

**Environmental and Social Considerations in Detailed Planning Survey
(Technical Cooperation)**

June 2018

1. Full title of the Project

The Project for formulation of Western Province Solid Waste Management Master Plan

2. Type of the Project

Master Plan

3. Categorization and Its Reason

The Study is classified as a “Category B” because of the following reasons:

The Project is a planning study and it does not include any facility localization and/or construction works that are common in projects of feasibility study and/or detailed design. Therefore, the Project is not likely to have significant adverse impact on the environment under the JICA Guidelines for Environmental and Social Considerations (April 2010) in terms of its sectors, characteristics and areas.

The Project formulates Western Province Solid Waste Management Master Plan. In order to acquire knowledge and experience contribute to the Master Plan formulation, the Project also carries out pilot projects and activities for improving waste management as stated in the output 3 and 4 of the Project Design Matrix(PDM). Since the pilot projects and activities will not include any construction work, they are out of scope of this screening. Thus, when pilot projects and/ or activities and their pilot areas are specified at the project implementation stage, necessary Social and Environmental Considerations will be implemented. In addition, NO pilot projects and/or activities classified as “Category A” under the JICA Guidelines will be conducted by the Project.

4. Agency or Institution Responsible for the Implementation of the Project

Implementing Agency:

- National Solid Waste Management Support Center (NSWMSC), Ministry of Provincial Councils, Local Government and Sports
- Waste Management Authority (WMA), Western Provincial Council
- Other relevant organizations.

5. Outline of the Project

(1) Overall Goals which will be attained after the Project Completion

Appropriate solid waste management practices in accordance with Western Province Solid Waste Management Master Plan (MP) are undertaken in Western Province.

(2) Outputs

- 1) Roles and responsibilities of organizations relevant to solid waste management in Western Province are clarified and institutional arrangements for the formulation of the MP are established.

- 2) Current situations and challenges of solid waste management in Western Province are clarified.
 - 3) Knowledge and experience which contribute to MP formulation are acquired through the implementation of pilot projects on appropriate waste management and 3Rs. (Target areas: Colombo Municipality and other Local Authorities (LAs))
 - 4) Knowledge and experience which contribute to MP formulation are acquired through pilot activities for improving planning/ operation of waste management facilities.
 - 5) Collaboration and coordination among relevant organizations in Western Province for the formulation and implementation of the MP, its sub-plans and other related plans (e.g. LA action plans, plans on waste management facilities) are strengthened.
- (3) Activities
- 1.1 Roles and responsibilities of relevant organizations relevant to solid waste management in Western Province are clarified by examining policies and legal documents (e.g. national laws, ordinances).
 - 1.2 A Working Group for MP formulation is established.
 - 1.3 Terms of Reference (TOR) of the Working Group for MP formulation are clarified.
 - 1.4 Regular meetings and special meetings or sub-group meetings, where necessary, are held.
 - 1.5 Draft Master Plan based on the knowledge gained through activities for Output 2-5 is prepared through discussions by the Working Group.
 - 1.6 The process and outputs of activities of the Working Group are shared with relevant organizations (including those which authorize the Master Plan) both at the Provincial and Central levels by holding workshops or, meetings.
 - 1.7 An inter-organizational coordination body such as Provincial Solid Waste Management Committee which takes over the work of the Working Group is proposed.
- 2.1 The Working Group for MP formulation decides a. types of waste, b. target year, c. areas and population.
 - 2.2 Organizations in Western Province relevant to solid waste management are investigated and data on solid waste management is collected.
 - 2.3 A database is created using existing data on Western Province's solid waste management.
 - 2.4 Based on the data, current situations and challenges regarding solid waste management are clarified and reported.
- 3.1 Trainings on appropriate waste management and 3Rs for LAs and other relevant organizations are conducted.
 - 3.2 Target LAs for pilot projects are selected.
 - 3.3 Capacity Assessment (pretest) for WMA and target LAs is conducted.
 - 3.4 The pilot projects on appropriate waste management and 3Rs are planned at the target LAs (The pilot projects may include a study to collect good practices of various LAs).
 - 3.5 3.4 is implemented.
 - 3.6 Capacity Assessment (posttest) for WMA and target LAs is conducted.
 - 3.7 3.5 is monitored and its results and knowledge are reflected in the draft MP.
- 4.1 Complaints/ requests made by residents, NGOs and other stakeholders with regard to waste management are studied to identify important issues.
 - 4.2 Target waste management facilities for pilot activities are selected.

