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MARINE WASTE MANAGEMENT PROCESS IN SRI LANKA: OUTCOMES FROM INSTITUTIONAL, POLICY AND LEGISLATIVE REVIEW

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ACRONYMS

BRT	Blue Resources Trust
CCCRMD	Coast Conservation and Coastal Resources Management Department
CEA	Central Environment Authority
Cefas	Centre for Environment Fisheries and Aquaculture Science
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLiP	Commonwealth Litter Programme
COVID-19	Coronavirus Disease
CP	Cleaner Production
CPP	Cast Polypropylene (Nylon)
EEZ	Exclusive Economic Zone
EIA	Environment Impact Assessment
GDP	Gross Domestic Production
IEE	Initial Environmental Examinations
IMO	International Maritime Organization
ITI	Industrial Technology Institute
LAs	Local Authorities
MARPOL	International Convention for the Prevention of Pollution from Ships
MEPA	Marine Environment Protection Authority
MT	Metric Tonnes
NARA	National Aquatic Resources Research and Development Agency
NCPC	National Cleaner Production Centre of Sri Lanka
NGO	Non-Governmental Organization
NLS	Noxious Liquid Substances
NWPEA	North Western Provincial Environmental Authority
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PET	Polyethylene Terephthalate
PETG	Polyethylene Terephthalate Glycol
PVC	Polyvinyl Chloride



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SACEP	South Asia Co-operative Environment Programme
SCP	Sustainable Consumption and Production
SDC	Sustainable Development Council
SWM	Solid Waste Management
UK	United Kingdom
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization



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EXECUTIVE SUMMARY

This study was carried out under the Commonwealth Litter Programme (CLiP), an initiative funded by the UK Government to support developing countries across the Commonwealth to prevent plastics entering the ocean. The fieldwork was carried out by the Blue Resources Trust team led by Prof. Sevvandi Jayakody. The report outlines the findings from an institutional analysis and a policy analysis in relation to marine litter management.

A combination of direct and indirect policies, legislations, regulations, and programmes are in place to handle both land-based and sea-based marine litter management as well as several agencies that work cordially at all levels including implementation and monitoring.

Although legal and institutional frameworks are in place, manpower, technical capacity, and skill required for marine litter management are absent. Whilst land-based litter management is well understood and implemented, for marine litter management, there is a vacuum of competent staff that have the skills to work in water and underwater. Litter up to the shoreline is addressed, but litter in the sea remains a challenge. The presence of certain garbage types and their accumulation has posed new threats and new needs for marine litter management.

The report presents a list of recommendations based on the gaps identified during the study. Sri Lanka should engage with neighbouring countries using already available options for bilateral engagements at the ocean basin level to tackle transboundary waste. Adoption of accountability, polluter pays principle, and sharing good practices are recommended.

Regular updates on the roles and progress of actions by each agency with a mandate on waste, should be done by forming an apex body that can monitor the overall waste management of Sri Lanka. As the responsibilities are scattered among many agencies, it is recommended to form this proposed apex committee.

Socio-economic studies related to waste handling behaviour of different communities are recommended. The outcome should be used to derive mechanisms to reduce marine litter through awareness, engagement, and sharing of good practices.

Inflows of land-based litter to coastline should be given priority and options should focus on using apex recommendations of waste management hierarchy. Unless it is done, the marine litter will be a major threat to the social, economic, and environmental well-being of Sri Lanka.

BACKGROUND TO CEFAS ACTIVITIES

The Commonwealth Litter Programme (CLiP) is a programme implemented by the Centre for Environment Fisheries and Aquaculture Science (Cefas) and funded by the UK Government. Since 2018, CLiP has supported several countries around the World to take action on plastics entering the ocean through a series of activities carried out in the South Pacific, the Caribbean and southern Africa. In 2020/2021, CLiP focused on South Asia delivering several initiatives in Sri Lanka, Maldives and India.

CLiP activities in Sri Lanka are the result of the collaboration with local partners, led by the Sri Lanka Government (Foreign Ministry, Ministry of Environment). The stakeholders engaged in the consultation and implementation stage included academics, NGOs, governmental departments, administrators, and private companies. CLiP actions aimed at investigating the potential land-based and sea-based sources of marine litter in Sri Lanka in order to provide useful information for the drafting and implementation of future mitigative actions. Through training activities and the purchase of laboratories and monitoring gear, CLiP built the capacity to investigate marine litter and microplastics in Sri Lanka across several institutions. Webinars and workshops were part of the programme with the aim of supporting the creation of a network of relevant stakeholders in Sri Lanka. At the same time, the project promoted the dissemination of best practices to tackle plastic pollution and created education and outreach material to increase awareness on marine plastic pollution across Sri Lankan communities.

1. INTRODUCTION

1. Country information

Sri Lanka, formerly known as Ceylon (officially the Democratic Socialist Republic of Sri Lanka), is an island nation in the Indian Ocean, separated from India by the Gulf of Mannar and the Palk Strait. The country is positioned between 5° 54 'and 9° 52 'North Latitude and 79° 39 ' and 81° 53 'East Longitude, just below India (Figure 1) (Sri Lanka Coastal Zone and Coastal Resource Management Plan ,2018) between the Arabian Sea to its northwest and the Bay of Bengal to its northeast. The island is sharing maritime borders with India to the northwest and with the Maldives in the southwest. The island has a land area of 65,610 km² (Koralagama, 2008) and stretches over 432 km from north to south and 224 km from east to west (Department of Census and Statistics, 2019). Three-quarters of the land consists of a broad first peneplain with an average elevation of 75 m above sea level. A second peneplain rises to 500 m, and towards the south, a third peneplain rises steeply to form a mountain massif that reaches an elevation of 2500 m (FAO, 2011).

The country has a 1710 km long coastline and 30,000 km² continental shelf area up to 120 m depth. Sri Lanka has sovereign rights of an Exclusive Economic Zone of 510,000 km² of the ocean, which is around 7.8 times the land area of the country (Arachchige *et al.*, 2017; Koralagama, 2008).

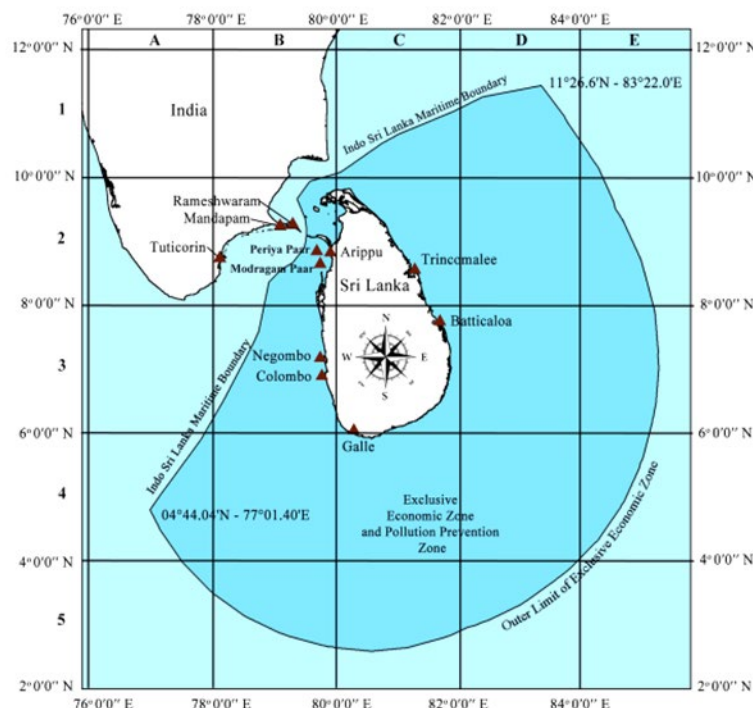


Figure 1: Map of Exclusive Economic Zone (Source: Arachchige *et al.*, 2017)



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The climate of Sri Lanka is classified as “Tropical monsoon” climatic zone. There are two monsoonal seasons: from May to September (southwest monsoon period) and from December to February (northeast monsoon period (Ranatunge *et al.*, 2003). The rainfall pattern is influenced by monsoon winds and the average annual rainfall has considerable spatial variation. The average annual temperature is about 28°C in the low lands and about 16°C in the Nuwara Eliya in the central highland at an altitude of 1,800 m (JICA and WRB, 2003). The country receives an average 2000 mm of rain annually, amounting to about 130 billion m³ of water. The surface water that remains after evapotranspiration and seepage, drains into the sea through the well-organized system of natural river basins. Sri Lanka has a total of 103 distinct natural stream basins (Figure 2) (Department of Census and Statistics, 2019).



