O5 Country Report – Contributions to the guidance note with case studies and good practices on implementing local adaptation strategies

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Content

1 Top tip

All the top tips given in the questionnaire were introduced to the respective respondents. They are as follows:

a. Quantify current and future climate related risks in your area
b. Design comprehensive climate change adaptation plans
c. Apply an adaptive management approach
d. Consider coastal complexities
e. Capitalise on previous efforts and initiatives
f. Work with local planning authorities and key agencies
g. Involving the local community
h. Exploring available funding for climate change adaptation

Most of the respondents agreed and accepted the initial list of top tips. Several respondents suggested some top tips that should be added. Newly suggested top tips are as follows:

- Contingency planning for climate change
- Developing a central hub to coordinate post-disaster activities
- Using indigenous knowledge in climate adaptation
- Advocacy method on protecting, engaging, influencing, and embedding in enhancing climate change adaptations
- Preparation of hazard maps and risks maps
- Common integrated policy for infrastructure management
- Knowledgeable people based on the climate change should be there in all the authorities.

2 Instruments available to support local adaptation to climate change

2.1 REGULATORY INSTRUMENTS (E.G. LAWS, ACTS…)

There is no Climate Act in Sri Lanka for the implementation of climate adaptation activities. According to the interviews with representatives of government organizations, it was evident that the Climate Act is presently in the drafting stages. Therefore, several other laws and acts related to the environment and other categories could be used for climate adaptation. The legal instruments are as follows:

- **The Soil Conservation Act No.25 of 1951**

This act which was amended in 1953, 1981, and 1996 is concerned with the control and mitigation of soil erosion, protection of soil from floods, and designating, regulating, and protecting erosion-prone areas. See the link below for the Act

https://www.lawnet.gov.lk/soil-conservation-3/

- **The National Environment Act, No. 47 of 1980**

This act which was amended in 1988, established the Central Environmental Authority. It has assisted in developing policies, setting standards, and carrying out educational programs in relation to the environment and natural resources. See the link below for the Act.

https://www.elaw.org/system/files/National+Environmental+Act+of+1980.pdf

- **The Coast Conservation Act, No. 57 of 1981**

This act was amended in 1988. The Coast Conservation Department was established as a result of this Act. The Department was made responsible for carrying out coast conservation programmes, developing a coastal zone management plan, and carrying out regulatory permit programmes. See the link below for the Act.

http://citizenslanka.org/wp-content/uploads/2016/02/Coast-Conservation-Act-No-57-of-1981-E.pdf

- **Urban Development Authority (Amendment) Act, No. 49 of 1987**

Section 8 of the Urban Development Authority Law has dictated regulations in building constructions. This can be applied to climate adaptation in urban areas(Ministry of Justice - Sri Lanka, 2016).

https://www.lawnet.gov.lk/urban-development-authority-3/

- **Disaster Management Act, No. 13 of 2005**

This Act ensures protection of the life of the community and environment from disasters and maintenance and development of disaster-affected areas. Further, provisions under the section capture the impact on the environment. See the link below for the Act.

http://www.unlocked.lk/wp-content/uploads/2019/06/Disaster-Management-Act_E.pdf

- **The Fauna and Flora Protection Ordinance (2009)**

The Forest Ordinance No.16 of 1907 (FO), amended in 1966, 1979, 1982 and 1988 advocates for the protection of forests from illegal operations and prescribes penalties for those who violate them. See the link below for the Act.

https://stepbysteptrade.lk/media/ordinanceeng_1.pdf

- **The Sri Lanka Land Reclamation and Development Corporation Act No. 52 of 1982**

The Act includes section 20C which sets out that the pollution of canals is an offense. It also lists the parameters of the said offense while capturing the legal ramifications for a person that violates and pollutes the said canals. See the below link for the Act.

https://www.lawnet.gov.lk/sri-lanka-land-reclamation-and-development-corporation-2/

- **The Flood Protection Ordinance Act No. 22 of 1955**

This act allows the Minister to declare any part of the country a flood zone. It includes provisions for developing a flood protection scheme, establishing a flood authority, developing flood management laws, and acquiring land for the purposes of the ordinance.

http://www.irrigationmin.gov.lk/project2020/REVISED%20FINAL%20ESMF%20for%20IWWRMP%2020th%20April%202020.pdf

- **Crown land ordinance Act (1947) (Chapter 454, Volume No. 12 Page No.789)**

  This ordinance provided for the grant and disposition of crown lands in Sri Lanka, as well as the management and control of such lands and foreshore, as well as the regulation of the use of water from lakes and public streams, among other things.

https://www.lawnet.gov.lk/crownlands/#:~:text=AN%20ORDINANCE%20TO%20MAKE%20PROVISION,CONNECTED%20WITH%20THE%20MATTERS%20AFORESAID.