- 4.3 Trainings on planning/ operation of waste management facilities are conducted for CMC and other relevant organizations.
 - 4.4 Capacity Assessment (pretest) for CMC and other relevant organizations is conducted.
 - 4.5 Pilot activities for seeking optimal technical/ social interventions for improved planning and operation of waste management facilities are planned at the target waste management facilities.
 - 4.6 4.5 is implemented.
 - 4.7 Capacity Assessment (posttest) for CMC and other relevant organizations is conducted.
 - 4.8 4.6 is monitored and its results and knowledge are reflected in the draft MP.
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- 5.1 Meetings for the explanation of the MP are organized for LAs in Western Province and other relevant organizations (including central government organizations) are held.
 - 5.2 The staff of WMA and other relevant organizations enhance their knowledge and skills for supporting LAs and other organizations in their formulation and implementation of the MP, its sub-plans and other related plans (e.g. LA action plans, plans on waste management facilities) through trainings and OJT.
 - 5.3 Support and guidance for the formulation of sub-plans and other related plans (e.g. LA action plans, plans on waste management facilities) in line with MP are given to LAs and other relevant organizations.
 - 5.4 A system to monitor the implementation of sub-plans and other related plans (e.g. LA action plans, plans on waste management facilities) in line with MP is established and documented.
 - 5.5 Budget plans for the implementation of the MP and a guidance for budget plan formulation to implement LAs' action plans are prepared.

6. Description of the Project Site

The project site is Western Province in Sri Lanka (Figure 1), which consists of three districts; Gampaha, Colombo, and Kalutara from the North. Western Province includes 48 administrative bodies; 6 municipal councils, 13 urban councils, and 29 Pradeshiya Sabhas.

(1) Natural Environment

1) Physical Features¹

Sri Lanka is an island located at the south east of the Indian sub-continent, between 5° 54' and 9° 52' North and 79° 39' and 81° 53' East. Its land area is 65,610 km². The island consists of a south central mountainous region with an elevation of 2,500 m above sea level, surrounded by broad lowland plains at an elevation of 0 - 75 m.

Sri Lanka is in the equatorial and tropical zone, and it is influenced by the monsoons. The country is generally divided into three climatic regions the wet zone, dry zone and intermediate zone. Its south-west area is in moist climate (wet zone), the area from north-east to south-east is in dry climate (dry zone), and the middle area (hills and mountains) is in the intermediate climate (intermediate zone). Western Province belongs to the wet zone except for a small area close to the Northern boundary. The project site is in the wet zone where receives a relatively high mean annual rainfall of over 2,500 mm without pronounced dry periods.

¹ The information of this section is from Biodiversity Conservation in Sri Lanka – A Framework for Action (Ministry of Forestry and Environment, 1999), Climate Change Secretariat, Ministry of Environment, Sri Lanka web site: http://www.climatechange.lk/ccs_index.html.



Source: Central Intelligence Agency (USA, 2001)

Figure 1: Western province in Sri Lanka

2) Biodiversity

(a) General

Sri Lanka’s high biodiversity can be derived from a wide variety of climatic, topographic and soil conditions that has resulted in a diverse array of aquatic and terrestrial habitats and also from its zoogeographic features – history of the continental drift and the eventual separation from the Indian continent².

Conservation International, international nature conservation NGO, identifies areas with high biodiversity and needs of urgent conservation actions as “Biodiversity Hot Spots”. Sri Lanka belongs to one of the Hot Spots, “Western Ghats & Sri Lanka”³.

(b) Endangered Species

The world’s most comprehensive inventory of the global conservation status of biological species is compiled by the International Union for Conservation of Nature (IUCN). The IUCN Red List of Threatened Species is regularly revised. As of February 2011, 274 species of animal and 285 species of plant were categorized as Critically Endangered (CR), Endangered (EN) or Vulnerable (VU) in Sri Lanka.