Figure 2: Sri Lanka Map

(Source-Maps of the World, 2016)

According to the official statistics, the population of Sri Lanka is estimated to be 21 million by 2020 (Department of Census and Statistics, 2020). About 40 percent of the country's population lives mostly in townships and hamlets within 2 km from the coast and is engaged mostly in economic activities based on coastal and marine resources. The main economic sectors of the country are tourism, tea export, apparel, textile, rice production, and other agricultural products (GlobalTenders.com, 2021). Sri Lanka is classified as a lower-middle-income country and economy (World Bank Group and the Asian Development Bank, 2020).

2. Marine litter

Marine litter (or marine debris) is defined as “any persistent, manufactured, or processed solid material that is discarded, disposed of or abandoned in the marine and coastal environment” (UNEP, 2009) and includes items originating from either land or sea-based sources. During the last three decades, the quantity of litter in the marine environment has substantially increased (SACEP, 2007) and today the total input of marine litter into the ocean and seas worldwide is estimated to be 6.4 million tonnes per year, which contributes 8 million items every day (13,000 pieces of plastic on every square km) (www.un.org/Marine Litter, 2021). Island nations are highly vulnerable for marine litter and transboundary activities contribute a significant level for marine litter in coastal states and islands (Mafaziya *et al.*, 2020).

Marine litter results from human actions and behaviour, whether deliberate or accidental, and is the product of poor waste management, inadequate infrastructure, and a lack of public knowledge about the potential consequences of inappropriate waste disposal (UNEP, 2009). While there is widespread consensus that the majority of marine litter is from land-based

sources (Moora and Piirsalu, 2016), especially along coastlines and river catchments (Renaud *et al.*, 2018), however major sea-based activities (shipping, fisheries, extraction, fish farming, tourism and leisure) also contribute for marine litter generation.

3. Sri Lanka status

Sri Lanka has been included in the list of the top producers of marine litter worldwide (Jambeck *et al.*, 2015) based on the estimated amount of mismanaged waste. Today, Sri Lanka generates about 400 MT of plastic & polythene waste per day including 15 million lunch sheets and 20 million shopping bags (UNON, 2021). Mafaziya *et al.* (2020) report that more than 90% of the litter in Sri Lankan coasts originates from the land through untreated municipal sewage discharge, stormwater, and riverine transport of waste from dumpsites on marshland and wetlands. The influence of land-based activities on the production of marine litter is also due to the fact that 60% of the national industrial facilities and over 70% of the country's tourist establishments are located in the coastal zone. With the introduction of the free economy in late 1970's, there have been changes in consumption patterns and to the types of food packaging (Gunasekara, 2018).

Sri Lanka is at the centre of international shipping lanes connecting East and West, roughly 10 nautical miles off the traditional East-West maritime trade route (Figure 3). As Sri Lanka is an island nation, location enables the country to provide quick and efficient global and regional connectivity to move cargo to and from Asia to the rest of the world. Both Colombo port and the Hambantota port have the benefits of their strategic location. It has been reported that Sri Lanka accounts for 24% of container traffic in the South Asian region (Hellenic Shipping News Worldwide (2020)) and estimates suggested that around 60,000 ships are passing through the country's waters annually (Figure 4) (Embassy of Sri Lanka in South Korea, 2016). On top of the normal production of marine litter from routine activities, the shipping industry can also produce huge quantities of marine litter as results of incidents.

In addition to the Sri Lankan contribution to the country's marine litter, transboundary and EEZ activities also contribute to marine pollution in Sri Lanka (McIlgorm *et al.*, 2011). A research survey along Sri Lankan beaches showed that plastic debris accumulation is high on the eastern coast, and it mainly occurs in river mouths and urban beach areas and some of this debris originated from countries associated with the Bay of Bengal. (Jang *et al.* 2018).

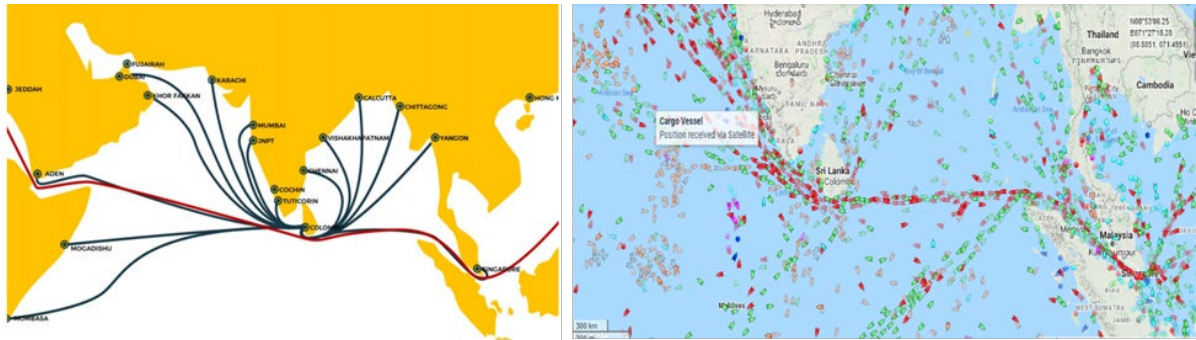


Figure 3: Left - Marine traffic around Sri Lanka EEZ (Source: Marine Traffic-01/01/2021); right - Shipping lanes around Sri Lanka (Source: Embassy of Sri Lanka in South Korea, 2016)

4. Objectives of the study

This study is an institutional and legal review of the current practices, laws, regulations and international agreements related to the marine litter management implemented in country. The review includes policies and institutional frameworks related to the management of marine litter sources to understand what agencies have a mandate on this type of pollution, what regulations are in place and to identify gaps and suggestions for further improvements

This report is part of a series of three documents that present the results of three related studies carried out under the Commonwealth Litter Programme to understand the status of marine litter in Sri Lanka. The other two reports focus on:

- 1) the first systematic study conducted in Sri Lanka to assess the status of port waste management in selected commercial, naval, and fisher ports using internationally accepted questionnaires (BRT, 2021a).
- 2) A survey of beach litter on landing sites and other beaches around the coast of Sri Lanka using the protocol developed by the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) (BRT, 2021b).

2. METHODOLOGY

2.1. Policy Review

A policy review was accomplished through an extensive review of legal documents related to waste management. A total of 50 documents among policies, acts, ordinances, regulations, and guidelines were collected and reviewed to identify the relevant clauses for marine litter management. They were categorised as legal documents with either (a) direct or (b) indirect link to marine litter management.

2.2. Institutional Review

The institutes that are linked directly and indirectly to waste management in Sri Lanka were reviewed through their organisational mandate. The gazette notification (No. 2153/12) of 2019 and amendment (No. 2196/27) of 2020, were used as the fundamental documents to determine subject allocation and mandate. The institutes were classified based on their relationship to waste management as either policy formulation, implementation, or monitoring.

3. MARINE WASTE MANAGEMENT PROCESS IN SRI LANKA: OUTCOMES FROM INSTITUTIONAL, POLICY AND LEGISLATIVE REVIEW

3.1. Institutional Framework on handling marine pollution

Several institutes have a legal mandate to manage various aspects of the waste life-cycle for solid waste generated on land and sea in Sri Lanka, ports waste and waste on beaches. All these agencies are involved at different administrative horizons at the national, regional, or local level. In Sri Lanka, the governance system is divided into three pillars: central, provincial, and local authorities. The local authorities include municipal councils, which cover cities and larger urban areas; urban councils, which cover smaller towns, and rural councils, which are also called Pradeshiya Sabhas (Smoke, 2015). Those administrative bodies have power on different aspects of waste management in Sri Lanka and have a direct influence on marine waste management.

Table 1 lists the agencies that have a mandate on various aspects of waste management in Sri Lanka, including marine litter management. The mandate may concern policy formulation, implementation, monitoring, or reporting.

3.2. Institutional involvement at the implementation level

There are a number of different institutes involved in the implementation of waste management (**Table 1** and **Table 2**) at the national and local authority levels (**Table 3** and **Table 4**).



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Table 1: Institutes in charge of waste management at the national level.