2.2 FINANCIAL INSTRUMENTS:

The government of Sri Lanka faces difficulty in allocating Government of Sri Lanka (GOSL) funds for adaptation activities due to the financial crisis in the country. Therefore, it is important to have the below-mentioned financial instruments which provide funds as loans or grants. The following funding sources provide financial and technical assistance through different implementation bodies in the local context. The Climate Change Secretariat endorses all project proposals when obtaining funds through the following sources.

- **World Bank Funds (WB)**

The World Bank Group works in every major area of development. They provide a wide array of financial products and technical assistance. They have provided financial assistance for climate mitigation and adaptation projects in Sri Lanka (World Bank, 2022). The web link below reveals details of such projects.

(https://projects.worldbank.org/en/projects-operations/projects-list?countrycode_exact=LK&countryshortname_exact=Sri%20Lanka&strdate=01-02-2018&os=0&enddate=11-15-2022)

- **Asian Development Bank (ADB)**

ADB offers a range of financing instruments, products, and modalities to provide for developing member countries. As a developing country, Sri Lanka received financial assistance for climate mitigation and adaptation (Guido, 2022). The web link contains details of such projects.

(https://www.adb.org/countries/sri-lanka/main#projects)

- **International Finance Cooperation (IFC)**

IFC advances economic development and improves the lives of people by encouraging the growth of the private sector in developing countries. This provides financial facilities for private sector organizations in Sri Lanka related to climate initiatives(International Finance Corporation, 2022). The web link below contains details of such projects.

(https://disclosures.ifc.org/enterprise-search-results-home?f_region_description=SARREG)

- **Adaptation Fund (AF)**

The Adaptation Fund finances projects and programs that assists vulnerable communities in developing countries, helping them to adapt to climate change. Under this fund, several projects have been implemented in Sri Lanka (Adaptation Fund, 2022). The web link contains details of those projects.

(https://www.adaptation-fund.org/project/build-resilience-to-climate-change-and-climate-variability-of-vulnerable-communities-in-mullaitivu-district-of-sri-lanka/)

- **World Food Project (WFP)**

The World Food Programme is the world's largest humanitarian organization. It provides financial assistance in climate action, climate adaptation, and climate and food security(UN World Food Programme, 2022). The web link below reveals details of projects in Sri Lanka.

(https://www.wfp.org/publications?f%5B0%5D=country%3A2086&f%5B1%5D=topics%3A2140)

- **United Nations Climate Technology Centre and Network (CTCN) funds**

The CTCN provides technological solutions, capacity building, and advice on policy, legal and regulatory frameworks tailored to the needs of individual countries in low-carbon and climate-resilient development(Climate Technology Centre & Network, 2022). The web link below contains details of projects undertaken by CTCN Sri Lanka.

(https://www.ctc-n.org/technical-assistance/data?f%5B0%5D=ta_page_countries_ref_facets%3A25121)

- **Global Environmental Facility (GEF)**

The Global Environment Facility is the world's largest funder for biodiversity protection, nature restoration, pollution reduction, and climate change response in developing countries (Global Environment Facility, 2022). The web link below contains details of projects under GEF Sri Lanka.

(https://www.thegef.org/projects-operations/projects/4096)

  - Under the GEF, there are two funds including Special Climate Change Fund(SCCF) and Least Developed Countries Fund(LDCF).

- **Green Climate Fund (GCF)**

The Green Climate Fund (GCF) is the world's largest climate fund which is mandated to support developing countries raise and realize their Nationally Determined Contributions (NDC), ambitions towards low-emissions, climate-resilient pathways(Green Climate Fund, 2019). The web link below contains details of projects under GCF Sri Lanka.

(https://www.greenclimate.fund/countries/sri-lanka)

- **United States Agency for International Development (USAID)**

USAID provides financial assistance through climate adaptation projects and several other environmental and energy bases. The web link below reveals details of projects under USAID Sri Lanka (Solimar International, 2022).

(https://www.solimarinternational.com/project/usaid-climate-adaptation-project/)

2.3 NATIONAL STRATEGIES, POLICIES AND PLANS:

The following national strategies, policies and plans can be applied in climate adaptation.

- **Sustainable Development Goals (SDGs) 2015-2030**

Goals 13 (Climate Action) and 11 (Sustainable Cities and Communities) of the SDGs are directly related to climate change adaptation. In addition, Goals 07, 14 and 15 could be used to tackle climate change (United Nations, 2022). See the below link for the SDGs.