Table 1: Number of Species in Each IUCN’s Category in Sri Lanka⁴

	EX	EW	CR	EN	VU	Total
Fauna	21	0	62	90	122	295
Flora	1	0	78	74	133	286

² The National Red List 2012 of Sri Lanka – Conservation Status of the Fauna and Flora (Ministry of Environment, Sri Lanka, 2012).

³ Conservation International web site.

http://www.conservation.org/where/priority_areas/hotspots/asia-pacific/Western-Ghats-and-Sri-Lanka/Pages/default.aspx

⁴ IUCN. Red List version 2011.2, Summary Statistics, <http://www.iucnredlist.org/about/summary-statistics> (Accessed on 26 April 2012).

Notes: EX: extinct; EW: extinct in the wild.

According to research conducted by the IUCN, districts in the lowland wet zone (i.e. Galle, Matara, Ratnapura, Kalutara and Kegalle) and the central highlands (i.e. Kandy, Matale, Nuwara-Eliya and Badulla) harbor a larger number of threatened taxa than other areas in the country. Although this geographical distribution of threatened species should be taken into consideration in the site selection for activities that could affect the environment, it is important to note that these figures are uncertain, particularly those of the Northern Province (i.e. Jaffna, Kilinochchi, Mullaitivu and Vavuniya) and the Eastern Province (i.e. Ampara, Batticaloa and Trincomalee) due to insufficient distribution data (IUCN 2007).

Table 2: Distribution of Threatened Species⁵

District	Number of threatened species							
	Butterfly	FW Fish	Amphibian	Reptile	Bird	Mammal	Flora	Total
Ampara	0	3	1	8	5	1	15	33
Anuradhapura	1	2	0	8	3	12	68	94
Badulla	7	5	9	9	20	24	90	164
Batticaloa	0	0	0	1	0	1	9	11
Colombo (WP)	3	10	2	3	5	8	22	53
Galle	6	16	14	14	18	14	187	269
Gampaha (WP)	1	9	2	4	3	8	10	37
Hambantona	5	2	0	10	14	12	32	75
Jaffna	0	1	0	3	2	2	7	15
Kalutara (WP)	14	16	2	10	16	15	126	199
Kandy	10	5	7	21	27	30	310	410
Kegalle	3	12	5	5	20	9	98	152
Kurunegala	3	4	2	3	3	9	44	68
Mannar	4	3	0	1	1	1	5	15
Matale	3	3	9	11	11	23	71	131
Matara	3	8	4	7	11	7	101	141
Monaragala	5	3	2	9	11	10	56	96
Mullaitivu	0	3	0	2	0	3	0	8
Nuwara Eliya	5	0	16	11	22	30	150	234
Polonnaruwa	0	5	0	4	4	2	26	41
Puttalam	8	4	0	4	1	6	21	44
Ratnapura	38	14	23	22	30	17	264	408
Trincomalee	1	3	0	0	2	6	10	22
Vavuniya	0	5	0	0	1	3	1	10

Note: FW: Freshwater, WP: Western Province

3) Conservation Status of the Biodiversity

(a) Protected Areas and Conservation of Forests

Department of Wildlife Conservation, Sri Lanka, manages the total area of 938,771.91 ha as protected areas fall into eight types of National Reserve such as Strict Natural Reserve, and National Parks. Forest Department manages the total area of 1,642,209 ha falls into five types of categories such as National Heritage and Wilderness Areas and Conservation Forests to conserve important ecosystems (Table 3). Regarding the conservation of the remaining forests, logging ban in natural forests was imposed in 1990, and a change to this policy is not to be anticipated in the near future⁶.

⁵ IUCN. 2007. The 2007 Red List of Threatened Fauna and Flora of Sri Lanka.

