKS PROMOTING DISASTER AND CLIMATE RESILIENCE



## 2.1 Global disaster and climate resilience framework

The global development frameworks adopted in 2015 and 2016 are structured around six separate but interrelated Agreements:

1. Sendai Framework for Disaster Risk Reduction 2015-2030;
2. 2030 Agenda for Sustainable Development Goals
3. Paris Agreement under the United Nations Framework Convention on Climate Change;
4. The World Humanitarian Summit- “Agenda for Humanity”;
5. Habitat III- “New Urban Agenda”; and

Addis Ababa Action Agenda of the Third International Conference on Financing for Development.

The synchronous adoption of the aforementioned UN Agreements has created a rare but significant opportunity to build coherence across different but overlapping policy areas. For example, taken together, these frameworks make for a more complete resilience agenda as building resilience requires action spanning development, humanitarian, climate and DRR areas. This coherence<sup>14</sup> will serve to strengthen existing risk fragility and resilience frameworks for multi-hazard assessments, and aim to develop a dynamic, local, preventive and adaptive urban governance system at the global, national and local levels.

Sri Lanka is party to the abovementioned six Agreements and has made various commitments to achieve the objectives/goals imposed by these instruments.

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<sup>14</sup> i.e. coherence between the Sendai Framework, the SDGs, the Climate Agreement, the New Urban Agenda and the World Humanitarian Summit, and the role of science in their implementation.

**Table 2: Coherence between the six global development frameworks adopted in 2015 and 2016**

| <b>Development</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Climate Change</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Disasters</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>SDGs form the 2030 Agenda for Sustainable Development. They represent the latest global targets in pursuit of poverty reduction, sustainable development and peace. Resilience features in two goals and eight targets, linked to poverty, built infrastructure and human settlements, agricultural production and vulnerability to climate extremes and disasters. This represents a marked shift from the Goals' predecessor, the Millennium Development Goals (MDGs), in which resilience did not appear.<sup>15</sup></p>                                                                                                      | <p>The Paris Agreement made at the 2015 Paris Climate Conference (known as COP21) featured resilience as an integral component of climate change adaptation, linked to concepts of building adaptive capacity and reducing climate change vulnerability. This gave resilience a more prominent role than in previous climate change agreements, where references to resilience were insignificant. The Paris Agreement also places emphasis on the resilience of, and links between, socioeconomic and ecological systems.<sup>16</sup></p>                                                                                                                                                                                                                                                    | <p>The Sendai Framework builds on its predecessor, the Hyogo Framework for Action 2005–2015. Its overall goal is framed around strengthening resilience in order to achieve its expected outcome of reduced disaster risk and losses. Resilience also features across its global targets and indicators. The emphasis on anticipatory action in building resilience reflects a broader shift within the disasters-community away from the idea of managing disasters and towards the idea of managing risk.<sup>17</sup></p>                                                                                                                                                                |
| <b>Humanitarian</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Housing and Sustainable Urban Development</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Financing for Development</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p>The World Humanitarian Summit signalled the start of a formal global process to expedite reform in the humanitarian sector. Resilience features heavily in its 'Agenda for Humanity' and related consultation documents, reflecting its increased importance across the sector over the past decade. The concluding 'Commitment to Action' employs resilience in a number of ambitious agendas, including vulnerability reduction and risk management, increased capacity for early action and preparedness, the localisation of aid and more joined-up action to bridge the humanitarian and development divide.<sup>18</sup></p> | <p>Habitat III was the first UN global summit after the adoption of SDGs. It discussed the important challenge of how cities, towns, and villages are planned and managed in order to fulfill their role as drivers of sustainable development and, hence, shape the implementation of new global development and climate change goals.<sup>19</sup> The ultimate aim of the conference, 'New Urban Agenda' is to promote urban ecology and resilience which is at the core of its policy statements.<sup>20</sup> The argument is that we should work towards a future that is environmentally sustainable, with ecologically healthy, low-carbon, resource-efficient, and resilient cities that have the ability to mitigate and adapt to a variety of shocks and stresses.<sup>21</sup></p> | <p>Addis Ababa Action Agenda marks a milestone in forging an enhanced global partnership to foster universal, inclusive economic prosperity and improve people's well-being while protecting the environment. The Action Agenda recognizes the Sendai Framework as the instrument to manage and reduce risks. The Action Agenda also encourages the consideration of climate and disaster resilience in development financing; refers to the need to manage and finance disaster risk as part of sustainable development strategies and cost-effective measures; and recognizes that shocks and disasters are on the rise and we need enhance efforts to build resilience.<sup>22</sup></p> |

## 2.2 Existing national policy and legal framework to promote disaster and climate resilience

Mirroring international goals and initiations, Sri Lanka has an arguably strong disaster management system in place. Acknowledging its climate vulnerabilities being an island nation, Sri Lanka has introduced and implemented numerous legal policies and frameworks to address climate-related disasters. The key institutions that take the forefront on these mammoth obligations are:

1. The ministry in-charge of disaster management;
2. Disaster Management Centre (DMC);
3. National Council for Disaster Management (NCDM);
4. National Disaster Relief Service Centre; and
5. National Building Research Organization

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<sup>15</sup> Peters, K. and Tanner, T. (2016). Briefing: Resilience across the post-2015 frameworks: how to create greater coherence. [online] Odi.org. Available at: <https://www.odi.org/sites/odi.org.uk/files/resource-documents/11006.pdf> [Accessed 31 Dec. 2019].

<sup>16</sup> *Ibid*

<sup>17</sup> *Ibid*

<sup>18</sup> *Ibid*

<sup>19</sup> Habitat III. (2019). About Habitat III - Habitat III. [online] Available at: <http://habitat3.org/the-conference/about-habitat-3/> [Accessed 31 Dec. 2019].

<sup>20</sup> Habitat III. (2016). Habitat III policy papers: Policy paper 8 - urban ecology and resilience. [online] New York: United Nations. Available at <http://habitat3.org/wp-content/uploads/Habitat%20III%20Policy%20Paper%208.pdf> [Accessed 31 Dec. 2019].

<sup>21</sup> *Ibid*

<sup>22</sup> UNISDR. (2015). The Third International Conference on Financing for Development. [online] Available at: [https://www.unisdr.org/files/45300\\_unisdrffdreportexternal31072015.pdf](https://www.unisdr.org/files/45300_unisdrffdreportexternal31072015.pdf) [Accessed 31 Dec. 2019].

## 2.3 Policy interventions

**Table 3: Policy interventions in promoting disaster resilience**

| Implementer              | Policy/<br>Intervention/Act                                                      | Purpose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DMC and the NCDM         | Disaster Management Act, No. 13 of 2005                                          | The Act provides for the establishment of the DMC and the NCDM. Consequently, a comprehensive National Disaster Management Plan and a National Emergency Operation Plan were prepared and implemented by the DMC. Preparing and implementing programmes and plans for disaster preparedness, mitigation, prevention, relief, rehabilitation and reconstruction activities and coordinating among organizations which implement such plans are considered stark obligations of the DMC.                                                                                                                |
| DMC and NCDM             | National Policy on Disaster Management, 2013 (NPDM)                              | The Policy denotes disaster management as a collective responsibility of government, NGOs, religious organizations, the private sector and communities. The policy was based on the Hyogo Framework for Action for achieving disaster resilience for vulnerable communities.                                                                                                                                                                                                                                                                                                                          |
| DMC                      | Sri Lanka National Disaster Management Plan, 2013<br><br>(SLNDMP 2013)           | This Plan was developed for a period of five years from 2013 to 2017, and it conforms to the Disaster Management Act of 2005 and the NPDM, 2013. The goal of this Plan is to translate the NPDM 2013 into action, in order to achieve the overall objective of establishing mechanisms/systems for DRM in Sri Lanka as a multi-sectoral, inter-ministerial and inter-agency activity by identifying and assessing the capacities of existing agencies for improving their capacities and mandates as necessary to implement the identified tasks, using methodologies and concepts already developed. |
| DMC and in line Ministry | Sri Lanka Comprehensive Disaster Management Programme, 2014-2018<br><br>(SLCDMP) | This Programme aims to ensure the safety of Sri Lanka by reducing direct and potential risks to the country and minimizing the impacts on people, properties and the economy. It focuses on mainstreaming DRR and climate change adaptation into the development processes, in pursuance of which the SLCDMP has been incorporated into the development planning process at all levels. It also emphasizes the importance of ensuring community resilience through long-term DRR                                                                                                                      |

| Implementer                     | Policy/<br>Intervention/Act                                                  | Purpose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DMC                             | Towards a Safer Sri Lanka:<br>Road Map for Disaster Risk Management,<br>2005 | A comprehensive programme for DRM which was developed by the GoSL with the support of the UN Development Programme (UNDP).                                                                                                                                                                                                                                                                                                                                                                                                                     |
| DMC                             | National Emergency Operations Plan,<br>2013<br><br>(NEOP 2013)               | A manual of procedure developed at a national level under the Disaster Management Act of 2005 which is an important policy initiative in DRR and in promoting community resilience. This supplements the policies and principles embedded in the SLNDMP 2013. The NEOP 2013 describes the management arrangements, relationships, operational procedure, mechanism to ensure effective response to disaster and/or emergency situations while specifying roles and responsibilities of different stakeholders in different disaster scenarios. |
| DMC                             | National Disaster Risk Management Plan (Draft)<br>(NDRMP)                    | The NDRMP which will intently span across 2018-2030 is a succession to the SLCDMP. The NDRMP is by large based on similar principles as the SLCDMP, with slight deviation to the effect that the NDRMP will focus on actual, tangible implementation at all levels with monitoring and evaluation. Inclusive participation is highlighted as a key objective.                                                                                                                                                                                  |
| DMC                             | Community Resilience Framework,<br>2015                                      | The objective of this Framework is to guide and facilitate local authority (including divisional secretariats) officials and DMC members to work towards resilience-building at local to divisional level. This entails development planning committees to assess risks and as such plan disaster preparedness to reduce community vulnerability.                                                                                                                                                                                              |
| Sustainable Development Council | Sri Lanka Sustainable Development Act, No. 19 of 2017                        | <p>This Act is considered a stark supplement to the existing legislature and a progress in the right direction. It provides for the establishment of the Sustainable Development Council and for the implementation of the National Policy and Strategy on Sustainable Development.</p> <p>Further, in terms of section 12 of the Act, every minister must prepare a Sustainable Development Strategy for the respective ministries and government institutes in line with the Sustainable Development Policy &amp; Strategy.</p>              |