No	Institute	General background in relation to waste management	Implementation contribution in relation to the legal mandate
1	Ministry of Environment	<p>The Ministry of Environment's scope is to conserve the environment, to maintain environmental quality, and to prevent pollution. It is committed to the management of the environment and natural resources of the country, maintaining the equilibrium between the trends in rapid economic development and the use of natural resources. Further, the ministry is the main focal point for the development of policies for waste management.</p> <p>Key agencies under this Ministry relevant for marine litter management: Central Environmental Authority (CEA, Table 3 - I).</p> <p>Main divisions that are linked to marine litter management: Education Training and Research Division, Environment Pollution Control & Chemical Management Division, Environment Planning, and Economics, Legal Division</p>	Policy development

No	Institute	General background in relation to waste management	Implementation contribution in relation to the legal mandate
2	State Ministry of Urban Development, Coast Conservation, Waste Disposal, and Public Sanitation	<p>The function of the State Ministry of Urban Development, Coast Conservation, Waste Disposal, and Public Sanitation is to assist in the formulation of policies in relation to urban development, coast conservation, waste disposal and community cleanliness for the creation of “Modern Cities and Clean Country” under the direction and guidance of the Minister of Urban Development and Housing. This State Ministry is mainly dealing with policy formulation of urban and ocean-related environment pollution prevention and management in Sri Lanka.</p> <p>Key agencies under this Ministry relevant for marine litter management: MEPA (Table 3- II) and Coast Conservation and Coastal Resources Management Department (CCCRMD, Table 3 - III).</p> <p>Main divisions that are linked to marine litter management: State Ministry-Technical division</p>	Policy development
3	Ministry of Health	<p>The Ministry of Health is responsible for healthcare waste management (clinical waste) in the country through policy formulation.</p> <p>Main divisions that are linked to marine litter management: Health Services in Sri Lanka</p>	Policy development

No	Institute	General background in relation to waste management	Implementation contribution in relation to the legal mandate
4	State Ministry of Provincial Council and Local Government	<p>The State Ministry of Provincial Council and Local Government, under the main umbrella of Ministry of Public Services, Provincial Council Government, is the implementer of relevant policies and plans to the nine provincial councils and from there to Local Authorities (LAs). The State Ministry is mainly acting as a coordinating body between the Central Government and LAs and provides help for human resource development, financing, technical assistance, and implementation of research activities for good governance.</p> <p>Main divisions that are linked to marine litter management: Provincial Councils, LAs (Table 3 - II, III).</p> <p>Key agencies under this Ministry relevant for marine litter management: Provincial Council Division (Table 2 - A, B, C, D, E).</p>	Policy development and coordinating body between the Central Government and LAs
5	Ministry of Fisheries	<p>The Ministry of Fisheries is responsible in the Central Government of Sri Lanka for fisheries. The Ministry is responsible for formulating and implementing national policy on fisheries and aquatic resources development and other subjects which come under its purview. This Ministry has already developed some policies to regulate ghost fishing gear in Sri Lanka.</p> <p>Main divisions that are linked to marine litter management: Technical division, Planning, and Monitoring division</p> <p>Key agencies under this Ministry relevant for marine litter management: Department of Fisheries and National Aquatic Resources Research and Development Agency (NARA) (Table 3 - VIII, X).</p>	Policy development

No	Institute	General background in relation to waste management	Implementation contribution in relation to the legal mandate
6	National Cleaner Production Centre	National Cleaner Production Centre of Sri Lanka (Sri Lanka NCPC) is the foremost provided of Cleaner Production (CP) solutions in Sri Lanka. The centre was established by the United Nations Industrial Development Organization (UNIDO) under the Ministry of Industry and Commerce to assist enterprises in adopting Cleaner Production. Founded in early 2002, Sri Lanka NCPC has approximately fifteen years of experience in promoting Resource Efficient & CP and resource efficiency in various manufacturing and service sectors in Sri Lanka.	Assistance for the implementation of resource-efficient CP concept, training, and awareness

Table 2: Institutes in charge of waste management at the local authority level

No	Institute	General background in relation to waste management	Implementation contribution in relation to the legal mandate
A	Waste Management Authority- Western Province	The Western Province Provincial Council established the Waste Management Authority to be responsible for the supervision of waste management of the entire province and responsible for more than 60% of the total waste collected in the country. The Waste Management Authority is responsible for providing technical and financial assistance to LAs in Western Province to build their capacity in solid waste management, collecting waste data in the province, developing common final disposal sites to LAs, and also assisting LAs to inform the public about the waste management discipline.	Waste collection and management
B	Municipal Council	There are 24 Municipal Councils in Sri Lanka, which are the legislative bodies that preside over the largest cities and first-tier municipalities in the country. Municipal councils are responsible for the collection and disposal of municipal waste.	Waste collection and management
C	Urban Council	There are 41 Urban councils in Sri Lanka, which are the legislative bodies that preside over the second-tier municipalities in the country. Urban councils are responsible for the collection and disposal of urban waste.	Waste collection and management
D	Pradeshiya Sabha	There are 276 Pradeshiya Sabhas in Sri Lanka, which are the legislative bodies that preside over the third-tier municipalities in the country. Pradeshiya Sabhas are responsible for the collection and disposal of local level (village level) waste.	Waste collection and management

No	Institute	General background in relation to waste management	Implementation contribution in relation to the legal mandate
E	National Solid Waste Management Support Centre	The National Solid Waste Management Support Centre was established in 2017 to provide guidelines, technical and financial support for LAs to upgrade municipal solid waste management. These guidelines include ways to implement proper solid waste management, to provide technical assistance on solid waste management, and to analyse current practices and compare them with other countries.	Provide guidelines and technical assistant

Table 3: Institutional involvement at monitoring and reporting level.

No	Institute	General background in relation to waste management	Implementation contribution in relation to the legal mandate
I	Central Environmental Authority	CEA was established in 1981 to provide overall environmental protection. CEA acts as a main implementer of the National Environmental Act (1980) and has nine major thrust areas. The CEA was given wider regulatory powers under the amendments to National Environment Act in 1988 and 2000 (http://www.cea.lk/web/en). Some of the functions are associated with environmental pollution, laboratory services, and monitoring services. CEA is regulating solid waste management in the country. There are nine regional offices operating under CEA to regulate and monitor environment status in each province. The divisions such as Environment Pollution Control Division, Environmental Management, and Assessment Division, Waste Management Division, and Compliance Monitoring Unit are the main ones involved in waste management, including marine litter.	Regulating and Monitoring
II	Marine Environment Protection Authority	MEPA is the apex body entrusted with preventing marine pollution in territorial waters in Sri Lanka. MEPA helps to prevent, mitigate, and control marine pollution from sea-based and land-based sources. The authority has mandate to initiate penal actions against any form of marine pollution that damages marine resources and marine biodiversity. MEPA can also engage in waste management and waste reception facilities on ships. In addition to that, MEPA is issuing a permit for dumping waste at sea. There are fourteen regional offices operating under the umbrella of MEPA to facilitate regional level service.	Regulating and Monitoring

No	Institute	General background in relation to waste management	Implementation contribution in relation to the legal mandate
III	Coast Conservation and Coastal Resources Management Department	CCCRMD is the agency responsible for the developmental activities in coastal zones and for the implementation of the activities defined under the Coastal Zone Management Plan (revised every four years). CCCRMD mandate is to protect and preserve the coast from erosion or encroachment by the sea; and to control, plan and manage the development activities within the designated coastal zone through a permit system. The Coastal Zone Management Plan identifies the importance of pollution control and includes a special chapter on Coastal pollution control. The Coastal Resource Management Division and Monitoring and Evaluation Division are the major ones supporting the marine litter management on behalf of CCCRMD.	Regulating and Monitoring
IV	Provincial Environmental Authority-North Western Province	The North Western Province (NWP) passed the Provincial Environmental Statute in 1990 in order to protect, manage, and enhance the environment and to regulate, maintain and control its quality. This power is vested in the North Western Provincial Environmental Authority (NWPEA), as the subject of environment protection is listed in the concurrence list of the 9th schedule of the 13 th amendment to the constitution of Sri Lanka. NWPEA is mainly dealing with the management of waste in this province.	Regulating and Monitoring
V	Sustainable Development Council	The Sustainable Development Council of Sri Lanka (SDC) is the government agency tasked with monitoring and evaluating the government organisations that are working towards achieving the Sustainable Development Goals, that Sri Lanka undertook in accordance with the United Nations (UN).	Regulating and Monitoring