⁶ Sri Lanka Forestry Outlook Study (FAO, 2009)

Some of the areas in the Western Province are legally protected under the Forest Ordinance, Fauna and Flora Protection Ordinance, and National Environmental Act. There are 21 already declared Forest Reserves and 41 proposed Forest Reserves within the Western Province. In addition, there are four Sanctuaries and one National Park: Sri Jayewardenepura Kotte Sanctuary (449.2ha), Bellanwila Attidiya (372.ha), Muthurajawela block1 (1,028.6ha) & block2 (256.8ha), Maimbulkanda Nittambuwa (25.1ha), and Horagolla National Park (13.36ha) declared and protected under the Fauna and Flora Protection Ordinance.⁷

Table 3: Protected areas managed by Department of Wildlife Conservation and Forest Department⁸

	Name	Number	Area (ha)
Department of Wildlife Conservation	Strict Natural Reserve	3	31,574.40
	National Park	22	535,181.50
	Nature Reserve	5	64,585.01
	Sanctuary	64	307,431.00
	Jungle Corridor	-	-
	Refuge	-	-
	Marine Reserve	-	-
	Intermediate Zone	-	-
	Total		938,771.91
Forest Department	National Heritage and Wilderness Area	1	11,187
	Conservation Forest	111	133,791
	Forest Reserves	518	980,241
	Village Forest	-	-
	Other State Forest	-	516,990
		Total	

(b) Other Protected Areas

Central Environment Authority (CEA) has nine (9) Environmental Protection Areas⁹ based on the National Environmental Act. There are six (6) Ramsar Sites¹⁰, four (4) Man and the Biosphere Reserves¹¹ based on the Man and the Biosphere Programme by United Nations Educational, Scientific and Cultural Organization (UNESCO), and four (4) World Natural Heritage Sites and six (6) World Cultural Heritage Sites¹².

In Western Province, Muthurajawela Buffer Zone, Thalagama Tank, Walauwatta Wathurana, Bolgoda North and South, Dedigama Kanda belong to the Environmental Protection Areas. There are 70 Important Bird and Biodiversity Areas in Sri Lanka¹³. They are identified by BirdLife International, international bird conservation NGO, as key sites for conservation for the birds and associated biodiversity in each country.

(2) Social Environment

1) Politics and Administration

Sri Lanka is a republic country and it has a presidential system and parliamentary cabinet system.

⁷ Survey Department of Sri Lanka. 2007. The National Atlas of Sri Lanka

⁸ Department of Wildlife Conservation: Information from Mr. Channa Suraweera, Assistant Director - Natural Resource management, Department of Wildlife Conservation received on 15 July 2013.
Forest Department: Progress Report 2011 and Action Plan 2012 (Ministry of Environment), and Forest Performance Report (2014: under the process of approval)

⁹ PROGRESS REPORT 2011 and ACTION PLAN 2012 Ministry of Environment

¹⁰ Ramsar Secretariat web site: http://www.ramsar.org/sites/default/files/documents/library/sitelist_25_june_2015.pdf

¹¹ UNESCO web site: <http://www.unesco.org/mabdb/br/brdir/directory/rescount.asp>

¹² UNESCO web site: <http://whc.unesco.org/en/statesparties/LK/>

¹³ BirdLife International web site: <http://www.birdlife.org/datazone/country/sri-lanka/ibas>

The parliament has 225 seats of which members service six year terms of office. 196 out of 225 are elected in respect of 22 electoral districts, while 29 out of 225 are elected at the national level with a system of proportional representation¹⁴.

The local administration is managed by the administrative divisions under Ministry of Public Administration and Management, and the local authorities elected by the local people under Ministry of Provincial Councils and Local Government.

Sri Lanka has the following nine (9) provinces: Northern, North-Central, North-Western, Eastern, Central, Western, Sabaragamuwa, Uva and Southern provinces.

2) Population¹⁵

The population in 2012 is 20,359,439. The rate of annual population growth has been declining since 1953, but it remains at 1.1% during the period of 1981 and 2012. The population density has increased from 230 persons per km² in 1981 to 325 persons per km² in 2012.