| Implementer                                                              | Policy/<br>Intervention/Act                                                              | Purpose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The Climate Change Secretariat together with the Ministry of Environment | Climate Change Policy                                                                    | <p>This Policy (adopted in 2012) provides policy support for fostering adaptation and mitigation efforts within the framework of sustainable development in the country.</p> <p>The key objectives thereof are to sensitize and create awareness amongst the communities periodically on the country's vulnerability to climate change; take adaptive measures to avoid/minimize adverse impacts of climate change on the people, their livelihoods and ecosystems; mitigate greenhouse gas emissions in the path of sustainable development; promote sustainable consumption and production; enhance knowledge on the multifaceted issues related to climate change in the society and build their capacity to make prudent choices in decision-making; develop the country's capacity to address the impacts of climate change effectively and efficiently; and mainstream and integrate climate change issues in the national development process.</p>                                                                                                                                                                                                       |
| The Climate Change Secretariat together with the Ministry of Environment | National Adaptation Plan for Climate Change Impacts in Sri Lanka, 2016 to 2025 (NAP-CCI) | <p>The NAP-CCI covers adaptation needs at two levels, namely: adaptation needs of key vulnerable sectors and cross-cutting national needs of adaptation. Nine vulnerable sectors and the respective sectoral plans have been identified therein, and food security and water are two key areas that have been identified as having direct bearing to the resilience of the people. According to the "Technology Needs Assessment and Technology Action Plan for Climate Change Mitigation" introduced in 2014, the adaptation technology options for the food/agriculture sector have been identified under the following categories:</p> <ul style="list-style-type: none"> <li>a) Sustainable land management;</li> <li>b) Crop diversification and precision farming;</li> <li>c) Ecological pest and disease control;</li> <li>d) Rainwater harvesting;</li> <li>e) Solar-powered drip irrigation;</li> <li>f) Development of appropriate breeds;</li> <li>g) Development of appropriate varieties; and</li> <li>h) Responsive agricultural extension and the adaptation benefits of the proposed technologies of the same also set out therein.</li> </ul> |

| Implementer                                                                | Policy/<br>Intervention/Act                            | Purpose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ministry of Environmental and National Council for Sustainable Development | National Action Plan for the “Haritha Lanka Programme” | NAP focuses on 10 broad mission areas including climate change, land resources and water. For each mission area strategies have been listed with a set of targets to achieve within three timeframes: short, medium and long-term. Under this programme, more weight to strategies/actions targeting mitigation (i.e. reducing GHG emissions) has been provided. However, it is observed that adaptation actions in areas of infrastructure vulnerability, land-use zoning, rainwater harvesting, increase of vectors and food security have also been recognized.                                                                                                                                                                                                                                             |
| Presidential Secretariat                                                   | Sustainable Sri Lanka 2030 Vision and Strategic Path   | Addressing poverty and strengthening the socio-economic aspects of people with specific attention to communities who are below the poverty line has been a significant obligation of governments. Such responsibility was further highlighted by the MDGs and SDGs within the ‘2030 Agenda’ which has a direct relevance to disaster management due to its association with goals dealing with poverty, food security, sustainable cities and climate change amongst other goals. In line with the 2030 Agenda, the vision leading up to 2030 for Sri Lanka was codified as: “Sustainable Sri Lanka 2030 Vision”. This is a strategic document introduced by the GoSL setting out a practical pathway to achieve the sustainable development vision following the Balanced Inclusive Green Growth (BIGG) path. |

### 2.3.1 Gaps and challenges

With substantial investment in DRR and disaster mitigation, there is a paradigm shift in Sri Lanka’s disaster management system from its previous approach of post-disaster relief and recovery towards resilience building. However, there is sufficient evidence to prove that post-disaster activities have distributional and targeting issues too. It is observed that there are no adequate attempts for a common and shared framework in building resilience with the involvement of the sectoral agencies. Most of the cross-cutting sectors act in isolation, whilst DMC has its own mandated strategies and actions for promoting resilience. This leads to duplication and wasted donor investment.

- Appropriate action plans have not been set to fall in line with the policy statement.
- Local authorities lack capacity and training; the impartation of knowledge has to take place appropriately.

- Lack of dissemination of information on the rights of communities emanating from the policy for an instance;
  - right to information: information on vulnerability assessment, on appropriate response and on post disaster response
  - right to participate: participation in disaster related as well as development related decision-making in vulnerable areas,
  - right to seek accountability: particularly in disaster relief measures, to seek accountability and redress by accessing the divisional or district secretary or a committee appointed at the local level by the NCDM.
- Implementation of the policies, laws and regulations has been weak due to poor coordination and integration among the government departments and institutions; and poor mobilization of the private sector, NGOs and the civil society towards the intended goals.

### 2.3.2 Way forward: Opportunities and recommendations

- A comprehensive community resilient policy looping in all the line ministries.
- NDRMP is in a draft stage. At this juncture, measures should be adopted to ensure that lessons learnt from previous plans are well-reflected.
- Link the ‘Disaster Management Roadmap’ to the country’s development plan and develop an appropriate action plan with direct provision for a monitoring and evaluation process.
- Revising the disaster management corporate plan to be consistent with the Sendai Framework.
- Disaster Management Policy/NPDM should include rehabilitation and restoration of land and ecosystems affected by droughts and floods as a part of recovery.
- Community mobilization and awareness on their role (rights and responsibilities) in building resilience and managing disasters. For instance, agricultural malpractice contributes to escalation of disasters and its impacts. These activities should perhaps be integrated into the Community Resilience Framework, which is tied in with disaster management action points.
- Adequate resource mobilization with delegated authority for DRR management in the provincial, regional and local authority level. DRR aspects should be strengthened further using both physical measures and socio-economic instruments.
- Creating awareness among all line government agencies on DRR principles, concepts, laws and regulations at the district, divisional and local authority levels.
- All DRR, climate change adaptation and mitigation programmes must be designed based on a robust analysis of power dynamics and inequalities as part of the analysis of the causes of vulnerability. This needs to be carried out by working with the most vulnerable sections of

society and must address the underlying reasons for their specific vulnerabilities. Vulnerability profiles of marginalized groups including women, children and differently abled people should be taken into consideration when designing and implementing such programmes.

- Increasing the institutional capacity and coordination among all line agencies in DRR is key as such disaster management activities are implemented through the district secretariat (as it is not a devolved subject to local authorities).
- Adequate resources should be utilized for DRR, as opposed to recovery and relief, based on the financial and social vulnerabilities in the district.
- Sensitizing and creating awareness among communities on the necessity of successfully coping up with disasters that are unavoidable, in order to return back to normalcy or perhaps even a better condition within the earliest possible time with considerable ease. Such is essential rather than living with the mindset of “disaster is a blessing as it will turn out to be a ‘*RAN WATHURA*’ (golden water) whereby they are entitled to be a part of government relief and recovery.
- Decentralize the management mechanism for disaster management in the district, delegating financial and other resources and duties and responsibilities to community level.
- Addressing institutional fragmentation is likely to require major strengthening of the climate cell or similar bodies. This may involve strengthening their legal mandate and powers for convening, coordinating and improving the calibre of staffing and capacity building. These changes must elevate these key entities from being administrative to strategic agents of change<sup>23</sup>.

<sup>23</sup> Suhardiman, D.; de Silva, S.; Arulingam, I.; Rodrigo, S.; Nicol, A. (2019). *Review of water and climate adaptation financing and institutional frameworks in South Asia. Background Paper 3*. [online] Colombo, Sri Lanka: International Water Management Institute (IWMI), p. 79. Available at <http://www.iwmi.cgiar.org/Publications/Other/PDF/sawi-paper-3.pdf> [Accessed 31 Dec. 2019].

Chapter Three:

## **STRATEGIC AREAS OF INTERVENTION IN BUILDING RESILIENCE**



‘Community resilience’ is defined as the ability of a community to ‘bounce back’ and recover using its own resources<sup>24</sup>. It can also be explained as the ability of groups or communities to cope with external shocks and stresses as a result of disaster, social, environmental and political change.<sup>25</sup>

Reducing the impact of shocks and stresses to the community by natural/manmade hazards and disasters is a multifaceted task. As such, community resilience is not a one policy decision, but a systemic change across many dimensions. Achievement is only possible by a combined effort of cross-cutting areas which is a typical outcome of an integrated system in a country. But to reach such an outcome, it is necessary to accurately and timely identify the key vulnerabilities of the community.

The focus of this chapter is to identify the issues and gaps that give rise to vulnerabilities in the areas of:

- Land-use and development planning
- Agriculture and plantation sectors
- Water resources management

and provide pragmatic recommendations, which would consequently strengthen ecological infrastructure resulting in community resilience.

In view of the above, mainstreaming disaster resilience in three main areas of intervention would be discussed under this Chapter. They are:

1. Mainstreaming disaster resilience into land-use and development planning,
2. Mainstreaming disaster resilience into agriculture and plantation sectors,
3. Mainstreaming disaster resilience into water resources management.

### 3.1 Mainstreaming disaster resilience into land-use and development planning

Appropriate land-use and development planning is key to ensuring sustainable benefits. Land-use planning is a systematic assessment of the physical, social, environment and economic factors in such a manner as to encourage and assist land users and developers in selecting options that would optimize benefits to all in a sustainable manner. Consequently, land-use and development planning is absolutely crucial to Sri Lanka, as, if used wisely, it is an effective tool in strengthening ecological infrastructure whilst probing economic growth, controlling poverty alleviation and aiding improved quality of life across the nation. Given Sri Lanka’s climate vulnerability, strategic planning is pertinent to minimize externalities; this can be done by aligning land-use and development in a manner that

<sup>24</sup> Disaster Management Centre Ministry of Disaster Management (2015). *Community Resilience Framework in Sri Lanka*. [online] Available at [https://www.preventionweb.net/files/54485\\_communityresiliencfswsl.pdf](https://www.preventionweb.net/files/54485_communityresiliencfswsl.pdf) [Accessed 31 Dec. 2019].

<sup>25</sup> *Ibid*

will protect key ecosystems (such as urban wetlands) that thrive in shielding and mitigating disasters which in turn promotes resilience.

Keeping the aforementioned as guidelines the existing policy interventions have been scrutinized.