No	Institute	General background in relation to waste management	Implementation contribution in relation to the legal mandate
VI	Environment Police	The Colombo Municipal Council has taken steps to deploy civil police officers in order to arrest whoever wrongly disposes of garbage. Environmental Police and the Colombo Municipal Council were conducting raids in the city of Colombo to arrest those who dispose of garbage in an improper manner.	Regulating and Enforce the law
VII	Conservation unit of Sri Lanka Navy	The Conservation Unit of the Sri Lanka Navy is implementing several marine conservation activities including regular beach clean-ups and underwater clean-ups.	Regulating, Monitoring and implementation
VIII	Sri Lanka Coast Guard	Sri Lanka Coast Guard functions under the Ministry of Defence and acts as a law enforcement agency at sea. It provides the necessary assistance to relevant authorities for the implementation and monitoring of measures required for the prevention and control of marine pollution that occurs at sea.	Regulating, Monitoring and implementation

No	Institute	General background in relation to waste management	Implementation contribution in relation to the legal mandate
IX	The Department of Fisheries and Aquatic Resources	The Department of Fisheries and Aquatic Resources is mainly focusing on promoting environmentally sustainable fishing methods. In addition to that, the Department of Fisheries and Aquatic Resources is implementing various regulations and is implementing the rules and regulations to reduce impacts of Abandoned, Lost, and otherwise Discarded Fishing Gear.	Regulations and monitoring
X	National Aquatic Resources Research and Development Agency	NARA is a national research organisation, which is responsible for carrying out research on the aquatic resources in Sri Lanka. NARA is conducting several research studies on marine litter and microplastics.	Research
XI	Industrial Technology Institute	The Industrial Technology Institute (ITI) is a pioneer scientific research & development organisation in Sri Lanka, which comes under the purview of the Ministry of Technology. ITI offers many services including laboratory facilities.	Laboratory facilities

Table 4: Institutional involvement at international coordination level

Institute	International legal arm	Institutional role
Ministry of Environment	United Nations Framework Convention on Climate Change	Reporting and Coordination
Ministry of Environment	Basel Convention	
Ministry of Environment	Stockholm Convention	
Department of Wildlife Conservation	International Trade in Endangered Species (CITES)	
Ministry of Environment	Paris Agreement	
SDC	United Nations is committed to active Sustainable Development Goals	
MEPA	The International Convention for the Prevention of Pollution from Ships	

3.3. Legal Framework on marine pollution

Land-based sources of pollution are considered to be the major contributors to marine litter. In Sri Lanka, these land-based sources of pollution are managed through different legal arms. There are also some legal provisions directed to guide the reduction of coastal and ocean-based pollution in Sri Lanka through principles like 3R ('Reduce, Reuse. Recycle'). The following sections list the legal provisions linked to the reduction of land-based, coastal, and marine waste in Sri Lanka.

3.3.1. Policies and Strategies

Sri Lanka has approved several policies that have policy statements related to marine litter management. Policies can be:

- A. Specific policy directives for waste management (**Table 5**)
- B. Policy directives for environmental management (**Table 6**)

Table 5: Policies providing specific directives for waste management in Sri Lanka

Name of the policy	National Policy and Strategy for Cleaner Production	Year	2005
Number of policy statements	9	Number of strategies	12
Highlights	Statement -4.3: Apply lifecycle thinking to reduce/eliminate the overuse of raw materials and wastage and reduce/eliminate quantity and toxicity of emissions and discharged in process and service in order to reduce/eliminate air, water, and land pollution. Policy statement- 3.5 Promote changing of consumption patterns to more sustainable levels through implementation of CP concepts and approaches.		
Institution/s	The Ministry of Environment and Natural Resources		
Name of the policy	National Policy and Strategy on Cleaner Production for Health Sector	Year	2007
Number of policy statements	7	Number of strategies	10
Highlights	Policy statement -6.2 Healthcare institutions to establish and implement waste management systems prioritizing waste prevention strategies.		
Institution/s	The Ministry of Health, The Ministry of Environment		
Name of the policy	National Policy on Solid Waste Management	Year	2007
Number of policy statements	23	Number of strategies	No
Highlights	5.1: Solid waste will be managed in accordance with 3R principle with special emphasis on waste preventive approaches. 5.6: Hazardous Biomedical/ Health Care waste will be managed so as to prevent environmental contamination and minimize the risk to public and ecosystems.		

Institution/s	The Ministry of Environment and Natural Resources		
Name of the policy	National Policy and Strategy on Cleaner Production for the Tourism sector	Year	2008
Number of policy statements	8	Number of strategies	14
Highlights	<p>Strategies 7.5 Apply lifecycle management to reduce/eliminate the overuse of natural resources by adopting the ecologically sound practice.</p> <p>Statement 7.12: Established performance indicators and benchmarks to access and monitor the performance of the CP activities in the tourism sector.</p>		
Institution/s	Ministry of Tourism, Ministry of Environment and Natural Resources		
Name of the policy	National Policy and Strategy on Cleaner Production for Agriculture Sector	Year	2012
Number of policy statements	8	Number of strategies	14
Highlights	<p>Policy Statements: 6.5 Apply life cycle approach to reduce overuse/misuse of resources/ raw material and waste generation.</p> <p>Strategies: 7.2 Promote integrated water management practices</p>		
Institution/s	Ministry of Agriculture, Ministry of Environment		
Name of the policy	National Policy and Strategy on Cleaner Production for the Fisheries sector	Year	2008
Number of policy statements	11	Number of strategies	14

Highlights	<p>Strategies: 7.9: Prevent disposal of hazardous waste including waste oil and untreated effluent into aquatic environment by improving existing waste management systems and developing new systems.</p> <p>Strategies: 7.8: Develop/ introduce environmentally friendly and economically viable fish waste disposal systems.</p>		
Institution/s	Ministry of Fisheries and Aquatic Resources, Ministry of Environment and Natural Resources		
Name of the policy	National Waste Management Policy	Year	Draft
Number of policy statements	13	Number of strategies	0
Highlights	<p>The vision of the policy is ‘Managing waste for a healthy life for all’</p> <p>8.2.1.8.A: A comprehensive action plan shall be developed for marine-related waste including but without limiting to marine waste, ship-generated waste, and fishery harbour waste by MEPA, CEA, CCCRMD and, Ministry of Ports and Shipping in line with the International Maritime Organization (IMO) and other related conventions assigning ownership and responsibility of its implementation.</p> <p>8.2.1.8.B: Respective lead agencies shall monitor and record performance of marine waste management periodically and report annually to the Ministry of Environment, and the Ministry of Environment shall review overall performance and publish annually.</p>		
Institution/s	Ministry of Environment		
Name of the policy	National Policy on Sustainable Consumption & Production for Sri Lanka	Year	Draft
Number of policy statements	13	Number of strategies	N/A
Highlights	4.2.1. Apply Polluter Pay Principle for all waste streams		

	4.2.2 Establish Sustainable Consumption and Production (SCP) best practices for waste management in all sectors, especially industries, agriculture, tourism, and households.
	4.2.3. Strengthen the institutional mechanism for solid waste management in LAs
Institution/s	Ministry of Environment

Table 6: Policies providing specific directives for environmental management in Sri Lanka

Institution/s	Ministry of Environment		
Name of the policy	The National Environment Policy and Strategies in Sri Lanka	Year	2003
Number of policy statements	12	Number of strategies	No
Highlights	8. "Life cycle" and 'CP principles will be applied to improve the efficiency of natural resource use and to improve environmental quality.		
Institution/s	Ministry of Environment and Natural Resources		
Name of the policy	National Immunization Policy	Year	2014
Number of policy statements	7	Number of strategies	No
Highlights	1.9 All used vaccine vials, syringes, and other accumulated medical waste related to the immunization process shall be handled safely in compliance with the policy adopted on safe disposal of medical waste in accordance with the National Environmental policy of the country.		