(https://sdgs.un.org/goals)

- **Technology Needs Assessment and Technology Action Plans for Climate Change Adaptation (for food, health, and water sectors) (2011-2016)**

This aims to identify and assess environmentally sound technologies that have synergy between reducing the impact of climate change and the rate of GHG emissions in Sri Lanka within national development objectives (Vizzuality, 2022b). See the link below for more details.

(https://www.climate-laws.org/geographies/sri-lanka/policies/technology-needs-assessment-and-technology-action-plans-for-climate-change-mitigation)

- **National Forest Policy (1995)**

The main objective of this policy is related to forest management and conservation. Necessary management and conservation approaches have been defined in the 1995 National Forest Policy (Climate Change Secretariat, 2020).

- **Forestry Sector Master Plan (1995-2020)**

The FSMP was considered as a comprehensive long-term development framework for the optimal development of the forestry sector for the period 1995-2020 (ESCAMP, 2022).

(https://www.escamp.lk/forestry-master-plan/)

- **National Air Quality Management Policy (2000)**

This National Policy focused on areas for Air Quality Management, prepared by National Experts. This is dependent upon the enforcement of the standards and laws that prevent air pollution (UN, 2022).

(https://www.unep.org/resources/policy-and-strategy/air-quality-policies-sri-lanka)

- **National Solid Waste Management Strategy (2000)**

The Solid Waste Management Strategy is important to reduce, where inappropriate dumping and other waste generation which can impact emission levels of the environment (Ministry of Environment, 2020).

(http://www.env.gov.lk/web/images/pdf/policies/National_Policy_on_Waste_Management_English.pdf)

- **Initial National Communication developed in 2000**

This comprises the national circumstances, greenhouse gas inventory, impacts and vulnerability, mitigation options and adaptation responses, policies and measures, education, training and awareness programmes, constraints and technological needs, recommended research studies and a portfolio of projects. See the link below for the document (Climate Change Secretariat, 2022).

(http://www.climatechange.lk/Documents/First%20National%20Communication.pdf)

- **National Environmental Policy (2004)**

The National Environmental Policy provides direction as to which steps will be taken to conserve and manage Sri Lanka's environment in all its aspects(Ministry of Environment-Sri Lanka, 2021). See the link below for more details.

(http://www.env.gov.lk/web/images/downloads/policies/national_environmental_policy_2003.pdf)

- **National Wetlands Policy (2006)**

This policy ensures the protection of wetlands and conservation strategies which would help to carry out sustainable development in the country (Ministry of Environment-Sri Lanka, 2021). See the link below for more details.

(https://env.gov.lk/web/images/downloads/policies/national_policy_on_wetlands.pdf)

- **National Land Use Policy (2007)**

The national land use policy will provide an appropriate policy framework for the protection, conservation and sustainable use of land resources in the country (Land Use Policy Planning Department, 2022). See the link below for more details.

(https://luppd.gov.lk/images/content_image/downloads/pdf/national_land_use_policy.pdf)

- **National Climate Change Policy**

This policy addresses climate change issues locally while engaging in the global context. It aims at fostering adaptation and mitigation efforts within the framework of sustainable development(Ministry of Environment-Sri Lanka, 2021). See the link below for more details.

(https://www.climate-laws.org/geographies/sri-lanka/policies/national-climate-change-policy-of-sri-lanka)

- **Nationally Appropriate Mitigation Action (NAMA) on Energy Generation and End Use Sectors (2010)**

This report aims to support appropriate climate change mitigation action in energy generation and end-use sectors as part of the initiatives to achieve the GHG mitigation targets of Sri Lanka (Climate Change Secretariat, 2020).

(http://www.climatechange.lk/nama/)

- **Second National Communication (2011)**

This aimed to identify initiatives to reduce emissions from the sub sector. Further to mitigating the above, technology transfer, research and systematic observations along with education, training and public awareness is facilitated(Climate change secretariat, 2016). See the link below for the second national communication.

(http://www.climatechange.lk/SNC/Final_Reports/SNC_Final_Report/SNC.pdf)

- **National Climate Change Adaptation Strategy (NCCAS) (2011-2016)**

This document outlines a comprehensive National Climate Change Adaptation Strategy (NCCAS) which lays out a prioritized framework for action and investment for the 2011- 2016 period, aimed to create a climate change resilient future in Sri Lanka(Climate change secretariat, 2016a). See the link below for NCCAS.