### 3.1.1 Policy interventions

**Table 4: Policy interventions in mainstreaming disaster resilience into land-use and development planning**

| Implementer                                                                         | Policy/ Intervention/ Act                                                   | Purpose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Natural Resources Management Division- Ministry of Environment and Renewable Energy | National Action Plan on Combatting Land Degradation of Sri Lanka, 2015-2024 | This Action Plan is introduced to meet the guidelines of UN Convention to Combat Desertification (UNCCD) to address land degradation in Sri Lanka through improved land productivity, to restore (or preserve) land, to establish more efficient water usage and to introduce sustainable development in the affected areas and finally to improve the living conditions of those populations affected by droughts and desertification.                                                                                                                                                                                                                                                        |
| National Physical Planning Department and line Ministries                           | National Physical Planning Policy and Plan, Sri Lanka -2030                 | <p>This Plan is introduced for physical plan-making and implementation of identified projects in Sri Lanka. Physical plans are developed for each province with its own key objectives and priorities. This Plan was revised in 2018 and an amended plan until 2030 was introduced with a better vision.</p> <p>It advocates for significant weightage to be given to aspects of climate change impacts and building resilience. The entire Central, Sabaragamuwa Provinces and few Grama Niladhari divisions of Kalutara have been identified as fragile zones/ disaster-prone areas in Sri Lanka where certain restrictions have been proposed when embarking on development activities.</p> |
| Ministry of Lands                                                                   | National Land Use Policy, 2007                                              | This Policy focuses on rational utilization of lands as a resource, in the national interest, in order to ensure food security, a high quality of life, equity and ecological sustainability.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Implementer                                          | Policy/ Intervention/ Act                                               | Purpose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Urban Development Authority (UDA)                    | The Urban Development Authority Planning and Building Regulations, 1986 | <p>A set of comprehensive urban planning and building regulations was developed in 1986, and physical development activities within the UDA are guided by those regulations.</p> <p>In contravention of the principle of centralization of urban development functions to a single authority, the UDA law has provisions to create special regulations for areas declared as special projects in towns under the same law. While it was developing more conventional planning and building regulation for general urban development, the UDA has allowed special programmes to innovate and practice different set of regulations which are appropriate to the special physical and socio-cultural situations of the towns.</p> |
| UDA                                                  | The UDA 2018-2022 Strategic Plan                                        | This Plan intends to promote planned, integrated and sustained urban development for the physical, social and economic well-being of the nation. It observes the importance of having improved solid waste management to improve the living environment and the investment in disaster preparedness and aims to fulfil the said goals in planning cities and towns.                                                                                                                                                                                                                                                                                                                                                             |
| UDA and Local Authorities with some delegated powers | Urban Development Authority Law, No. 41 of 1978 (UDA Law)               | <p>The UDA Law provides for the establishment of the UDA to promote integrated planning and implementation of economic, social and physical development of UDA areas.</p> <p>The amendment to the UDA Law introduced in 1982 made it mandatory for the UDA to prepare development plans for all areas declared under section 3 of the UDA Law and also authorized it to carry out physical development control in such areas.</p>                                                                                                                                                                                                                                                                                               |

| Implementer                                   | Policy/ Intervention/ Act                                        | Purpose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| National Physical Planning Council            | Town and Country Planning Ordinance, No. 16 of 1946 (as amended) | This Ordinance provides to authorize the formulation and implementation of a National Physical Planning policy; the making and implementation of a National Physical Plan with the object of promoting and regulating integrated planning of economic, social, physical and environmental aspects of land in Sri Lanka; to provide for the protection of natural amenities, the conservation of natural environment, buildings of architectural and historic interest and places of natural beauty; to facilitate the acquisition of land for the purpose of giving effect to such plan; and to provide for matters incidental to or connected with the matters aforesaid. |
| Local Authorities and Line Ministry           | Housing and Town Improvement Ordinance, No. 19 of 1915           | This Ordinance provides for the better housing of the people and the improvement of towns. It was expected to deal with existing problems of insanitary conditions and urban overcrowding as well as to prevent such conditions in the future. The law has given a detailed Schedule of Rules as standards to be enforced by local authorities for the prevention of occurrences of environmentally insanitary situations and the construction of structurally unsafe buildings for public and human habitation in urban areas.                                                                                                                                            |
| Ministry of Lands and Divisional Secretariats | Crown Land Encroachment Ordinance, No.12 of 1840                 | This Ordinance is to acquire lands for plantation crops and convert forest land into agriculture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ministry of Lands and Divisional Secretariats | Land Development Ordinance, No. 19 of 1935-                      | This Ordinance is to provide for the systematic development and alienation of crown lands in Sri Lanka.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Ministry of Lands and Divisional Secretariats | State Lands Ordinance, No. 08 of 1947                            | This Ordinance makes provision for the grant and disposition of State lands in Sri Lanka; for the management and control of such lands and the foreshore; and for the regulation of the use of water of lakes and public streams.                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Implementer                   | Policy/ Intervention/ Act              | Purpose                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Coast Conservation Department | Coast Conservation Act, No. 57 of 1981 | <p>This Act makes provisions for the preparation of a coastal zone management plan; to regulate development activities within the coastal zone; and to make provision for the formulation and execution of schemes of work for coast conservation within the coastal regions.</p> <p>The Act was amended by Coast Conservation (Amendment) Act 1988, No. 64 of 1988.</p> |

### 3.1.2 Gaps and challenges

- The National Land-use Policy of 2007 fails to reflect and address the growing land scarcity, issues with land tenure and ownership, and land fragmentation and degradation.<sup>26</sup>
- Institutional implementation shortcomings:
  - No serious effort to implement the Soil Conservation Act: dilution of institutional structure is an inducer of such outcomes.
  - Lack of effective implementation of land-use plans and grave non-adherence to such implemented plans.
  - Responsibility of land management has been spread over a number of ministries, making implementation a close to impossible task.
- Land fragmentation and lack of clear titles are increasingly becoming visible posing a negative impact on the productivity of agricultural lands, while paving way for encroachments to State lands.
- Encroachments into river/ reservoir/water body reservation areas, public places, wildlife and forest reservations and protected areas as a result of inadequate laws or enforcement.
- The practice of regularizing encroachments in contrary to all applicable laws and procedures dealing with the relevant subject areas. This situation has aggravated deforestation and the potential for water scarcity in the country further affecting land degradation. Soil erosion is the most critical form of land degradation, and large-scale mountain forest clearing for the plantation sector tremendously contributed to this cause.
- Climate change is not accounted for in decision-making and urban planning.

<sup>26</sup> Institute of Policy Studies of Sri Lanka (2017). *Sri Lanka: State of the economy - 2017 - Demographics, labour markets and growth*. Colombo: IPS Sri Lanka, pp.162-163.

- Strategic land-use, as suggested by the National Physical Plan; implementation of zonal arrangements as per the Urban Development Plan for development activities; and adequate law enforcement and adherence to environmental safeguard are the key requirements for effective land-use in the country. Such land-use would contribute to ensuring a disaster-free living environment for people who live in landslide/ flood-prone areas. Farmers in the dry zone of the country generally depend on the village tank systems to support their livelihood. The high rainfall variations sometimes lead to extreme weather conditions of droughts and water shortages leading to widespread livelihood damages.
- Although certain steps have been taken to integrate DRR into development policies and planning as a cross-cutting issue, it requires further improvement. There is a lacuna in streamlining DRR into sectoral policies and regulations for effective implementation.

### 3.1.3 Way forward: Opportunities and recommendations

#### *Recommendation one: Policy interventions for building resilience*

- Need for a comprehensive land-use policy, integrating amongst other things land scarcity, issues with land tenure and ownership, and land fragmentation and degradation. The policy has to be approached through the climate change lens. Land-use policy should include considerations of urban planning, land degradation assessment, informal and non-permanent housing, anticipating demographic and environmental changes which have a direct impact on resilience.
- Introduction of Disaster Impact Assessment (DIA) for development projects in sensitive areas / fragile zones / special areas/ coastal belt and most vulnerable areas for disasters.
- Execute the guidelines and procedures adopted from DIA by the DMC under the 'Road Map for DRM (2005–2015)' to integrate DIA aspects into the approval process of all development projects. The DIA could also be incorporated within the framework of the Environmental Impact Assessment.
- Amendment to the National Environmental Act to;
  - Include the process of strategic environmental assessment; and
  - Strengthen the environmental impact assessment process, especially the constituents of public comments and public hearing.
- Establishing a standardized guideline in approaching and conducting environmental impact assessments.
- The National Physical Plan - 2050 has to be reviewed focusing on real time information available on climate change and disaster vulnerabilities. Specific considerations include:
  - The validity of the overall Structural Plan, in terms of the five metropolitan areas identified in the amended Physical plan, lacks major urban agglomerations. Additionally,

these plans are not aligning with several other action plans and goals set out by the GoSL in the sustainable development context.

- The newly identified constraints and emerging challenges such as the increase in landslide-prone areas, the need for reforestation as well as emerging potentials such as wind power, petroleum deposits and clean energy trends need to be incorporated into the National Physical Planning, according more significance to zoning and proper land utilization.
- Need for an Action Plan formulating and enforcing guidelines for construction/ building in disaster-prone areas.
- Improvement and revision of the application procedure for approval of housing and building construction by introducing regulations to make it mandatory to consider DRR aspects, when seeking approval for land subdivision plans. This could be formalized by issuing a certificate of compliance as appropriate.
- Introducing sound rural development planning and proper land and natural resources management, particularly, in sensitive areas including rivers, hilly areas, coastal flood plains, dry lands, wetlands and all other areas prone to droughts, land slides and flooding.
- Adopt regulations, standards and criteria for rehabilitation and reconstruction practices, particularly in informal and marginal settlements.
- Regulate the extraction of natural resources including gem, sand, metal and gravel. Sound environmental and natural resource management and land-use planning, including marine resources, are also essential for sustainable development of the area. Enforce mining and environmental protection laws against unauthorized operations and operators, license holders and take legal steps to acquire such abandoned mined pits, quarries and degraded lands which have not been properly restored under mining/ gemming laws and regulations.
- Adequate enforcement of environmental protection laws, reservation and State land protection laws should be applied to the district as forests, protected areas, tanks and canals reservations are under threat of encroachments and unregulated rapid development projects including resettlement.
- Implementation of a new urban development Act consisting an approval process and mandatory green building initiatives (i.e. urban horticulture systems that utilize rainwater, home gardening and rooftop cultivations).

***Recommendation two: Develop transformative capacity by encouraging good governance and transformation of leadership to local authorities***

- Local context coordination among different organizations dealing with land resources management.

***Recommendation three: Research, improved dissemination of information, education, training and use of technology for building resilience***

- In the modern context, attempts are made to introduce an environmental sustainability dimension into land-use policy, and such approaches are mostly an ecosystem approach and technical advancements in land-use planning. Hence, for this to be practically attainable, the investment in research and the suitable technology is crucial.
- Investing in DRR for resilience prescribes the integration and mainstreaming of DRR within several critical facilities (For example: schools, hospitals and other physical infrastructures).