Institution/s	Ministry of Health		
Name of the policy	National Medicinal Drug Policy for Sri Lanka	Year	2006
Number of policy statements	No	Number of strategies	No
Highlights	Financing options: The State should provide sufficient funding for procurement and supply of necessary medicines with priority for essential medicines, monitor appropriate use, and prevent waste		
Institution/s	Ministry of Health		
Name of the policy	National policy on Healthcare Quality and Safety	Year	2015
Number of policy statements	Key Result Area:7	Number of strategies	30 (sub-strategies)
Highlights	<p>The vision of the policy is 'Providing optimum quality and safe healthcare services to the people of Sri Lanka'.</p> <p>Global situation: Every quality improvement project should have an explicit goal of reduction in waste, unnecessary variation, and/or cost.</p>		

3.4. Acts/ Ordinances

Legal provisions to waste management have been vested with different government agencies through, acts and ordinances (Table 7).

Table 7: Acts and Ordinance for waste management

Name of the legal provision	Nuisance Ordinance 15	Year	1863
Description	The Ordinance gave power to the city government to inspect, regulate and control public nuisance, particularly inappropriate garbage disposal. Some key functions of the Ordinance are still in force, with powers being exercised by public health inspectors (PHI). Section 2(3) and 2(12) of the ordinances empowers LAs to prevent and prohibit acts of public nuisance and take legal actions against violators for such actions.		
Link to marine litter management	Indirect – PHI enforce this ordinance in coastal areas to manage waste disposal		
Authority in charge of supervision, regulation, and/or enforcement	Urban Council, Municipal Council, Pradeshiya Sabhas, and Police		
Name of the legal provision	The Urban Council Ordinance No. 61	Year	1939
Description	Legal provisions for Urban Councils to collect and dispose of urban waste. The ordinance and its subsequent amendments provide the mandate to implement the rules necessary for waste management, regulation, and to impose penalties. <i>Sections 118, 119, and 120 of this ordinance Act states that waste management is a responsibility of the Urban Councils</i>		
Link to marine litter management	Indirect - Coastal litter in beaches under Urban Council areas are handled by the provisions of this ordinance		
Authority in charge of supervision, regulation, and/or enforcement	Urban Council		
Name of the legal provision	Irrigation Ordinance No 48	Year	1946

Description	Under the Ordinance, regulations may be made for the prevention of entry of waste to water supplied from the irrigation projects (Part IV. Section 93).		
Link to marine litter management	Indirect - Irrigation effluents ultimately discharge in the ocean hence marine litter from irrigation projects can be regulated through this Ordinance.		
Authority in charge of supervision, regulation, and/or enforcement	Department of Irrigation		
Name of the legal provision	Municipal Councils Ordinance of No.29	Year	1947
Description	Municipal Councils Ordinance and its amendments provide the mandate to manage waste in areas falling under the jurisdiction of Municipal Councils. <i>Sections 129, 130 and 131 of the Act addresses the waste management responsibilities of Municipal Councils.</i>		
Link to marine litter management	Indirect - Coastal litter on beaches under Municipal Council areas is regulated by this ordinance.		
Authority in charge of supervision, regulation, and/or enforcement	Municipal Council		
Name of the legal provision	Pradeshiya Sabhas Act.15	Year	1987
Description	The act regulates the collection and disposal of village-level waste. <i>Section 93 and 94 of the Act specifies that the waste management is responsibility of Pradeshiya Sabhas.</i>		
Link to marine litter management	Indirect - Coastal litter on beaches under Pradeshiya saba areas is regulated by this Act		
Authority in charge of supervision, regulation, and/or enforcement	Pradeshiya Sabha		
Name of the legal provision	National Environmental Act No.47	Year	1980
Description	This act has given provisions to protect, manage and enhance the environment, regulate, maintain and control the quality of the environment and prevent/control pollution in Sri Lanka. This act established the Central Environmental Authority, defining its		

	powers and jurisdictions, and provides overall environmental protection. <i>Section 12 and 26 of the act addresses Waste management.</i>		
Link to marine litter management	Direct - This act enabled the establishment of CEA, that has then established regulations and laboratory facilities to ensure a correct waste disposal both at inlands and coastal areas.		
Authority in charge of supervision, regulation, and/or enforcement	Ministry of Environment and CEA		
Name of the legal provision	Coast Conservation and Coastal Resource Management Act No.57	Year	1981
Description	This Act regulates coastal resources and the development of activities taking place within the coastal zone; the management of human activities outside the coastal zone that have a direct impact on the coastal zone; the management of public access, open spaces and their access.		
Link to marine litter management	Direct		
Authority in charge of supervision, regulation, and/or enforcement	Coast Conservation and Coastal Resources Management Department		
Name of the legal provision	13 th Amendment of the 1987 constitution	Year	1987
Description	Sri Lanka has given legislative power for waste management to Provincial Councils through Provincial Councils Act No. 42 in 1987 and amended Act No. 56 of 1988.		
Link to marine litter management	Indirect – This act enabled the Provincial Council to manage the waste in coastal areas.		
Authority in charge of supervision, regulation, and/or enforcement	Provincial Councils		
Name of the legal provision	North-Western Province Environmental Statute No. 12	Year	1990

Description	The Provincial Environmental Authority of NWP to protect and manage the environment of the province was established from this statute. Initial Environment Examinations (IEE) and -Environment Impact Assessments (EIA) are conducted for the province under the provisions of this statute as well as approvals for waste disposal site establishments.		
Link to marine litter management	Indirect – Control and regulate waste in North-Western Province including the coastal zone.		
Authority in charge of supervision, regulation, and/or enforcement	North Western Provincial Environmental Authority (NWPEA)I,		
Name of the legal provision	Fisheries and Aquatic Resources Act 2	Year	1996
Description	Regulations for the prevention of the disposal of industrial and domestic waste in Sri Lanka waters, and the prevention of the discharge in Sri Lanka waters of material that can be detrimental to fish and aquatic resources. In addition to that, the Act invites to conduct educational and training programs to educate the fishers and increase awareness on pollution. Also, the Act introduces offences such as unauthorised discharging, dumping, depositing or releasing of any poisonous, noxious or harmful material or substance or wastewater to any inland waters as well as from aquaculture.		
Link to marine litter management	Indirect - Regulations for the prevention of the disposal of industrial and domestic waste in coastal areas.		
Authority in charge of supervision, regulation, and/or enforcement	The Ministry of Fisheries and Department of Fisheries and Aquatic Resources		
Name of the legal provision	Prevention of Mosquitoes Breeding Act No.11	Year	2007
Description	This act gives power for reducing conditions that are favourable to the breeding of mosquitoes, especially unmanaged garbage. <i>Section 2-Prohibit creating conditions favourable to the breeding of mosquitoes including haphazard dumping of waste and Section 4 provides provisions to impose punishments for non-compliance.</i>		
Link to marine litter management	Indirect - Reduction of favourable places for mosquito breeding places are linked to the management of waste disposal practices in coastal and land base areas.		

Authority in charge of supervision, regulation, and/or enforcement	Department of Health		
Name of the legal provision	Western Province Statute No. 09	Year	1999
Description	Western Province Waste Management Authority was established in 2004, in order to act upon their commitment on waste management under the statute No 09 of 1999. The statute on waste management was amended as Waste Management the Statute No. 01 of 2007 to further strengthen the legal status of waste management. This legal provision has given powers to control and regulate the waste in Western Province.		
Link to marine litter management	Direct – The Statute controls and regulates waste in Western Province including the coastal zone.		
Authority in charge of supervision, regulation, and/or enforcement	Western Province Waste Management Authority		
Name of the legal provision	National Thoroughfares Act No. 40	Year	2008
Description	Regulating the rubble and waste generated from road construction and their safe disposal. <i>Section 64 (a), (b), (c) and section 65 have specific provisions for waste</i>		
Link to marine litter management	Indirect – Regulate waste disposal on coastal areas during road constructions		
Authority in charge of supervision, regulation, and/or enforcement	Road Development Authority		
Name of the legal provision	Marine Pollution Prevention Act, No. 35	Year	2008
Description			
Link to marine litter management	Direct – Apex body with the provisions to manage marine litter. Provisions to prevent, reduce and control marine pollution in Sri Lankan waters from ship-based and shore-based sources, including the Coastal zone of Sri Lanka. One of the main functions of the Marine Environment Protection Authority (MEPA) as per the above act is to prepare schemes of work for the prevention, reduction,		