(https://www.climate-laws.org/geographies/sri-lanka/policies/national-climate-change-adaptation-strategy-for-sri-lanka-2011-to-2016)

- **NAMA on Transportation (Draft) (2015)**

NAMAs are voluntary, non-binding policy instruments that provide a framework for pursuing a country's socio-economic and development goals while contributing towards global greenhouse gas mitigation efforts. See the link below for NAMA(NAMA Design Document for Transport Sector of Sri Lanka DRAFT, 2015).

(https://docslib.org/doc/11650488/nama-design-document-for-transport-sector-of-sri-lanka)

- **National Adaptation Plan(NAP) for Climate Change Impacts (2016-2025)**

The National Adaptation Plan for Climate Change Impacts in Sri Lanka (NAP) was prepared in line with the broad set of guidelines set forth by the UNFCCC for the development of national adaptation plans(Climate change secretariat, 2016b). See the link below for NAP.

(https://www.climate-laws.org/geographies/sri-lanka/policies/national-adaptation-plan-for-climate-change-impacts-2016-2025)

- **The Long-Term Electricity Generation Expansion Plan (2015-2032)**

The report captures two possible approaches when responding to climate change such as mitigation and adaptation measures in the energy sector(Ceylon Electricity Board, 2013). See the link below for the above plan.

(https://docslib.org/doc/1730156/ceylon-electricity-board-long-term-generation-expansion-plan)

- **National Biodiversity Strategic Action Plan (NBSAP)(2016-2022)**

This integrates climate change considerations such as coastal flooding, salinity intrusion, changes in ocean wave currents and etc(Unit, B. 2022). See the link below for the NBSAP.

(https://www.cbd.int/nbsap/about/latest/#lk)

- **Coastal Zone and Coastal Resources Management Plan of 2018**

This plan focuses on shoreline management, conservation of coastal habitats, control of coastal water pollution, dealing with special management areas, and improving regulatory mechanisms(Vizzuality, 2022).

See the link below for the Coastal zone management plan.

(https://www.climate-laws.org/geographies/sri-lanka/policies/coastal-zone-and-coastal-resource-management-plan-2018)

- **Sector Vulnerably Profiles: Water, Health Agriculture and Fisheries, Urban Development, Human Settlements and Economic Infrastructure (2007-2016)**

These profiles highlight key climate change related issues and risks while setting out the importance of strategically adopting climate change adaptation measures to meet these risks without interrupting the country's national development agenda(Climate Change Secretariat, 2010).

(http://www.climatechange.lk/adaptation/Files/Agriculture_and_Fisheries_SVP_Nov-16-2010.pdf)

- **National REDD+ Investment Framework and Action Plan (NRIFAP)**

This plan strengthens the sustainable management of forest plantations. Planted forests can be effective in sequestering carbon and therefore in mitigating climate change(UN-REDD PROGRAMME, 2022).

(https://www.un-redd.org/sites/default/files/2021-10/NRIFAP%202018-2022_English_chapter_1_5%20%28961894%29.pdf)

AVAILABLE DATABASES:

The following bullet points indicate the existing databases and e- repositories in Sri Lanka that can be utilized for climate adaptation. Majorly, e-repositories share different kinds of publications that can be used in climate change adaptation research and initiatives. Other databases provide statistical and spatial data which can also be used in climate adaptation research and initiatives.

Databases

- **Open Data Initiative of the Government of Sri Lanka** (https://data.gov.lk/)
  This is an open data sharing portal which provides access to data pertaining to sectors such as economic, demographic, transport, etc., for the general public. However, the available data sets are very limited. These types of data would be helpful in decision-making activities for climate change adaptation.

- **Risk Info database of Disaster Management Center Sri Lanka**(http://riskinfo.lk/#/)
  This database consists of freely downloadable spatial data(categories of roads, administrative boundaries, forests, and flood-affected areas)

- **Disinventra of Disaster Management Center Sri Lanka(**http://www.desinventar.lk/)
  This is an open-source database which provides data(statistical, spatial, and reports) on post-disaster incidents from 1974 to date.

- **Database of Department of Meteorology(**http://meteo.gov.lk/index.php?optio**)**

  This database provides data to relevant parties at a given price. Data related to weather and climate, sea levels, tidal data etc. could be obtained from the Department of Meteorology.

- **Geological records, building material records of the National Building Research Organization(NBRO)**

(https://nbro.gov.lk/index.php?option=com_content&view=article&layout=edit&id=215&lang=en)
This database provides spatial data related to landslides, ambient air quality, rainfall and etc. Most data are accessible via the internet. However, users have to pay a considerable amount to retrieve the data. Further, reports and other publications are available on the website.