***Recommendation four: Pursue solutions that deliver resilience***

- Promote sustainable use and management of ecosystems, environment and natural resources by way of regularizing timber harvesting, sand and gravel mining, quarrying, and gemming industries with special attention to sensitive and fragile zones of the country.
- Providing alternative income generating opportunities as it is widely accepted that environmental degradation and poverty are closely linked. Rural communities rely on natural resources mainly on land for survival but do not have the ability to invest on improvements to improve or conserve the resource base.
- Promoting alternative sources of income, that is not environmentally degrading. (For example vocational training for green jobs).
- To reduce runoff with permeable surfaces in home gardens: Vegetated ground surfaces in home gardens are a solution to increase infiltration and reduce runoff.
- Encourage the community to practice landslide remedial measures to minimize the damage that occurs from landslides.
- Optimize application of technical knowledge in road construction and other development activities to minimize disaster impacts.
- Tree planting and bioengineering or the use of natural matter for slope-protection systems which blends into the landscape. Emphasis to be placed on the use of locally available vegetation, rocks, branches, wood or soil in contrast to man-made materials as a remedial measure.
- Slope stability improvement should be permitted only if there are no alternative sites in hazardous areas, incorporating the objectives of proper planning and sustainable development. Only selected land-use should be allowed if such activities are necessary in hazardous areas.

***Recommendation Five: Community empowerment through community participation in decision-making***

- Community involvement in the process of carrying out an environmental impact assessment.
- Encouraging community participation in commenting and reviewing environmental impact assessments.
- Community participation in preparing management plans for key sectors. Example: forest management plans could thus include dimension of community forestry.

## 3.2 Mainstreaming disaster resilience into agriculture and plantation sectors

The Sri Lankan economy relies heavily on climate-sensitive sectors such as agriculture, forestry and energy generation.<sup>27</sup> The agriculture sector is one of the most vulnerable sectors to climate change.<sup>28</sup> It is observed that the contribution to the GDP from the agriculture sector has declined substantially over time. Nevertheless, since 25.5 per cent of the country's labour force is engaged in agriculture<sup>29</sup>, the sector retains its dominance over Sri Lanka's workforce thus making it imperative that critical implications on the livelihood of such communities due to climate-induced disasters are curtailed. This has resulted in the GoSL introducing the following policy interventions.

### 3.2.1 Policy interventions

**Table 5: Policy interventions in mainstreaming disaster resilience into agriculture and plantation sectors**

| Implementer/s           | Act or Policy Intervention        | Scope    | Purpose/ objective                                                                                                                                                                                                                                                                                                                                 |
|-------------------------|-----------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ministry of Agriculture | National Agriculture Policy, 2007 | National | This policy addresses the food, floriculture and export agricultural crops sectors while seven overarching goals and objectives have been specified under this policy. Irrigation and water management, land-use, soil conservation, agricultural credit, and agricultural insurance are such areas where specific recommendations have been made. |

<sup>27</sup> UNDP (n.d.) *Climate Change Adaptation -Sri Lanka*. Available at: <http://www.adaptation-undp.org>

<sup>28</sup> Fisher, M. C., Henk, D. A., Briggs, C. J., Brownstein, J. S., Madoff, L. C., McCraw, S. L., & Gurr, S. J. (2012). 'Emerging fungal threats to animal, plant and ecosystem health'. *Nature*, [online] 484(7393), 186–194. Available at: doi:10.1038/nature10947 [Accessed 31 Dec. 2019].

<sup>29</sup> The Department of Census & Statistics (2019). *Economic Statistics of Sri Lanka 2019*. [online] The Department of Census & Statistics, p.5. Available at: <http://www.statistics.gov.lk/EconomicStat/EconomicStatistics2019.pdf> [Accessed 31 Dec. 2019].

| Implementer/s                                            | Act or Policy Intervention                        | Scope    | Purpose/ objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------|---------------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ministry of Agriculture                                  | The National Food Production Programme, 2016-2018 | National | The main objectives of the National Food Production Programme 2016-2018 are to ensure food security and increase the food production of the country in a sustainable manner. This is in order to decrease the importation of food and reduce the amount of foreign exchange spent on food importation. The Programme also focuses on the impact of extinction/depletion and degradation of natural resources on food production.                                                                                                                                                                               |
| Ministry of Agriculture                                  | The Sri Lanka E-Agriculture Strategy, 2016        | National | This Strategy provides a roadmap by which information and communication technology (ICT) developments can significantly contribute towards the achievement of the country's agricultural vision and development objectives. This strategy is guided by priority objectives for the agriculture sector, set out in the Agriculture Policy Framework and National Food Production Programme (2016-2018) published by the Ministry of Agriculture. There are nine recommendations made thereof, setting out ICT solutions and an action plan for 2016 to 2020 to be implemented in three phases.                  |
| Tea Research Board and Ministry of Plantation Industries | Tea Research Board Act, No. 52 of 1993            | National | This Act provides for the establishment of the Tea Research Board. The Tea Research Board encourages, fosters and facilitates research into the planting and manufacturing of tea. It particularly conducts, assists and encourages scientific and technological research and investigations of all matters affecting the production and manufacture of tea, including the prevention and control of pests. Tea Research Board (Amendment) Act No. 8 of 2019, the latest amendment to the aforesaid Act, strengthens the research aspects in the sector with specific reference to climate change <sup>9</sup> |

| Implementer/s                     | Act or Policy Intervention                                                                   | Scope    | Purpose/ objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------|----------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ministry of Plantation Industries | The Rubber Industry Master Plan, 2017- 2026                                                  | National | A nine-year plan to strengthen the industry to capture a 15 per cent share of the national export income by 2026 by facilitating close public/private collaboration. The Master Plan aims to increase the rubber industry land cover which will improve micro-climate in the area, as rubber plantations are considered man-made renewable forests, and rubber trees are efficient in carbon sequestration and may qualify for carbon credits.                                                                      |
| Ministry of Plantation Industries | National Plantation Industry Policy Framework, 2006                                          | National | This framework strengthens the role of the state sector as facilitator, regulator and moderator to enable the state sector to participate effectively with the private sector as a strategic partner in the process of moving towards achieving long-term sustainability of the plantation sector.                                                                                                                                                                                                                  |
| Irrigation Department             | Agriculture Renaissance: Towards a new Sri Lanka, Policy Framework, National Irrigation Plan | National | This has recognized the importance of providing farmers with much-needed water and finding solutions to the scarcities. Therefore, water as a prime resource is to be provided to transform dry lands in all parts of the country into fertile agricultural lands. In order meet the demand for water, a National Irrigation Plan has been formulated where the rivers, water courses and tanks would be interconnected as required. The Irrigation Sub Sector will play a key role in the agriculture renaissance. |

| Implementer/s           | Act or Policy Intervention                                                               | Scope                                                                                                                                                              | Purpose/ objective                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ministry of Agriculture | Soil Conservation Regulations, No. 01 of 2009 under Soil Conservation Act, No.25 of 1951 | Conservation areas declared under Sec 4 of Soil Conservation Act. (Conservation areas have been declared under the Extraordinary Gazette No. 1550/9 of 22/05/2008) | <p>This Act provides for guidelines for cultivations in conservation areas.</p> <p>For example, no cultivation of annual crops in any land area which consists of a slope of more than 60 per cent.</p> <p>In the District of Rathnapura, there are conservation areas like Eheliyagoda, Kiriella, Kalawana, Ratnapura, Balangoda Kolonne, Kuruwita, Weddagala, Rakwana, Palledbedda.</p> |

### 3.2.2 Gaps and challenges

The GoSL has to be accredited for the number of interventions that have been brought forth; however, the following concerns remain:

1. The Agriculture sector is operating in isolation;

Impediments faced by the sector have to be transferred to the decision makers especially when alienating State lands for mega development projects as these could increase climate vulnerability in the agriculture sector.

2. The National Agriculture Policy is outdated as it does not reflect the contemporary evolution the sector ought to take into consideration and the potential it yields in harnessing and building resilience within the farming community.
3. The Ministry of Agriculture has identified the following issues in Sri Lanka's present agricultural landscape;
  - Low productivity of crop and animal products for which the demand is rising.
  - Poor match between food commodities that are promoted under agriculture development programmes and those important for food security.
  - Inadequate attention to agricultural diversification in favour of crops that have better income prospects.
  - Heavy post-harvest losses, especially with regards to perishable products.
  - Failure to respond to growing concerns of food safety with appropriate responses through the full value chain.

- Less priority given to processed food products to cater to demand shaped by changing lifestyles.
  - Inadequate attention on producing/developing nutrition-rich food product.
4. Constant change in the subsidy and fertilizer schemes introduced by the government affects the farmers' scope for future planning and investment. The lack of a comprehensive National Agricultural Production Plan presently available can be identified as a lacuna in the existing system. Consequently, the rural agricultural community has become more vulnerable. It is further observed that the uncertainty and irregularities in the subsidy schemes need to be addressed.

For example, the fertilizer subsidy introduced for crops had brought positive impacts on cost reduction of such cultivation, especially benefitting the small-scale farmers. However, there have been changes in this fertilizer subsidy policy (replaced with Fertilizer Subsidy Cash Grant Programme).

5. Although plantations can create climate change resilience, the industry itself (manufacturing of rubber products) is accused of being an environmental polluter due to multiple records of improper and unregulated production processes.
6. Lack of investment on research on strengthening export crops. For example, coconut is a rain-fed perennial crop which is important for its economic and food and nutritional values. It is evident that adequate research has not been conducted on the impacts of climate change and future adaptation measures on coconut production and related industries. However, there is a prediction that the substantial share of the foreign income generated through export crops will drastically reduce due to the impacts of climate change as most of such crops are highly sensitive to fluctuations of weather.<sup>30</sup>
7. Deficiency in knowledge transfer – the farmers are not appraised or are inadequately appraised of the available research on:
  - Climate resilient crops;
  - Crop diversification as a means of protecting harvests;
  - E-agriculture strategy, as conventional farmers are yet to understand technological upgrades.
8. Insufficient laws addressing agricultural land degradation (soil erosion and decline land fertility).

<sup>30</sup> Ministry of Mahaweli Development and Environment. (2016). *Nationally Determined Contributions: Country Report*. [online] Ministry of Mahaweli Development and Environment. Available at: <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Sri%20Lanka%20First/NDCs%20of%20Sri%20Lanka.pdf> [Accessed 31 Dec. 2019].