	and control of marine pollution. Further, as per the section 21 of Marine Pollution Prevention Act, section 21 waste management, MEPA is responsible for the provision of waste reception facilities to ship-generated waste and MEPA has provided waste reception facilities to the ships through the service provided. Accordingly, MEPA has established waste reception facilities to ship-generated waste in all commercial ports with the support of registered service provided in line with MARPOL Convention requirements.		
Authority in charge of supervision, regulation, and/or enforcement	Marine Environment Protection Authority		
Name of the legal provision	Fauna and Flora Protection Act No. 22 (amendment)	Year	2009
Description	Section 6-3 (m) specifies regulations to manage the pollution of water on any land, or in-stream, river, or watercourse flowing through any National Reserve and activities which may pollute waters or cause an adverse impact on the existence of the fauna and flora therein or the ecosystem.		
Link to marine litter management	Indirect – Pollution in the marine protected areas under the jurisdiction of Department of Wildlife Conservation is prohibited under this act		
Authority in charge of supervision, regulation, and/or enforcement	Department of Wildlife Conservation		
Name of the legal provision	Sustainable Development Act No.19	Year	2017
Description	This act intends to design, develop and implement a National Policy and Strategy on Sustainable Development and to facilitate all agencies responsible and follow up and monitor the progress towards sustainable development goals.		
Link to marine litter management	Direct and Indirect – The Sustainable Development Goals such as: 2, 6, 8, 9, 12 14 are directly or indirectly contributed to the management of marine litter.		
Authority in charge of supervision, regulation and/or enforcement	SDC		

3.5. Regulations

The policies and acts provide the authority to formulate and implement rules and regulations. Several regulations have been introduced to manage solid waste in Sri Lanka. CCCRMD and MEPA are the main central government regulatory bodies responsible for conserving the maritime zone and the coastal zone of Sri Lanka. These agencies are directly involved in the management and pollution abatement of the country's marine and coastal zone. Several regulations have been gazetted accordingly (Table 8).



Cefas



Commonwealth
Litter Programme



Table 8: Regulations for waste management

Title of the regulation	Environment Impact Assessments Process	Year	1993/1995
Relevant Policy/Law/ Ordinance	National Environmental Act, No. 47 of 1980	Regulations under Section	Section 23 Y
Authority	CEA	Gazette number	772/22; 859/14
Description	Regulations specifying EIA requirements for major development projects in the coastal zone (except fishing). The types of projects which require EIA have been prescribed in the Gazette. Each EIA project proponent must submit a waste management plan as a section of the EIA document.		
Title of the regulation	Sale, use, or manufacture of twenty (20) microns or below in thickness polythene	Year	2006
Relevant Policy/Law/ Ordinance	National Environmental Act, No. 47 of 1980	Regulations under Section	Order under Section 23 W
Authority	CEA	Gazette number	1466/5
Description	The regulation gives the general rules for solid waste management, prohibits waste dumping by the national highways and regulates the collection and transportation of waste by LAs.		
Title of the regulation	National Environment (Protection and Quality)	Year	2008
Relevant Policy/Law/ Ordinance	National Environmental Act, No. 47 of 1980	Regulations under Section	Section 32 read with Section 23A and 23 B
Authority	CEA	Gazette number	1534/18
Description	It regulates the environment protection and quality regulation of Environmental Protection License for Emission or Disposal of Waste and License (the regulations for the procedure for issuing an environment Protection License) for the Management of Waste (hazardous waste).		

Title of the regulation	Waste dumping at the national highway, collection, and transportation of waste by Local Authorities	Year	2009
Relevant Policy/Law/ Ordinance	National Environmental Act, No. 47 of 1980	Regulations under Section	32
Authority	CEA	Gazette number	No. 1627/19
Description	The regulation has given the general rules for solid waste management and prohibition of waste dumping at national highways and collection and transportation of waste by Local Authorities.		
Title of the regulation	Marine Pollution Prevention Act	Year	2011
Relevant Policy/Law/ Ordinance	Marine Pollution Prevention Act, No. 35 of 2008	Regulations under Section	1709/15
Authority	MEPA	Gazette number	Section 51 read with section 40
Description	MEPA specifies the needs for oil management in the sea. Accordingly, any owner or operator of an offshore installation shall take steps to maintain an Oil Record Book specifying details on discharge overboard of polluted oily water or other disposals that has accumulated within spaces of machinery or other parts of the installation.		
Title of the regulation	Bunkering regulations	Year	2012
Relevant Policy/Law/ Ordinance	Marine Pollution Prevention Act, No. 35 of 2008	Regulations under Section	Section 51 read with Sections 7 and 21
Authority	MEPA	Gazette number	1741/19

Description	Bunkering regulations have been introduced for all vessels engaged in the bunker facility. The vessels are required to use the streamlined waste reception facility provided by the Authorities for their shipboard waste disposal		
Title of the regulation	Issuance of permits for dumping at sea	Year	2013
Relevant Policy/Law/ Ordinance	Marine Pollution Prevention Act, No. 35 of 2008	Regulations under Section	Section 51 read with Section 27 and 28
Authority	MEPA	Gazette number	1816/37 and 1829/38
Description	wastewater discharge standards and issuance of sea dumping permits.		
Title of the regulation	Waste Reception Facilities	Year	2016
Relevant Policy/Law/ Ordinance	Marine Pollution Prevention Act, No. 35 of 2008	Regulations under Section	Section 51 read with Section 6(e) and Section 21
Authority	MEPA	Gazette number	1996/27
Description	This regulation has provisions to prevent marine pollution in any port, harbour, terminal, repair yard of ships, dry dock, and anchorage or offshore marine facilities or any other marine-related facility in Sri Lanka; and any service provider registered with the Authority to provide waste reception facilities. The Authority or any service provider shall provide adequate and effective waste reception facilities within or outside any port, harbour, terminal, repair yard of ships, dry dock, anchorage or offshore or other marine-related facility in Sri Lanka to enable any ship using such port, harbour, terminal, repair yard of ships, dry dock, anchorage or offshore or any other marine-related facility or traversing Sri Lanka waters or any other maritime zone, its fore-shore and the coastal zone of Sri Lanka to discharge any waste without causing undue delay to such ship.		
Title of the regulation	Polythene & Plastic Management	Year	2017

Relevant Policy/Law/ Ordinance	National Environmental Act, No. 47 of 1980	Regulations under Section	Section 23W
Authority	CEA	Gazette number	2034/33 to 38
Description	<p>A series of regulations (2034/33-38) has been introduced to ban polythene products (use, manufacturing, and sale) in Sri Lanka in 2017. Those activities are</p> <ul style="list-style-type: none"> • Sale use or manufacture of polythene or any polythene product of twenty (20) microns or below in thickness. • Permitted use materials for the purpose of laminating; Polyethylene Terephthalate (PET), Polypropylene films, Nylon, cast polypropylene (CPP), Polyvinyl chloride (PVC), Polyethylene Terephthalate Glycol (PETG) and use for medical or pharmaceutical purposes in the absence of any other suitable alternative. • Sale or use or manufacture of food wrappers from polythene as a raw material. • Sale or use or manufacture of any bag of high-density polyethylene as a raw material. • Prohibition of open burning of refuse and other combustible matters inclusive of plastics. • Prohibit the use of all forms of polyethylene, polypropylene, polyethylene products, or polypropylene products as decoration in political, social, religious, national, cultural, or any other event or occasion. • Sale or use or manufacture of food containers, plates, cups, and spoons from expanded polystyrene for in country use. 		
Title of the regulation	Plastic Material Identification Standards	Year	2021
Relevant Policy/Law/Ordinance	National Environmental Act, No. 47 of 1980	Regulations under Section	2211/50
Authority	CEA	Gazette number	N/A
Description	Any manufactured plastic item shall be marked clearly in accordance with the Plastic Material Identification Standards specified under this gazette		
Title of the regulation	Prohibiting material for packing agrochemicals	Year	2021

Relevant Policy/Law/ Ordinance	National Environmental Act, No. 47 of 1980	Regulations under Section	Section 23 W (1)(a)
Authority	CEA	Gazette number	2211/51
Description	The use of polyethylene terephthalate (PET) or polyvinyl chloride (PVC) material is prohibited for packing agrochemicals used for any process, trade, or industry and for producing any specified plastic item for any process, trade or industry.		