Repositories

- **Sri Lanka Climate Change Knowledge Repository** (http://cckr.climatechange.lk/)
  This database is governed by the Climate Change Secretariat(CCS) of Sri Lanka. It consists of reports and publications that have been published thus far on climate change adaptation and mitigation. All publications are freely available and can be downloaded(Climate Change Secretariat, 2022).

- **National Science Foundation of Sri Lanka, National e-Repository**(http://dl.nsf.ac.lk/)
  This e-Repository of the National Science Foundation of Sri Lanka shares publications regarding climate adaptation and mitigation(National Science Foundation, 2019). All publications are freely available and can be downloaded.

- **Sri Lanka Journals Online** (https://www.sljol.info/)
  This e- Repository shares publications regrding climate adaptation and mitigation. All publications are freely available and can be downloaded(Sri Lankan Journals Online, 2022).

- **Coconut Research Institute Sri Lanka Repository** (http://cri.nsf.ac.lk/discover)
  This repository provides freely available publications related to adaptation measures specifically on coconut cultivation.

- **Central Environmental Authority Repository (**http://cea.nsf.ac.lk/**)**
  This database hosts, preserves, and disseminates full texts of scholarly papers produced by members of the institute. In addition, it shares several other environmental profile data. All these can be freely downloaded.

- **Hector Kobbekaduwa Agrarian Research and Training Institute (**http://harti.nsf.ac.lk/)
  This repository preserves and offers access to full scholarly articles of Sri Lankan origin. Publications related to climate change adaptation are available.

- **Rubber Research Institute of Sri Lanka Repository (**http://rri.nsf.ac.lk/)
  This repository provides access to full scholarly articles of Sri Lankan origin. This consists of publications related to climate adaptation, specifically on rubber cultivation.

- **Tea Research Institute of Sri Lanka Repository (**http://tri.nsf.ac.lk/discover)
  This also provides access to scholary articles of Sri Lankan origin and consists of articles related to climate adaptation in tea cultivation.

E- Repositories of Sri Lankan Universities

The following E-Repositories of Sri Lankan universities provide access to publications related to climate adaptations.

- Repository: South Eastern University of Sri Lanka (http://ir.lib.seu.ac.lk/)
- E – Resources: University of Sri Jayawardanapura – Sri Lanka (http://lib.sjp.ac.lk/e-resources/)
- Digital Archive: The Open University of Sri Lanka
- Digital Library: University of Peradeniya – Sri Lanka(http://dlib.pdn.ac.lk/)
- Institutional Repository: University of Ruhuna – Sri Lanka
- Institutional Repository: Rajaratha University of Sri Lanka
- E – Repository: University of Colombo – Sri Lanka
- Institutional Repository: University of Moratuwa – Sri Lanka (http://dl.lib.uom.lk/)
- Institutional Repository: Eastern University of Sri Lanka

2.4 AVAILABLE REGULATIONS AND GUIDELINES:

The following regulations and guidelines can be applied in climate adaptation.

- **World Meteorological Organization (WMO) Regulations**

The regulations state that defining standards and best practices for climate observations is critically important universally. Identified meteorological data will help in decision making activities related to climate change adaptation(World Meteorological Organization, 2021). See the below link for the WMO regulations.

(https://community.wmo.int/manuals-guides-technical-regulations)

- **Environmental Impact Assessment (EIA) guidelines**

This ensures that development options under consideration are environmentally sound and sustainable and that environmental consequences are recognized and taken into account early in the project design stage(Central Environmental Authority, 2022). See the below link for the EIA guidelines.

(http://www.cea.lk/web/eia-guidelines)

- **Guidelines of National Building Research Organization(NBRO)**

These guidelines assist in the planning, conducting and reporting geotechnical related construction of a proposed development. This would control the construction in risk areas and necessary precautionary methods for construction.

(https://www.nbro.gov.lk/index.php?option=com_content&view=article&id=275&Itemid=471&lang=en)

2.5 SOFTWARE/HARDWARE/SCIENTIFIC FACILITIES:

- Mapping Software
  Softwares such as Arc GIS 10.8 and Arc GIS Pro are important in identifying vulnerable areas to climate change
- Hydraulic modelling software

HEC-HMS, SWAT, HEC-RAS, HEC-ResSim

- Open-source software
  MOLUSCE (for Land use change analysis, Land surface change analysis)
  LiDAR Data - For thermal comfort analysis
- Design Builder
- MATLAB, Python Platform - For analysing the climate data