9. Continuing poverty and shortage of labour in the rural areas also attribute to discouraging the small hold, agriculture-based development in such areas.
10. Research proves that climate change impacts on wet season paddy production are positive in the extreme south of Sri Lanka. However, the impacts are negative across most of Sri Lanka. In the circumstances described above, it is clear that the adaptations needed are different in the two regions,<sup>31</sup> however, the different needs of the regions have not been considered when drawing up policy frameworks.
11. The climate resilience of the agriculture community can be increased by policy interventions for adaptive measures. Several policies and programmes have been identified by the Ministry of Agriculture as discussed above but have not been fully given effect to.
12. Lack of consistent and long-term national agricultural policies and lack of a comprehensive National Agricultural Production Plan for the country are two main drawbacks observed in this sector.
13. Deficiencies in cooperation and coordination between relevant institutions, agencies and programmes would have hindered the expected progress of the above referred actions taken by the GoSL. The concept of '*Kanna Rāṣweema*' (seasonal monsoon meeting) is the only progressive mechanism noticed thus far within the sector. This, in fact, is a very useful mechanism implemented with the participation of line ministries to optimize productivity and water for irrigation and minimize potential natural threats and disasters to farming.

### 3.2.3 Way forward: Opportunities and recommendations

#### *Recommendation one: Policy interventions for building resilience*

- A revised national agriculture policy to strengthen resilience and build synergies between other sectors. Climate change impacts affecting the agriculture sector ought to be factored in when drafting the policy and pragmatic action points on improving resilience should be considered as a significant outcome.
- Action plan to be in line with policy objectives. For example, the agriculture policy introduced in 2007 promoted the production and use of organic and bio-fertilizers. This provided direction for the gradual reduction of the use of chemical fertilizers through integrated plant nutrition. Arguably, these statements remain as mere policy statements.
- Strengthening the legal framework and adopting policies and approaches that promote sustainable intensification of crop production and seed transfer. Improve the quality of seeds to cater to the growing demands of the sector.

<sup>31</sup> de Silva, C., Weatherhead, E., Knox, J. and Rodriguez-Diaz, J. (2007). 'Predicting the impacts of climate change—A case study of paddy irrigation water requirements in Sri Lanka'. *Agricultural Water Management*, [online] Vol. 93(1–2), pp.19-29. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S037837740700162X> [Accessed 31 Dec. 2019].

- The introduction of a Soil Conservation Policy under the Soil Conservation Act, No.25 of 1951, that regulates the usage of chemical fertilizers and promotes improving the quality of soil.
- Introducing deviations from the conventional agriculture/plantation methods could be included into the revised National Plantation Industry policy; perhaps exploring green houses.

***Recommendation two: Develop transformative capacity by encouraging good governance and transformation of leadership to local authorities***

- Ensure all the farmer organizations/communities are linked with the local authorities' agrarian/irrigation and other relevant government institutions. Furthermore, their advice and direction on water management, crop diversification and possible extent of acreage of cultivation for a season must be fully complied and accommodated.
- Vesting the local authorities with the responsibility of monitoring and controlling excessive usage of agro-chemicals and brief farmers periodically on fluctuation of fertilizer subsidies.
- Local authorities should aid the farmers in the selection and choice of crops for their cultivation depending on the location, climatic forecast and impending market behavior through an extensive extension service for agriculture.

***Recommendation three: Research, improved dissemination of information, education, training and use of technology for building resilience***

- Establishment of schemes for the development of the seed industry should be introduced. Adequate resources need to be allocated for research and investigation in order to invent climate resilient crops. The knowledge from research carried out by universities and government research institutes (i.e. droughts/ salinity tolerant crop varieties and cropping patterns) should be utilized. Ground level initiatives to develop such research-based products and effective implementation of the National Agriculture Research Plan (NARP) are essential, at minimum.
- Providing farmers with access to knowledge, appropriate machinery and equipment to save water, labour and agrochemicals would increase their productivity and economic resilience. The following can be identified as key initiatives of such a programme which can be incorporated into the revised National Agriculture policy:
  - Rainwater harvesting for dry zone and micro-irrigation using solar pumps;
  - Increasing the capacity of the soil to retain moisture, and adopting methods to improve and maintain soil quality;
  - Addressing inadequacies and inconsistencies in the fertilizer subsidy policy by introducing suitable standardized subsidy schemes to farmers, preventing excessive fertilizer usage due to the subsidy;

- Promoting cash/seasonal crops that demand less water consumption instead of paddy for climate sensitive areas.
- Knowledge transfer programmes on sustainable agriculture practices and crop diversification.
- Promote practices such as the ‘Save and Grow’ paradigm that proposes technical perspectives on sustainable crop production that is highly productive and socially, economically and environmentally sustainable.<sup>32</sup>

***Recommendation four: Pursue solutions that deliver resilience***

- Introducing a value chain certification scheme (e.g. quality seeds, planting material), and enforcing quality control of agriculture products in the sector in order to ensure high levels of productivity.
- Introducing saline-resistant and drought-resistant paddy varieties and climate-resilient commercial crops including tea, rubber and other export crops.
- Promoting sustainable and organic agriculture amongst farmers.
- Facilitating partnerships, national and local government partnerships; farmer organization, national and international partnerships; NGO/INGO partners; and local and international partners, fostering long-term growth of the agriculture sector.
- Raising awareness on the importance of reducing risks from pesticides and promoting alternatives.

***Recommendation Five: Community empowerment through community participation in decision-making***

- Widespread sustainability will be the result of collective action of millions of small-scale farmers who, through their daily decisions, determine the trajectory of agricultural ecosystems across the nation.<sup>33</sup>
- Inclusion of farmers and other community members such as women and youth by policy-makers during deliberations and discussions leading to collective decision-making.

<sup>32</sup> Integrated Production and Pest Management Programme. (2015). *Building resilient agricultural systems through farmer field schools*. [online] Food and Agriculture Organization of the United Nations. Available at <http://www.fao.org/3/a-i4411e.pdf> [Accessed 31 Dec. 2019].

<sup>33</sup> *Ibid*

### 3.3 Mainstreaming disaster resilience into water resources management

One cannot overstate the significance of water for both the citizenry and industries. In Sri Lanka, irrigation accounts for 88 per cent of total water withdrawals, most of which is for rice production with 70 per cent of Sri Lanka's rural population associating agriculture as their main source of livelihood. Approximately 44 per cent of the paddy is irrigated under major irrigation schemes while 24 per cent is irrigated under minor irrigation schemes during the two main cropping seasons (*Yala* and *Maha*) associated with rainfall. There is a growing demand for water, human consumption, agriculture and industrial purposes whilst water availability is affected by: erratic weather conditions including severe droughts; natural phenomena like riverbank erosion and deposition of sediment; water quality deterioration; pollution of water sources by anthropogenic activities; and rapid urbanization. Excessive sand mining in the main rivers and streams has led to the lowering of riverbed levels resulting in the lowering of the water table as well. Saltwater intrusion has also led to a number of environmental and social issues. The wastewater discharges from industries to water bodies, salinity intrusion in the water intakes, inadequate catchment protection, high percentage of Non-Revenue Water (NRW), groundwater depletion in certain areas and water quality issues have been identified as main issues associated with water supply and sanitation.

Several laws and policies have been adopted for water resources management under different agencies and departments in Sri Lanka. There are approximately 50 Acts addressing water resources management, and this publication will focus on the key areas of intervention that can aid in strengthening sustainable usage of water resources.

#### 3.3.1 Policy interventions

**Table 6: Policy interventions in mainstreaming disaster resilience into water resources management**

| <i>Implementer</i>                           | <i>Act or Policy/<br/>Intervention</i>                                                                                    | <i>Purpose</i>                                                                                                                                                                                                                           |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Minister of Land                             | The National Policy on Protection and Conservation of Water Sources, their Catchments and Reservations in Sri Lanka, 2014 | This Policy has provisions for the identifying and demarcating of boundaries; protection and conservation of water sources; monitoring of unauthorized activities in water catchments; and monitoring the condition of water reservoirs. |
| Ministry of Environment and Renewable energy | The National Watershed Management Policy, 2004                                                                            | This Policy has provisions to conserve, protect, rehabilitate, sustainably use and manage watersheds while managing their environmental characteristics with the involvement of communities.                                             |

| <i>Implementer</i>                                              | <i>Act or Policy/<br/>Intervention</i>                             | <i>Purpose</i>                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Minister of Environment and Central Environmental Authority     | The National Wetland Policy and Strategy, 2006                     | <p>This Policy intends to protect, conserve and enhance wetland ecosystems and prevent illegal utilization of wetlands while meeting national commitments of the Ramsar Convention.</p> <p>The Policy advocates research into wetland ecosystems to assist with their conservation, sustainable use, restoration and adaptive management.</p> |
| Ministry of Environment and Natural Resources                   | The National Environmental Policy and Strategies, 2003             | In relation to the four basic natural resources of land, water, atmosphere and biological diversity, this Policy focuses on the promotion of sound management of Sri Lanka's environment.                                                                                                                                                     |
| National Water Supply and Drainage Board                        | The National Drinking Water Policy                                 | <p>This Policy provides a framework to address the key issues and challenges faced by the country's water supply sector in the provision of safe water supply to the people of Sri Lanka.</p> <p>The Policy encourages research into water-saving technologies, improved system designs, and services.</p>                                    |
| Ministry of Urban Development, Construction & Public Utilities, | National Policy for Rural Water Supply and Sanitation Policy, 2001 | This Policy recognizes the value of water, and the need for institutional arrangement for the efficient management of facilities with community participation and the stakeholders.                                                                                                                                                           |

| <i>Implementer</i>                                                                                                                                                                         | <i>Act or Policy/<br/>Intervention</i>                  | <i>Purpose</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| National Water Supply and Drainage Board with line Ministry and provincial authorities                                                                                                     | National Policy on Water Supply and Sanitation, 2002    | This policy recognizes access to safe drinking water and sanitation services as an essential or fundamental element of the economic and social development of Sri Lanka and intends to realize such objectives by reforming the structure for service provision to provide incentives for efficiency, attract private sector participation, improve accountability, and support community involvement while ensuring adequate provision for low-income urban and rural consumers.                                                                                                                                                    |
| Rainwater Harvesting Secretariat of the Ministry of Urban Development and Water Supply, and the National Water Supply and Drainage Board jointly with the Lanka Rainwater Harvesting Forum | National Rainwater Harvesting Policy and Strategy, 2005 | This Strategy seeks to ensure that the “City of Tomorrow” applies rainwater harvesting broadly by the control of water near its source in its pursuance of becoming a ‘Green City’ in the future. Strategies for implementation and desired benefits are also set out therein. Although there is no specific reference to climate-induced impacts in this Policy, it is well in par with the Sri Lanka’s Nationally Determined Contributions (NDCs) on climate change, in respect of adaptation. This principle has been adopted in the new “Haritha Lanka Programme” as a strategy to meet the climate change impacts in Sri Lanka. |
| Climate Change Secretariat Ministry of Mahaweli Development and Environment                                                                                                                | NAP- CCI, 2016-2025                                     | This focuses on raising the adaptive capacity of individuals, communities and the society to cope with impacts of climate change effectively and reducing the vulnerability to climate risks by enhancing the resilience of communities and ecosystems.                                                                                                                                                                                                                                                                                                                                                                              |