3.6. Overview of relevant international commitments

The solid waste generated on the land has a positive relationship with marine litter. In addition to that, litter accumulation within the Sri Lankan Exclusive Economic Zone (EEZ) and beyond are aggravated by transboundary litter loads. As per the literature and statistics, South Asian countries contribute a significant quantum of marine debris. Sri Lanka is following commitments made for the international community (**Table 9**).MARPOL is among these commitments, and regulates several types of waste (**Table 10**)

Table 9: International commitments relate to waste management

Name of convention/ treaty/ agreement/MoU/	Basel Convention
Date of ratification	28/08/1992
Entry into force	26/11/1992
Key actions	Control of Transboundary Movements of Hazardous Wastes and their Disposal is the most comprehensive global environmental agreement on hazardous and other wastes. The Convention aims to protect human health and the environment against the adverse effects resulting from the generation, management, transboundary movements, and disposal of hazardous and other wastes. In addition to conditions on the import and export of the above wastes, there are stringent requirements for notice, consent and tracking for movement of wastes across national boundaries.
Focal Point	The Ministry of Environment
Name of convention/ treaty/ agreement/MoU/	International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties
Date of ratification	11/04/1983
Entry into force	06/05/1975
Key actions	International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties 1969 (INTERVENTION 1969) is an international maritime convention affirming the right of a coastal State to "take such measures on the high seas as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution or threat of pollution of the sea by oil, following upon a maritime casualty or acts related to such a casualty.
Focal Point	

Name of convention/ treaty/ agreement/MoU/	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA)
Date of ratification	
Entry into force	
Key actions	The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) was created as a unique intergovernmental mechanism to counter the issue of land-based pollution. The parties set as their common goal sustained and effective action to deal with all land-based impacts upon the marine environment.
Focal Point	
Name of convention/ treaty/ agreement/MoU/	United Nations Convention on the Law of the Sea (UNCLOS)
Date of ratification	19/07/1994
Entry into force	16/11/1994
Key actions	Major commitments include the UNCLOS as: protect the economic, environmental, and national security concerns of coastal states, strengthen the state sovereignty over the enforcement of environmental regulations in the EEZ. In addition to that, Sri Lanka was committed to protect the marine environment, promote the maintenance of international peace and security, protect the freedom of navigation on the high seas as well as the right of innocent passage, including non-wartime activities of military ships under this convention.
Focal Point	MEPA
Name of convention/ treaty/ agreement/MoU/	Paris Agreement
Date of ratification	21/09/2016
Entry into force	04/11/2016
Key actions	The Paris Agreement (Article 4, paragraph 2) requires each Party to prepare, communicate and maintain successive nationally determined contributions (NDCs) that it intends to achieve. The NDCs Sri Lanka, has been submitted in 2016. One dedicated section for waste management under climate change Mitigation.
Focal Point	The Ministry of Environment

Name of convention/ treaty/ agreement/MoU/	International Trade in Endangered Species (CITES)
Date of ratification	04/05/1979
Entry into force	02/08/1979
Key actions	Sri Lanka aims to protect the endangered species and habitats trade and prevent habitat destruction from pollution, as per the CITES requirement.
Focal Point	The Department of Wildlife Conservation
Name of convention/ treaty/ agreement/MoU/	United Nations is committed to active Sustainable Development Goals
Date of ratification	
Entry into force	
Key actions	Sustainable Development goals to be achieved by 2030, which was endorsed at the UN General Assembly sessions in New York in September 2015. Therefore, Sri Lanka is among the first countries to produce such a comprehensive strategic plan for national Sustainable Development. The Sustainable Development Goals such as: 2, 6, 8, 9, 12 14 are directly or indirectly contributed to the management of marine litter.
Focal Point	SDC
Name of convention/ treaty/ agreement/MoU/	South Asia Co-operative Environment Programme (SACEP)
Date of ratification	
Entry into force	
Key actions	SACEP is the implementing agency for this project. SACEP is an intergovernmental organisation established by Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka in 1982 to promote and support the protection, management, and enhancement of the environment in the region. Moreover, recognizing the importance of the Regional Marine Litter Action Plan in the region, SACEP-SAS became a regional node under UNEP-GPML to host for the South Asian Seas region. This opportunity will facilitate mitigating the marine plastic issues in a sustainable manner.
Focal Point	

Name of convention/ treaty/ agreement/MoU/	South Asian Seas Programme (SASP)
Date of ratification	
Entry into force	
Key actions	In 1995, the South Asian Seas Programme (SASP) was initiated to protect and manage the shared marine waters and associated coastal ecosystems of five maritime SACEP countries. One major aim of the project is to implement the activities on the management of environmental effects of land-based activities. Regional Marine Litter Action Plan in the region, SACEP-SAS became a regional node under UNEP-GPML to host for the South Asian Seas region. This opportunity will facilitate to mitigate the marine plastic issues in a sustainable manner.
Focal Point	
Name of convention/ treaty/ agreement/MoU/	South Asian Association for Regional Cooperation (SAARC)
Date of ratification	
Entry into force	
Key actions	South Asian Association for Regional Cooperation (SAARC) initiated in 1985 to promote economic and social progress, cultural development within the South Asia region, and also for friendship and cooperation with other developing countries SAARC on the reduction of plastic use and public awareness-raising on marine plastic pollution.
Focal Point	
Name of convention/ treaty/ agreement/MoU/	International Convention for the Prevention of Pollution from Ships (MARPOL)
Date of ratification	November 1973
Entry into force	
Key actions	The Convention was adopted at the IMO, with additional protocols and amendments incorporated over time. It includes regulations aimed at preventing and minimising both accidental and routine pollution from ships and, at the time of writing this review, it includes six technical annexes. MARPOL outlines specific obligations with regard to the provision of waste reception facilities. The onus for meeting these obligations is on government authorities rather than

	<p>on ships or private companies. These obligations are designed to ensure that ships are able to legally dispose of their waste, thereby preventing illegal discharge to the marine environment and/or inappropriate land disposal. Under the provisions of the Convention, the international community of maritime states is mandated to put in place measures to ensure ships do not engage in the unacceptable practice of discharging their waste and cargo residues at sea. MARPOL prescribes that there must be a properly planned, easy-to-use, and cost-effective system to manage incoming waste streams at the reception facilities of all operational ports. Specific regulations of relevance to the issues of PRFs are outlined in Table 10.</p>
Focal Point	Marine Environmental Protection Authority

Table 10: MARPOL regulations of relevance to waste reception facilities

<p>Annex I Regulations for the Prevention of Pollution by Oil (entered into force 2 October 1983)</p>	<p>This Annex covers the prevention of pollution by oil from operational measures as well as from accidental discharges. Of relevance to this report is Regulation 38.1, which requires the Government of each Party to provide facilities for the reception of oily residues and mixtures at oil-loading terminals, repair ports, and in other ports in which ships have oily residues to discharge. Such facilities must be adequate to meet the needs of the ships using them without causing undue delay. Regulations 38.2 and 38.3 expand on this basic requirement with reference to sludge tanks, oily bilge waters, and certain other residues which are not permitted to be discharged in route.</p>
<p>Annex II Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk (entered into force 6 April 1987)</p>	<p>Annex II details the discharge criteria and measures for the control of pollution by noxious liquid substances (NLS) carried in bulk. Regulation 18.1 requires the Government of each Party to ensure that ports and terminals involved in bulk NLS cargo handling or NLS tanker repairs have adequate facilities for the reception of residues and mixtures containing noxious liquid substances.</p>
<p>Annex III Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form (entered into force 1 July 1992)</p>	<p>This Annex contains general requirements for the issuing of detailed standards on packing, marking, labelling, documentation, stowage, quantity limitations, exceptions, and notifications on</p>

	substances identified as marine pollutants in the International Maritime Dangerous Goods Code.
Annex IV Prevention of Pollution by Sewage from Ships (entered into force 27 September 2003)	Annex IV focuses on requirements to control pollution of the sea by sewage. It prohibits the discharge of sewage into the sea, except when the ship has an approved sewage treatment plant or when the ship is discharging and disinfected sewage using an approved system at an approved distance. Regulation 12.1 requires the Government of each Party to ensure the adequate provision of facilities at ports and terminals for the reception of sewage, without causing delay to ships.
Annex V Prevention of Pollution by Garbage from Ships (entered into force 31 December 1988)	This Annex looks at different types of garbage and specifies the distances from land and the manner in which they may be disposed of. Notably, this Annex incorporates a complete ban on the disposal of all forms of plastics into the sea. MARPOL Annex V obliges governments to ensure the provision of adequate facilities at ports and terminals for the reception of garbage without causing undue delay to ships, and according to the needs of the ships using them.
Annex VI Prevention of Air Pollution from Ships (entered into force 19 May 2005)	Annex VI sets limits on sulphur oxide and nitrogen oxide emissions from ship exhausts and prohibits deliberate emissions of ozone-depleting substances. Regulation 17.1 requires the Government of each Party to ensure the provision of facilities adequate to meet the needs of ships using its repair ports for the reception of ozone-depleting substances and equipment containing such substances. It further requires that reception facilities are provided for exhaust gas cleaning residues in enclosed ports, harbours, and estuaries.