3 Selection of country-level most suitable case studies.

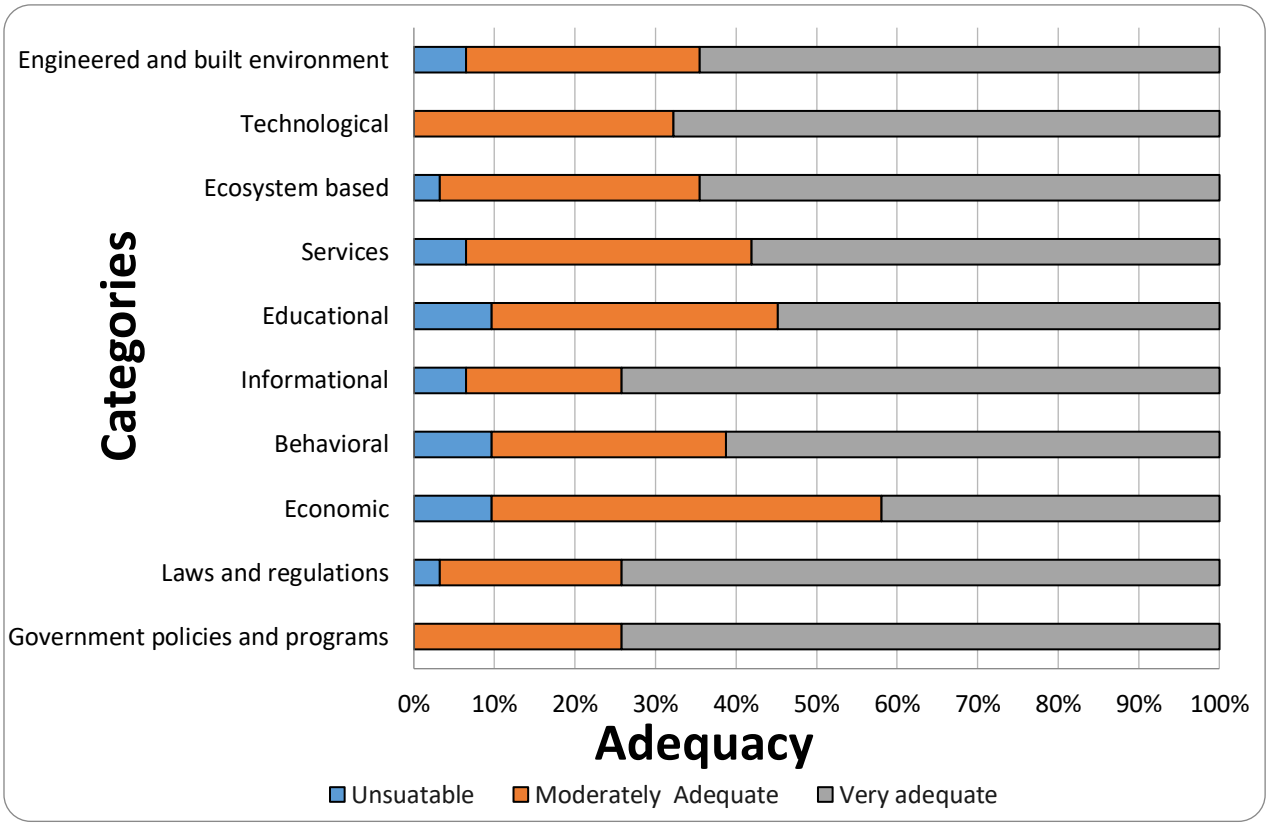
This analysis was based on five categories, including the national and local governments, civil and professional associations, academia, the community, and the private sector. Responses from 31 respondents were included in this summary. The figure below is a visual analysis of the interview responses. Informational, laws and regulations, and government policies and program catergorise were identified as very adequate within the Sri Lankan context. Considering the informational category, most respondents confirmed that the informational category is very adequate since no common data-sharing mechanisms exist in Sri Lanka. Also, it was revealed that improvements should be made to provide real-time flood forecasts, hazard mapping, and a platform for storing climate data that is routinely updated to conduct built environment-related projects.

In terms of the laws and regulations applicable to the Sri Lankan context, there is a gap in construction codes related to climate change. Further, the absence of a Climate Act has caused the limited implementation of adaptation measures while existing laws and regulations are also not well practised. In addition, the laws that support research activities of government agencies such as the Irrigation Department or Meteorology Department and universities are absent in Sri Lanka. Collaboration between universities and authorities is also required. For example, Sri Lanka does not have groundwater quality standards although it does have surface water quality standards. Also, there is no baseline for studying the quality of groundwater. Therefore, Sri Lanka should implement such rules and regulations which are crucial.

Concerning the ‘government policies and programmes’ category, there is a challenge regarding the implementation of the items listed in various country reports. Considering the Sri Lankan context, government policies and programs depict the political will to implement adaptation measures. Sri Lanka has different kinds of policies and programmes that can be applied to climate change adaptation, though they are not implemented. Therefore, having a mechanism to implement those measures is very adequate. In addition to that existing government policies and programmes should be updated.