| <i>Implementer</i>                                 | <i>Act or Policy/<br/>Intervention</i>                                                        | <i>Purpose</i>                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Irrigation Department                              | Irrigation (Amendment) Act, No.13 of 1994                                                     | This Amendment is mainly concerned with development. However, it contains some provisions to assist irrigation groups to adapt to changing climate; example, by authorizing charging for water use, promoting and encourage water conservation.                                                                              |
| Department of Agriculture                          | The Agrarian Development Act, No.46 of 2000                                                   | This Act contains provisions with rights and responsibilities of owners and tenants of paddy lands. The Act encourages the formation of farmer organizations that promote soil conservation, water-use efficiency and control discharge of waste into watercourses.                                                          |
| National Water Supply and Drainage Board           | National Water Supply and Drainage Board Act, No..02 of 1974 (amended by Act, No.13 of 1992). | This Act provides for the establishment of a public authority, National Water Supply and Drainage Board, to provide sustainable water and sanitation solutions.                                                                                                                                                              |
| Water Resources Board                              | Water Resources Board (Amendment) Act, No.42 of 1999                                          | This Act provides for the establishment of a Water Resources Board to conserve and sustainably utilize water resources of the country by using new technologies and management tools.                                                                                                                                        |
| National Council for Disaster Management Sri Lanka | Disaster Management Act, No.13 of 2005                                                        | This Act provides for the establishment of the national council for disaster management; the DMC; the appointment of technical advisory committees; the preparation of disaster management plans; the declaration of a state of disaster; the award of compensation and formatters connected therewith or incidental thereto |

| <i>Implementer</i>                            | <i>Act or Policy/<br/>Intervention</i>                                  | <i>Purpose</i>                                                                                                                                                                                                                                     |
|-----------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mahaweli Authority of Sri Lanka               | Mahaweli Authority Act, No.23 of 1979                                   | This Act develops the Mahaweli River Basin and meeting the country's irrigation and hydropower needs                                                                                                                                               |
| Central Environmental Authority               | National Environmental Act, No.47 of 1980 (as amended in 1988 and 2000) | This Act provides for the establishment of a 'Central Environmental Authority'; to make provisions with respect to the powers, functions and duties of that authority; and to make provision for the protection and management of the environment. |
| Ministry of Lands and Divisional Secretariats | State Lands Ordinance, No. 08 of 1947                                   | This Ordinance contains provisions for the reservation and protection of the source, course or bed of any public stream and regulation of the use of water of lakes and public streams.                                                            |

### 3.3.2 Gaps and challenges

1. Water governance in Sri Lanka is still largely based on management systems put in place during the British colonial rule and determined by administrative- and land-based boundaries. At present, there are nearly 50 Acts and over 40 agencies involved in governing and managing the water resources of the country, many of which are restricted to certain functions or subsectors. As a result, there is considerable duplication, fragmentation and overlap in the institutional framework in Sri Lanka's water sector which has resulted ineffective water management practices.<sup>34</sup>
2. The absence of an overarching water resources policy and legislation is the biggest obstacle in promoting resilience in the water sector in Sri Lanka. Each water subsector operates without coordination under its own legislation and regulations. There is no effective mechanism to coordinate their plans, investments or management activities. Water resources instruments have (mostly) not been developed with climate change impacts in mind, hence does not address means of building resilience within communities. As such, the immediate downside is shortage of water, unplanned or no distribution of water in certain areas, excising a heavy toll on the resident farming communities.

<sup>34</sup> Suhardiman 2019: p.61

3. The long-standing policy of transferring responsibility of managing irrigated areas to farmer organizations has not been notably successful in raising productivity because of a deficiency in information dissemination and continuous monitoring.
4. Subsector policies—rural water supply and sanitation, drinking water, wetlands, source protection—advocate education and public awareness and research remain as mere policy statements as there is no evidence to the contrary.
5. The Water Resources Board was established with the objective of advising on different aspects of water resources management in the country. However, recently, the focus of the Board appears to have shifted from encompassing the entire water sector to mainly that related to groundwater research, monitoring and development.
6. Sri Lanka lacks sufficient legal instruments to address the legal status of river/ canal reservations over private land. Besides, it lacks adequate enforcement measures for the existing laws and regulations regarding encroachments to rivers, river reservations and tank reservations which are used for cultivation or human settlement purposes. Such activities hinder the protection framework currently in place for the irrigation sector in Sri Lanka.
7. Main and secondary drainage canals have not been given due recognition, and the management system seems to be ineffective. Lack of funding, equipment and appropriate policy towards proper drainage management obstructs the prospects of such projects.
8. Farmers and local authority officials, especially those engaged in water management and agriculture extension, are not aware of climate change impacts on livelihoods. In this context, there is resistance from farmers to adapt to changing rainfall patterns and seasons and obtain proper advice on crop choice, water saving methods or diversification of livelihoods so that dependence on rainfall is minimized.<sup>35</sup>
9. Insufficiency of awareness and understanding on best water management practices has invoked hesitance in shifting to alternative crops instead of irrigated paddy farming, which excises a heavy demand for hydropower.
10. Several green initiatives have been taken including compulsory provisions for rainwater harvesting for new development activities. However, no adequate climate change and environmental considerations are taken into account when setting out those regulations and planning requirements, and no mandatory provisions to take those facts checked in granting any development permits and/or site clearance; Sri Lanka is way behind in planning climate-smart cities and climate-proof constructions.

<sup>35</sup> UNDP. (2016). *Coping with Climate Change and Variability: Lessons from Sri Lankan Communities*. [online] UNDP Global Environment Facility/Small Grants Programme. Available at: [https://www.lk.undp.org/content/srilanka/en/home/library/environment\\_energy/Coping-with-Climate-Change-and-Variability-Lessons-from-SriLankan-Communities.html](https://www.lk.undp.org/content/srilanka/en/home/library/environment_energy/Coping-with-Climate-Change-and-Variability-Lessons-from-SriLankan-Communities.html) [Accessed 31 Dec. 2019].

### 3.3.3 Way forward: Opportunities and recommendations

#### *Recommendation one: Policy interventions for building resilience*

- An overarching integrated water resources management policy at a national and local-governmental level with due considerations on climate change and disaster vulnerabilities with the aim using water resources in a sustainable manner resulting in building resilience.
- Adequate enforcement of soil conservation and environmental protection laws and regulations in order to prevent pollution of natural water bodies and man-made irrigation systems.
- Adequate enforcement of irrigation laws and regulations on sensitive area reservations including rivers, streams and all water bodies, and the enforcement of State Lands Ordinance, State Lands Encroachments Ordinance, No. 12 of 1840 (as amended) and State Lands (Recovery of Possession) Act, No.07 of 1979 (as amended), to ensure all the reservations and other sensitive areas are free of human intervention and disruption.
- Imposition of laws to curtail the increasing trend of unauthorized/ illegal settlements involving other relevant agencies responsible for reservation areas, such as the Irrigation Department, Sri Lanka Land Reclamation and Development Corporation (SLLRDC), Department of Railways, Coast Conservation and Coastal Resource Management Department (CCD).
- Introduction of a comprehensive soil conservation policy for the country under the Soil Conservation Act No.25 of 1951, that amongst other things addresses methods of increasing the capacity of the soil to retain moisture and best practices to improve and maintain soil quality.

#### *Recommendation two: Development of transformative capacity through encouraging good governance and transformation of leadership to local authorities*

- Local authorities should promote short-term solutions like rainwater harvesting, micro irrigation using solar pumps, drip irrigation and other technological advancements for effective water management (with access to knowledge as well as appropriate machinery and equipment) and disseminating more information to farmers on how to select crops to match the soil quality and water availability based on weather forecasting for seasons. These measures can be incorporated into the revised National Policy on Protection and Conservation of Water Sources, Catchments and Reservations of 2014 and the National Rainwater Harvesting Policy and Strategy of 2005.
- Removal of silt and the rehabilitation of tanks, canals and other minor irrigation systems.
- Promotion of rainwater harvesting for dry zone and micro irrigation using solar pumps/ drip irrigation.

***Recommendation three: Research, improved dissemination of information, education, training and use of technology for building resilience***

- Dissemination of knowledge and appropriate training on efficient irrigation infrastructure to the farmers and rural community members.
- Educate farmers on the need to conserve water and connect them with accurate and real time weather forecasts and climate information.
- Adopt traditional knowledge and practices, applied by the farming communities for effective water management for agriculture purposes, into government policy and planning in this regard.
- Providing technical solutions with access to knowledge and appropriate machinery and equipment to save water, labour and agrochemicals which would serve as short-mid-term solutions to increase the productivity and economic resilience of the farming community; the following can be identified as key initiatives for such programme:
  - Education of farmers and communities on the externalities caused by irregular groundwater extraction by tube wells for cultivation, as it further aggravates water scarcity in the area. Which would in turn result in them opting out of such measures.
  - Rehabilitation of the cascading small tank system in districts using traditional knowledge and experience and technology-based predictions.

***Recommendation four: Pursue solutions that deliver resilience***

- To reduce flooding incidents by allowing retention during high intense rains by curtailing the increasing trend of filling low lying retention land in urban areas;
- A proper coordination mechanism involving the Agrarian Services Department, Irrigation Department and the local, district and divisional administration bodies could be introduced to attend to immediate recovery needs subsequent to floods, distribution of paddy seeds, removal of silt and rehabilitation of tanks, canals and other minor irrigation systems.
- Better clustering of minor irrigation tanks and tapping and connecting the seasonal and perennial water bodies (*aru*) in order to store more water.