3.7. Projects and Programmes

A number of waste management projects and programs are implemented in Sri Lanka by the Central Government and other donor funding. A few significant projects that involve the Central Government are highlighted below. Non-government agencies are also conducting programs and projects regarding waste management and reduction. These initiatives include periodical beach clean-ups, awareness, and training (**Table 11**).

Table 11: Projects and Programmes for waste management

Project/Programme Name	Pilisaru-National Solid Waste Management Program
Implemented by	CEA
Description	CEA initiated the “Pilisaru” National Solid Waste Management Program in 2008 to support the local governments that implement solid waste management activities. While supporting local governments, Ministry of Environment and Central Environmental Authority also prioritised appropriate and sustainable Solid Waste Management (SWM), “Ten-year Horizon Development Framework (2006-2016)” and identifies the importance of the promotion of the 3Rs and the establishment of an environmentally friendly final disposal sites for sustainable SWM systems. In 2009, they also formulated the "National Action Plan for the Haritha Lanka Program (2009 ~ 2016)". Pilisaru programme was therefore strengthened by concurrent activities.
Project/Programme Name	National Cleaner Production Centre
Implemented by	Minister of Industrial Development
Description	The concept of CP was introduced to Sri Lanka way back in 1993 through a UNDP/UNIDO programme with CEA. The NCPC has developed some national policies for resource use efficiency in Sri Lanka. It’s mainly focused on the implementation of waste management practices in various sectors throughout the life cycle. The project mainly enhances productivity and reduces the waste generation, especially solid waste.
Project/Programme Name	The Pavithra Ganga (Clean River)
Implemented by	Ministry Environment
Description	The Pavithra Ganga (Clean River) Program was initiated by the Ministry of Environment in 1998 as a pilot project in Kelani River Basin with a broad objective of reducing the human impact on the quality of the river and the

	<p>surrounding environment by proactive participation of all the parties contributing to the degradation of the river. Some of the major activities of the projects are:</p> <ul style="list-style-type: none"> • Identification and mapping of environmental pollution sources and land-use patterns of Kelani river basin using GIS Technology. • Consultations on reducing pollution, which were done in 10 Local Authorities via 8 workshops with Local Government, Central Government officials and representatives of the civil society organisations.
Project/Programme Name	SWITCH-Asia Sustainable Consumption and Production
Implemented by	The Ministry of Environment
Description	The SWITCH-Asia Sustainable Consumption and Production National Policy Support project is a joint programme carried out by the European Union and the Governments of several Asian countries. In Sri Lanka, for four years (2015-2019). The programme enhanced capacity, skills and knowledge; raised awareness in policymakers, stakeholders, and the public about the main principles of SCP, the available policies, tools, instruments, and mechanism. SWITCH-Asia mainly focuses on the enhancement of the knowledge of SCP and ultimately on the proper management of the waste.
Project/Programme Name	Mahinda Chintana: Vision for a New Sri Lanka
Implemented by	The Ministry of Finance
Description	A Ten-Year Horizon Development Framework, which was implemented by the Ministry of Finance and has the ten-Year Planning Developmental Framework 2006-2016, aimed at raising the GDP growth rate in excess of 8%. This had a strategy for preventing coastal pollution (water pollution and solid waste disposal).
Project/Programme Name	The Haritha Lanka Programme (2009-2016)

Implemented by	The Ministry of Environment
Description	The Programme was developed through a comprehensive stakeholder engagement process by the Ministry of Environment. The overall goal of the project was to instil green concepts across all sectors and to facilitate development and implementation of actions related to greening the nation and economy. Actions to address the key areas are embodied in the strategies and proposed actions set out under the ten mission statements of the Haritha Lanka Programme. Action number six was dedicated to waste “Doing away with the Dumps”. The programme included short-, medium and long-term targets spanning the period 2009-2016 and performance indicators.
Project/Programme Name	National Post Consumer Plastic Management Program
Implemented by	CEA
Description	The Sri Lankan government has started to encourage plastic waste recycling in an effort to prevent the material from piling up along the roadside and causing environmental pollution. The Central Environmental Authority (CEA) recently launched a program called the ‘national post-consumer plastic waste management. It is funded by a tax on plastic importers.
Project/Programme Name	Coastal Zone Management Plan (CZMP)
Implemented by	CCCRMD
Description	The first version of the CZMP, the first management framework, was adopted by the CCCRMD in 1990. With the rapid development, the CZMP has been revised and updated in 1997 and 2004. Furthermore, the CZMP has been updated in 2018 to focus on five major areas: shoreline management, coastal pollution control, management of coastal habitats, special management areas, and regulatory mechanisms.

4. DISCUSSION, CONCLUSIONS AND RECCOMENDATIONS

This report focused on the analysis of the legislative framework regulating the waste management system in Sri Lanka, listing the relevant laws and the agencies that have a mandate related to the control and management of marine pollution and its sources. This report comes at a time when globally Sri Lanka is ranked fifth among the top 20 countries contributing the most to the release of waste into the world's ocean (Jambeck *et al.*, 2015). Despite the global ranking, a range of organisations and regulations are in place to handle waste at policy, regulatory and monitory level. Although legal and institutional frameworks are well in place, manpower, technical capacity, and skill required for marine litter management are absent. The main focus seems to be the management of waste on land, while the legislation is not as clear for marine litter management. There seems to be a vacuum of competence, accountability and dedicated staff to work with litter in water. In summary, the management of land based litter down to the shoreline is addressed, but litter present in the sea, remains a challenge.

Despite the lack of clarity, there are several regulations that concerns waste management. In fact, a combination of direct and indirect policies, legislations, regulations, and programmes are in place to handle both land-based and sea-based marine litter management. Several agencies work towards the implementation and monitoring of actions and the individual mandates of these agencies and organisations are considered to be sufficiently clear. However, the management of the waste remains a challenge on land (in particular along the coastline) and in the marine environment (especially ALDFG). The review done in this report seems to suggest that the problem of the waste management in Sri Lanka is generated by gaps along the decisional chain. In particular, this study shows how there is not a unique apex body with a mandate to decide, fund, coordinate and monitor an overall plan to regulate waste management across the country. This absence is obvious at both national and local level, with individual administrations left in charge of dealing with the waste produced in their territories. The absence of such apex body has led to inadequate communication among parties, duplication of effort, and has complicated the possibility to implement strategic initiatives like the creation of an overall awareness-raising campaign, the delivery of a training programme to increase capacity, the improvement of data management and record-keeping. It is not clear who should be responsible, accountable and consulted in order to start any of these actions. Recent events such as the incident to the vessel X-Press Pearl in May 2021 (MEPA, 2021) and the subsequent spillage of nurdles show how the presence of an apex body would also be very relevant to respond to incidents and limit their impact.

Some recommendations can be suggested based on in the findings of this report. First of all, it is recommended to develop waste management plans with accountability, responsibilities, and finances embedded for all types of ports, and monitor the progress against the developed plan. Regular updates on the roles and progress achieved on waste management by each agency with a relevant mandate should also be considered. The identification of an apex body that can monitor the overall waste management of Sri Lanka would help this process. This apex body would be useful to reconcile and coordinate the responsibilities that are currently scattered among many agencies.

The regulation of the inflow of land-based litter to coastline should be given priority and options should focus on identifying an apex body for sharing recommendations and create a clearer waste management hierarchy. This would support more accountability and would support the implementations of systems based on polluter pays principle and good practices. Sri Lanka should engage with neighbour countries through already existing engagements at regional level (i.e., same



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ocean basin) to tackle transboundary waste. Unless it is done, the marine litter will be a major threat to the social, economic, and environmental well-being of Sri Lanka.



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