In the present context, most adaptation measures are related to engineering solutions and new technologies. Therefore, categories such as engineering and built environment, and technology are very adequate. However, respondents mentioned that Sri Lanka has a problem of achieving such categories due to the cost of these adaptation categories as the current economic crisis would worsen the problem. Further, as Sri Lanka is a country with rich ecosystems across and around the country, the ‘ecosystems category’ is also very adequate. Considering the education category, some respondents mentioned that climate adaptation and mitigation education should be initiated at the school level and especially since primary education. Also, respondents mentioned that climate change should be a great concern within tertiary education also. Therefore, having good education would enhance the knowledge of citizens.

According to the validation results, most respondents accepted that all categories are adequate. An important fact that respondents highlighted is that projects should be contextualized to the local phenomenon when implemented under these categories and when taking examples from international contexts. If not, it would be a failure.



4 References

Adaptation Fund (2022). *Build resilience to climate change and climate variability of vulnerable communities in Mullaitivu District of Sri Lanka*. Adaptation Fund. Retrieved December 8, 2022, from https://www.adaptation-fund.org/project/build-resilience-to-climate-change-and-climate-variability-of-vulnerable-communities-in-mullaitivu-district-of-sri-lanka/

Central Environmental Authority (2022). EIA guidelines. Retrieved December 8, 2022, from http://www.cea.lk/web/eia-guidelines

Ceylon Electricity Board (2013). *Ceylon Electricity Board Long Term Generation Expansion Plan*. Docslib. Retrieved December 8, 2022, from https://docslib.org/doc/1730156/ceylon-electricity-board-long-term-generation-expansion-plan

Climate Change Secretariat (2022). *Download documents/publications*. Climate Change Secretariat Sri Lanka. Retrieved December 10, 2022, from https://climatechange.gov.ng/national-policy-on-climate-change/

Climate Change Secretariat (2010). *Sector vulnerability profile: Agriculture and fisheries - climate change*. Climate Change Secretariat. Retrieved December 10, 2022, from http://www.climatechange.lk/adaptation/Files/Agriculture_and_Fisheries_SVP_Nov-16-2010.pdf

Climate Change Secretariat (2020). *Namas Sri Lanka*. Sri Lanka Nationally Appropriate Mitigation Actions. Retrieved December 10, 2022, from http://www.climatechange.lk/nama/

Climate Technology Centre & Network (2022). *Active technical assistance*. Active Technical Assistance | Climate Technology Centre & Network. Retrieved December 12, 2022, from https://www.ctc-n.org/technical-assistance/data?f%5B0%5D=ta_page_countries_ref_facets%3A25121

Climate change secretariat (2016a). *Publications.* Climate change secretariat. Retrieved December 10, 2022, from http://climatechange.lk/SNC/Final_Reports/SNC_Final_Report/SNC.pdf

Climate Change Secretariat (2016b). *National Adaptation Plan*. NAP. Retrieved December 12, 2022, from http://www.climatechange.lk/Index_NAP.html

Coast Conservation Act No. 57 of 1981 (SL). Retrieved from http://citizenslanka.org/wp-content/uploads/2016/02/Coast-Conservation-Act-No-57-of-1981-E.pdf

Disaster Management Act No. 13 of 2005 (SL). Retrieved from http://www.unlocked.lk/wp-content/uploads/2019/06/Disaster-Management-Act_E.pdf

Environmental Law Alliance Worldwide (2015). *National Environment Act*. ELAW. Retrieved December 12, 2022, from http://elaw.org/system/files/National+Environmental+Act+of+1980.pdf

ESCAMP (2022). *Forestry sector master plan*. Forestry sector master plan | escamp. Retrieved December 12, 2022, from https://www.escamp.lk/forestry-master-plan/

Fauna and Flora Protection (Amendment) Act No. 22 OF 2009 (SL). Retrieved from https://stepbysteptrade.lk/media/ordinanceeng_1.pdf

Guido (2022). *Sri Lanka and ADB.* Asian Development Bank. Retrieved December 8, 2022, from https://www.adb.org/countries/sri-lanka/main#projects

Global Environment Facility (2022). *Promoting sustainable biomass energy production and modern Bio-Energy Technologies*. Global Environment Facility. Retrieved December 8, 2022, from https://www.thegef.org/projects-operations/projects/4096

Green Climate Fund. (2019). *Sri Lanka*. Green Climate Fund. Retrieved December 8, 2022, from https://www.greenclimate.fund/countries/sri-lanka