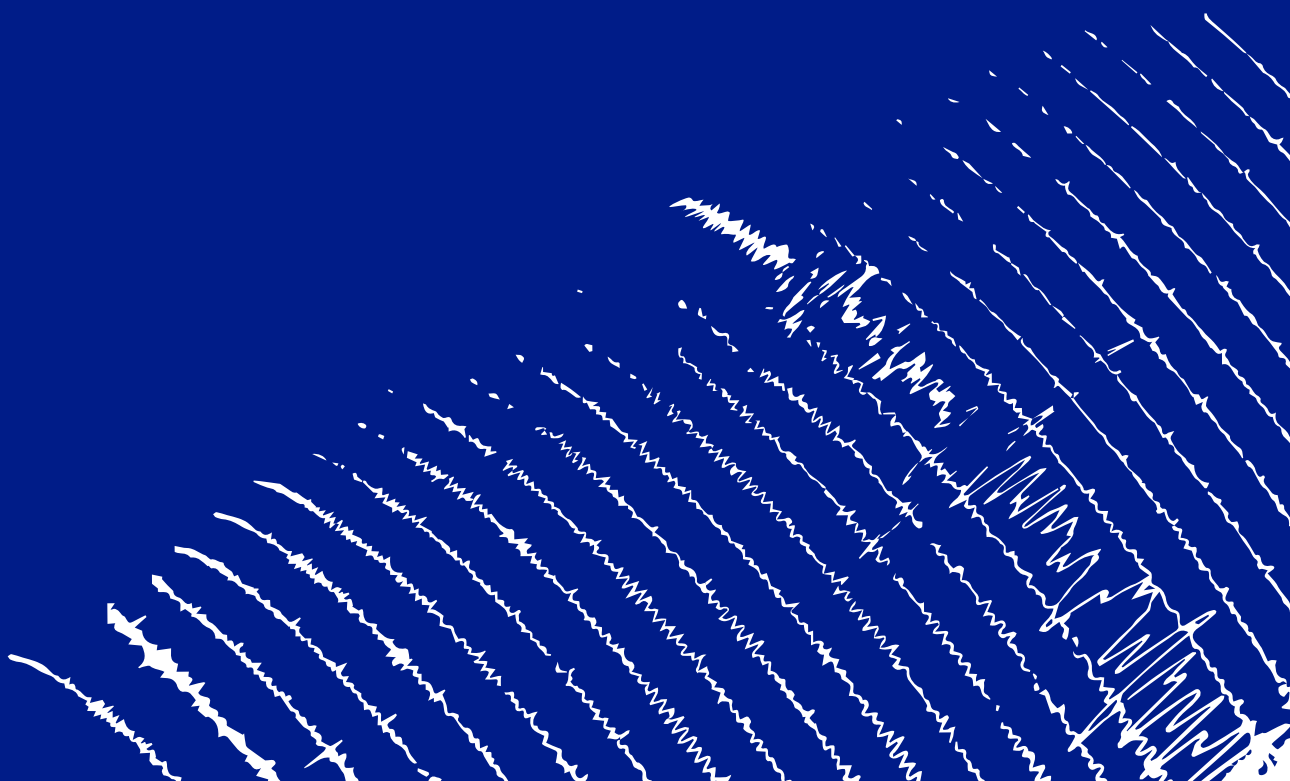
***Recommendation five: Community empowerment through community participation in decision-making***

- Proper coordination and involvement of all relevant stakeholders in decision-making and implementing projects and mechanisms.

- Increase the effectiveness and participation of seasonal monsoon meetings (*kanna rāṣveem*) enabling the adoption of suitable agricultural plans locally and making the farming community bound to comply and follow the decisions of such planning meeting.
- Ensure all farmer organizations and communities are linked with Agrarian, Irrigation and other relevant government institutions in order to obtain their advice and direction on water management and crop diversification. Such an arrangement will further ensure that the farmers would comply with the declared extent of acreage for cultivation for a season by the relevant authorities.

Chapter Four:

## **CROSS-CUTTING AREAS OF INTERVENTION IN BUILDING RESILIENCE**



Vulnerability is most often associated with poverty; however, it is not entirely accurate. Vulnerability is much broader than poverty. Poverty and the other multi-dimensional factors and drivers create vulnerability. In an in-depth analogy on building resilience within communities, a discourse on vulnerable communities and groups therein is pertinent.

Vulnerability tributes from many sources such as economic factors, physical factors, environmental factors and social factors, and these factors determine the severity of a community's vulnerability as discussed in the introductory chapter.

It is important to distinguish between factors that aggravate vulnerability and groups that are innately vulnerable. Certain communities are disproportionately affected than the rest, and certain groups take a harder blow, examples including women and children in general and households headed by widowed or single mothers in particular. Effective resilience is vested in identifying the appropriate vulnerability/vulnerabilities of the specified community or groups and ensuring that the root causes are tackled.

Building disaster resilience could also interchangeably mean addressing factors that contribute to the vulnerability of communities. As such, this section will look at:

1. Building economic stability;
2. Gender inclusion as a driver to community resilience

## 1.1 Building economic stability

Poverty, albeit not the only factor associated with vulnerability, remains as a common denominator in many vulnerable communities and groups. Building resilience inevitably means increasing the economic stability and independence of its citizenry, thus livelihood plays an ever so important role in this process. The vulnerabilities, if let unaddressed, hamper efforts taken by the Government to attain ecological progression. As environmental degradation almost always has an economic underpinning, building resilience in the long run would mean conserving our natural environment, and effective means of conservation in turn requires addressing economic instability.

The following are two methods that, when used strategically, can aid in promoting economic stability in an environmentally sustainable manner:

- Insurance and finance
- Small and medium-scale enterprises

### 4.1.1 Insurance and finance

Financial instability contributing to economic volatility is a driver of vulnerabilities in Sri Lanka. As a means of promoting economic stability within communities, the GoSL has introduced various agricultural insurance programmes which have served the people and aided in promoting resilience since 1958.

The Agricultural and Agrarian Insurance Board Act, No. 20 of 1999 came into effect from 16 August 1999 mainly to overlook and administer the self-financing component of the agricultural insurance scheme. The Agricultural and Agrarian Insurance Board (AAIB) was established for the management of the crop insurance programme by the GoSL and later it was transferred to the National Insurance Trust Fund (NITF). Currently, insurance schemes are handled by both the AAIB under the Ministry of Agriculture and the NITF under the Ministry of Finance.

In 2012, policy-makers tied the crop insurance programme to the fertilizer subsidy by which close to 90 per cent of the fertilizer cost was subsidized.<sup>36</sup> However, in the year 2015 the said system was removed and replaced by a coupon scheme.

In 2013 the GoSL introduced “crop insurance levy” which is a compulsory crop insurance scheme for paddy farmers who are also the beneficiaries of the fertilizer subsidy. The “crop insurance levy” scheme made it mandatory for private banks and financial institutions to have a loan protection insurance scheme so that loans obtained by farmers will accommodate a loss of intended income due to climate driven disasters. These monies can be claimed by financial institutes to cover the loan amount where farmers are unable to repay the loan over a disaster. The insurance premium collected from all farmers who were under the fertiliser subsidy allowed the insurance programme to be self-sufficient and claims could be made whenever the harvest was damaged by natural causes. Therefore, in theoretical terms, the programme was an “indemnity-based system”.

These systems provide an added layer of protection in turn increasing the resilience of the farming communities who are impacted by climate-induced disasters.

## Gaps and Challenges

- It is noticed that not a single claim has been forwarded by the private financial institutes to date under the “crop insurance levy” scheme and the reason being the lack of awareness at a regional level. Compulsory crop insurance was introduced in 2013, and it was combined with the government’s fertilizer subsidy programme. These programmes are specifically important in promoting the usage of organic fertilizers and deterrence of the usage of chemical fertilizers.
- There is no effective private sector micro insurance scheme to empower the SMEs by way of absorbing residual risks of disaster; thereby increasing resilience towards climate change and disasters like droughts, landslides and floods. Lack of awareness and receptiveness and financial instability of industries are the main negative factors that discourage entrepreneurs to proceed with general insurance schemes available in the country.
- Effective implementation of risk insurance mechanisms to absorb the residual risks of climate-induced hazards is important as a long-term recovery need. However, the Natural Disaster Insurance Scheme was implemented in 2016 through the NITF, to cover agricultural damages incurred due to environmental hazards and cover all fishermen registered under

<sup>36</sup> Rodrigo, C. (2016). *Crop insurance gone wrong: Why subsidised crop insurance won't work*. [online] Daily FT. Available at: <http://www.ft.lk/article/579307/Crop-insurance-gone-wrong-%E2%80%93-Why-subsidised-crop-insurance-won-t-work> [Accessed 31 Dec. 2019].

the Department of Fisheries. However, this mechanism has proven to be futile as it does not extract wider coverage due to the reasons described in the preceding paragraphs. Thus, it is recommended to introduce an index-based insurance scheme to absorb such risks effectively.

### Way forward: Opportunities and recommendations

- A national insurance policy to aid vulnerable communities encompassing different fields of livelihood options.
- Facilitating financial inclusion by granting access to credit, micro finance, insurance and risk management schemes which will enable communities to reap financial benefits. Currently, there is very limited access to such services within the district.
- As the GoSL cannot always take the forefront in promoting sustainability, policy incentive to attract more private sector partnership is more important at this juncture. Public private partnership will in turn lower the burden on the part of the Government.
- Reviewing existing and new programmes and projects on rural development, along with the schemes on agriculture and poverty alleviation, and reintroducing proper social protection mechanisms for low income generating families and most vulnerable groups in the district, as necessary.
- It is also observed during the consultation process, the majority of the farming community is indebted and stuck in a debt trap through Co-operative Rural banks and Credit Co-operative Societies, and limited funds already made available by the government scheme to support such people are not adequate to solve the issue. It is recommended to encourage people to practice the habit of saving and proper financial management.
- Creating awareness and trust among the community on residual risk absorption mechanisms such as agricultural/ disaster risk insurance and micro financing. Introduction of an index-based insurance scheme in place of the existing agri-insurance scheme which is more transparent and reliable from the farmers' perspective.
- Ensuring equal access and opportunities in the sector by providing due regard and giving preference to female-headed families when distributing aid and other financial assistance and training.
- Based on statistics and the present status of economic affairs, increasing economic resilience of the people is of utmost importance to reduce economic vulnerabilities in rural areas. Employment guarantees in formal and non-formal sectors and promotion of agri-business and other non-agriculture means of employment are such measures that could be adopted to increase economic resilience.

- Improving corporate awareness by measuring and disclosing environmental impacts of such disasters is essential to the management of carbon and climate risk withstands or to bounce back more effectively from shocks.

#### 4.1.2 Small and medium-scale enterprises

SMEs are significant contributors to the Sri Lankan economy which single-handedly account for 35 per cent of employment in Sri Lanka and 20 per cent of industrial establishments. In the service sector, SMEs account for more than 90 per cent of business establishments and significantly contribute to the agri-business in Sri Lanka.

Acknowledgement of the contribution of SMEs has resulted in policy interventions to regulate and strengthen the involvement of SMEs as, if strategically placed, this sector can contribute to green jobs and sustainable economic growth in the country. The 'National Policy Framework for Small Medium Enterprise (SME) Development' is the main policy intervention undertaken with regards to this sector.