International Finance Corporation (2022). *IFC PROJECT INFORMATION & DATA PORTAL*. International Finance Corporation-World Bank Group. Retrieved December 8, 2022, from https://disclosures.ifc.org/enterprise-search-results-home?f_region_description=SARREG

Land Use Policy Planning Department (2022). *National Land Use Policy of Sri Lanka*. Land Use Policy Planning Department. Retrieved December 8, 2022, from https://luppd.gov.lk/images/content_image/downloads/pdf/national_land_use_policy.pdf

Ministry of Environment-Sri Lanka (2022). Retrieved December 15, 2022, from http://www.env.gov.lk/web/images/downloads/policies/national_environmental_policy_2003.pdf

Ministry of Environment-Sri Lanka (2021). *National Environmental Policy and Strategies*.

Ministry of Environment (2020). *National policy on waste management*. Ministry of Environment. Retrieved December 15, 2022, from http://www.env.gov.lk/web/images/pdf/policies/National_Policy_on_Waste_Management_English.pdf

National Environment Act No. 47 of 1980 (SL). Retrieved fromhttps://www.elaw.org/system/files/National+Environmental+Act+of+1980.pdf

NAMA Design Document for Transport Sector of Sri Lanka DRAFT. (2015). http://www.climatechange.lk/NAMAs/SL%20Transport%20Sector%20NAMA-Semi%20Final.pdf

Solimar International (2022). *USAID Climate Adaptation Project in the Maldives & Sri Lanka*. Solimar International. Retrieved December 15, 2022, from https://www.solimarinternational.com/project/usaid-climate-adaptation-project/

Sri Lanka Land Reclamation and Development Corporation Act No. 52 of 1982 (SL). Retrieved from https://www.lawnet.gov.lk/sri-lanka-land-reclamation-and-development-corporation-2/

The Soil Conservation Act No.25 of 1951 (SL). Retrieved from https://www.lawnet.gov.lk/soil-conservation-3/

UN World Food Programme (2022). *SAVING LIVES CHANGING LIVES*. UN World Food Programme. Retrieved December 11, 2022, from https://www.wfp.org/publications?f%5B0%5D=country%3A2086&f%5B1%5D=topics%3A2140

United Nations (2022). *The 17 goals | sustainable development*. United Nations. Retrieved December 11, 2022, from https://sdgs.un.org/goals

Unit, B. (2022). *Latest nbsap??s*. Convention on Biological Diversity. Retrieved December 11, 2022, from https://www.cbd.int/nbsap/about/latest/#lk

UN-REDD PROGRAMME (2022). *National Redd+ Investment Framework and Action Plan (NRIFAP) - un-redd.org*. UN-REDD PROGRAMME. Retrieved December 15, 2022, from https://www.un-redd.org/sites/default/files/2021-10/NRIFAP%202018-2022_English_chapter_1_5%20%28961894%29.pdf

Urban Development Authority (Amendment) Act No. 49 of 1987(SL). Retrieved from https://www.lawnet.gov.lk/urban-development-authority-3/

UN (2022). *Air Quality Policies in Sri Lanka*. UNEP. Retrieved December 11, 2022, from https://www.unep.org/resources/policy-and-strategy/air-quality-policies-sri-lanka

Vizzuality (2022a). *Coastal Zone and Coastal Resource Management Plan 2018*. Sri Lanka - Climate Change Laws of the World. Retrieved December 11, 2022, from https://www.climate-laws.org/geographies/sri-lanka/policies/coastal-zone-and-coastal-resource-management-plan-2018

Vizzuality (2022b). *Technology needs assessment and technology action plans for climate change mitigation*. Sri Lanka - Climate Change Laws of the World. Retrieved December 11, 2022, from https://www.climate-laws.org/geographies/sri-lanka/policies/technology-needs-assessment-and-technology-action-plans-for-climate-change-mitigation

World Bank (2022). *Projects*. World Bank. Retrieved December 15, 2022, from https://projects.worldbank.org/en/projects-operations/projects-list?countrycode_exact=LK&countryshortname_exact=Sri+Lanka&strdate=01-02-2018&os=0&enddate=11-15-2022

World Meteorological Organization (2021). *Manuals-Guides-Technical Regulations | World Meteorological Organization*. World Meteorological Organization. Retrieved December 15, 2022, from https://community.wmo.int/manuals-guides-technical-regulations

5 Acknowledgements

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Partners Report

Department of Irrigation

Department of Meteorology

Disaster Management Centre

Friends of the earth organization

Green building council of Sri Lanka

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National Building Research Organization

National Water Supply and Drainage Board

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