#### National Policy Framework for Small Medium Enterprise (SME) Development

This Policy aims to support start-up SMEs, strengthen the existing enterprises and extend nursing programmes for potentially viable SMEs. It focuses on many factors including promoting resource-efficiency at all levels including the use of 'green technology'.

The major policy intervention areas are identified as six core areas i.e. enabling environment, modern appropriate technology, entrepreneurial culture and skills development, access to finance, market facilitation and research and development. Under 'enabling environment', the policy focuses on creating awareness to SMEs on green growth opportunities and promoting environmental-friendly cleaner production technologies.

Under resource-efficiency, it attempts to protect and rebuild the natural resources that serve as the basis of socio-economic development and overall well-being through awareness and skill development.

The following are the key strategies:

- Improve supply and demand for resource-efficiency services by strengthening service providers, existing institutions and train skilled-labour for green technologies and enhance awareness among SMEs.
- Introduce incentive schemes for clean technology and facilitate to overcome the institutional hurdles.

- Create demand for sustainably produced products from SMEs with government green procurement policies at all levels and foster media campaigns to create public awareness on advantages of environment.
- Improve recycling systems and educate SMEs on material flow analysis and incorporation and extended producer responsibility provisions in to the laws and regulations.

### Gaps and challenges

- There are gaps in the implementation of policy statements.
- Although SMEs contribute significantly to the country's economy, it lacks institutional regularization.
- SMEs lack legal standing hence there is a difficulty in obtaining loans.
- SMEs lack educational insight into sustainable job opportunities.
- SMEs lack training on sustainable business management.

### Way forward: Opportunities and recommendations

- A National Strategy promoting sustainable business models needs to be developed to strengthen SMEs in Sri Lanka.
- Avenues to obtain loans and financing facilities under the wing of the central bank should be developed.
- Encourage the establishment of SMEs over agro/non-agro-based industries through the Department of Industries and national and local government; strengthen community-based societies who engage in alternative livelihood activities to increase their resilience to cope up with adverse impacts of climate-induced disasters.

Although natural resource-based industries have contributed to uplift the economy of the rural communities, unregulated industries too are impacted by adverse impact of disaster management and land-use and development planning. Thus, all such activities should be undertaken with a valid license issued for such purpose, subject to strict supervision and guidance of the authorities.

## 4.2 Gender inclusion as a driver of community resilience

Disasters and hazards affect both men and women. However, comparatively, women undergo disproportionate impacts from such disasters and climate change. As a result of entrenched inequalities, women and girls are more likely to be exposed to disaster-induced risks and are less likely to adapt to shocks. Economic inequalities have resulted in women, especially female-headed households, to be at a higher risk of poverty, making them more susceptible to the impacts of climate-related events such as floods, storms, earth slips, landslides and other hazards/ disasters.

Women's unequal participation in decision-making processes and labour markets often prevent women from fully contributing to environment/disaster/climate change-related planning, policy-making and implementation. The failure to engage in gender-responsive disaster planning and implementation means that protective facilities and infrastructure, such as early warning systems, shelter and relief programmes, have frequently neglected the specific needs of diverse groups of women. It is also more difficult for women to access money and emergency supplies in Sri Lanka where only men are recognized as the head of the household. As a result, war widows and single mothers find it more difficult to collect entitled relief cash, social services and goods.

### 4.2.1 Policy interventions

#### **The Disaster Management Act, No.13 of 2005**

The Disaster Management Act of 2005 does not address the specific needs of women. The NPDM 2013 states the following;

“Disaster management should give special consideration to marginalized groups and those with special needs or otherwise vulnerable, including persons with disabilities, senior citizens, the sick, pregnant women, children and displaced persons. Disaster management should ensure gender equality and in particular the empowerment of girls and women.”

#### **National Adaptation Plan for Climate Change Impacts in Sri Lanka (2016-2025)**

The NAP-CCI encompasses crop and health damage, water resources, impacts on food security, resilience of ecosystems to extreme weather, assessing the changes in the oceanic environment and many other areas. The NAP-CCI, at its outset, states that it considered the gender perspective in its formulation, but subsequently in its substantive provisions fails to analyze differentiated risks and impacts.

### 4.2.2 Gaps and challenges

- There is still very little concrete mainstreaming of gender into policies and frameworks. Although there are numerous policy documents establishing the political commitment to

mainstream gender into its aims, no tangible or sustainable progress has resulted, except in certain standalone activities.<sup>37</sup>

- There has been no substantial progress made in mobilizing resources to mainstream gender perspectives into DRR processes in Sri Lanka.<sup>38</sup>
- Sri Lanka, stemming from its cultural roots, still has stereotypes attached to women's rights, roles and duties.

### 4.2.3 Way forward: Opportunities and recommendations

- Promoting disaster resilience also means ensuring that women's diversified vulnerabilities are considered and appropriately addressed. Empowering women is a cardinal factor in the quest for promoting disaster resilience.
- Provide equal access and opportunities in the development, agriculture and plantation sectors and due regard and preference for female-headed families in distributing aids and other financial assistance and training.
- Ensuring equal daily wages and other benefits are available for the female workers providing services in the agriculture sector.
- Women are often the designers and builders of community resilience in poor communities.<sup>39</sup> Thus, investing in education and training of women has a ripple effect in stabilizing families and steering the community at large towards sustainable living.
- Setting up vocational training institutes for vulnerable communities will lead to securing occupations in par with their respective education level and reducing the heavy reliance on agriculture and agro-related businesses and industries by their families. The knowledge gained therein will stop families from being involved in unsustainable sources of finance and probe better appreciation of the environment.

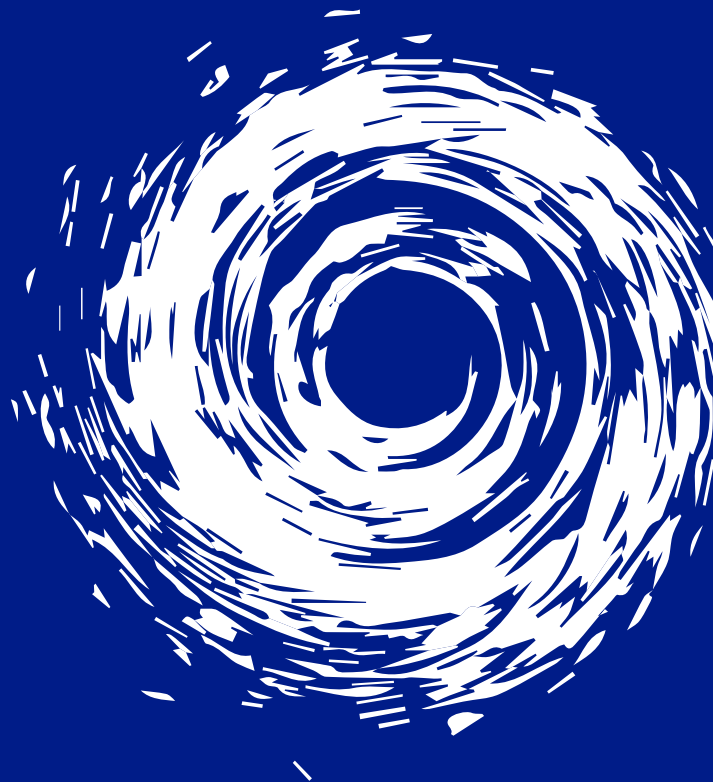
<sup>37</sup> FAO. (2016). *A gender-responsive approach to disaster risk reduction (DRR) planning in the agriculture sector: Guidance for supporting rural women and men to build resilience in the face of disasters*. [online] FAO. Available at: <http://www.fao.org/3/a-i6531e.pdf> [Accessed 31 Dec. 2019].

<sup>38</sup> UNISDR. (2009). *Making disaster risk reduction gender-sensitive: Policy and practical guidelines*. [online] Geneva, Switzerland: United Nations. Available at: [https://www.unisdr.org/files/9922\\_MakingDisasterRiskReductionGenderSe.pdf](https://www.unisdr.org/files/9922_MakingDisasterRiskReductionGenderSe.pdf) [Accessed 31 Dec. 2019].

<sup>39</sup> Arnold, Margaret.; Mearns, Robin.; Oshima, Kaori and Prasad, Vivek. (2014). *Climate and disaster resilience: The role for community-driven development*. [online] Washington, DC: Social Development Department, World Bank. Available at: <http://siteresources.worldbank.org/EXTSOCIALDEVELOPMENT/Resources/244362-1237844546330/5949218-1237844567860/CDD-CR-LJ-final.pdf> [Accessed 31 Dec. 2019]

Chapter Five:

## **OVERARCHING RECOMMENDATIONS**



No person or place is immune from disasters or disaster-related losses. What a country can do instead is to prepare for such disasters and mitigate its impacts. One way to reduce the impacts thereof on the nation and its communities is to invest in enhancing resilience. The means and ways of doing so have been extensively discussed in the preceding chapters.

This chapter lays down six (06) action points that need to be addressed to solidify the efforts and recommendations identified thus far. The six (06) action points are as follows:

***1. Understanding, managing, and reducing disaster risk:***

A national source of disaster-related data that documents injuries, loss of life, property loss, and impacts on economic activity should be established. Such a database will support efforts to develop more quantitative risk models and better understand structural and social vulnerability to disasters.

***2. Making investments in resilience:***

The public and private sectors in a community should work cooperatively to encourage commitment to and investment in a risk management strategy that includes complementary structural and nonstructural risk-reduction and risk-spreading measures or tools. Such tools might include an essential framework (codes, standards, and guidelines) that drives the critical structural functions of resilience and investment in risk-based pricing of insurance.

***3. Monitoring and measuring progress toward resilience:***

The ministry in charge of the subject of disaster in conjunction with other lines-ministries and local authorities and professional civil society groups should develop a National Resilience Scorecard.

***4. Building local capacity and accelerating progress: resilience from the bottom up:***

The GoSL should incorporate national resilience as a guiding principle to inform the mission and actions of the government and the programmes that it supports at all levels, including the members of the community.

***5. The landscape of resilience policy: resilience from the top down:***

All government agencies should ensure that they are promoting and coordinating national resilience in their programmes and policies. A resilience policy review and self-assessment within agencies and strong communication among agencies is key to achieving such coordination.

## ***6. Linking community and governance to guide national resilience:***

The national and local government should support the creation and maintenance of broad-based community resilience coalitions at local and regional levels.

Increasing disaster resilience is an imperative that requires the collective will of the nation and its communities. Although disasters will continue to occur, actions that move the nation from reactive approaches towards disasters to a proactive stance where communities actively engage in enhancing resilience will reduce broad societal and economic burdens caused by disasters.

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