Out of the total population of Sri Lanka, 5,851,130 (28.7%) belongs to Western province in 2012. Colombo district records the largest population (2,324,349) of any district in the country. Gampaha district and Kalutara district population are 2,304,833 and 1,221,948 respectively. The population density of the province is 1,588 persons per km² in 2012. Population density of Colombo district is 3,325 which is the highest of any district in the country. Gampaha district and Kalutara district also record high population density of 1,662 and 765 respectively.

3) Ethnic Groups and Religions

Ethnic groups in Sri Lanka are Sinhalese (74.9%), Sri Lankan Tamils (11.2%), Indian Tamils (4.1%) and Sri Lankan Moors (9.3%), and other minority groups include Burghers and Malays (0.5%). Distribution of population by religion shows the following figures: Buddhists (70.1%); Hindus (12.6%); Muslims (9.7%); Catholics (6.2%); and, other Christians (1.4%). In Sri Lanka, Vedda is recognized as an indigenous ethnic group. However, in the recent statistics, they have not been counted as Vedda, because they have been integrated into the surrounding other ethnic groups such as Sinhalese and Sri Lankan Tamils. There are no legislations to protect their rights in the forest areas¹⁶.

In Western province, the population ratio of Sinhalese accounts for 84%, followed by Sri Lankan Moors (7.9%), Tamils (6.8%), and the other ethnic groups. Distribution of Western province population by religion is; Buddhists (73.4%); Roman Catholics (11.1%); Islams (8.6%); Hindus (4.8%); and Other religions (2.1%).¹⁷

(3) Industries

The main industries are agriculture (producing rice, tea, rubber and coconut) and textile industry. Regarding the major export items, 77.0% of them are industrial products (e.g. textile and clothing) and 22.6% are agricultural ones in 2016. Since the civil war ended in 2009, the number of foreign tourists have been increasing.

Table 4 shows the Gross Product by Industrial Origin and their ratio to the Gross Domestic Product (GDP). Table 5 shows the Work Force by Industrial Origin in the Second Quarter of 2013. The agricultural sector does produce less than others, but, considering its number of the Work Force,

¹⁴ The Parliament of Sri Lanka: <http://www.parliament.lk/index.php/en>

¹⁵ Census of Population and Housing 2012 Key Findings, Department of Census and Statistics, Sri Lanka

¹⁶ International Group for Indigenous Affairs: <http://www.iwgia.org/regions/asia/sri-lanka/895-update-2011-sri-lanka>

¹⁷ Census of Population and Housing 2012 Western Province, Department of Census and Statistics, Sri Lanka

it is still the important industry in Sri Lanka.

Table 4: Gross Product by Industrial Origin in 2013

Industry	Product in 2013 (Rs. million)	Ratio to GDP (%)
Agriculture including fisheries	964,766	9.9
Industry	3,308,338	33.8
Services	5,511,568	56.3
Total	9,784,672	100.0

Source: Annual Report 2014, Central Bank of Sri Lanka

Table 5: Work Force by Industrial Origin (Second Quarter of 2013)

Industry	Work Force (person)	Ratio (%)
Agriculture including fisheries	2,404,878	30.3
Industry	2,134,556	26.9
Services	3,390,842	42.8
Total	7,930,276	100.0

Source: Sri Lanka Labour Force Survey, 2013 2nd Quarter, Department of Census and Statistics, Sri Lanka

The real GDP growth rate in 2016 is 4.4% , and the unemployment rate is kept low as 4.4% . It is important and of high priority for the government to promote investment in economic and social infrastructure. Western Province produces more than 40% of the total GDP of Sri Lanka so that the province is the main contributor to the country's economy.

7. Legal framework of the Solid Waste Management

(1) Relevant Organizations Responsible for SWM

In Sri Lanka, LAs are responsible for collection and disposal of waste generated by residents who live in the region, which is stipulated in the Municipal Councils Ordinances No.16, Urban Council Ordinance No.61, and Pradeshiya Sabha Act No. 15. Each LA has been given the authority to define the implementation rules necessary for the waste management and regulation and to impose penalties.

At the provincial level, as supervision right over LAs was handed over from the central government to the Provincial Councils through the 13th Amendment of the 1987 constitution, its rights relating to waste management were accordingly handed over to the Provincial Councils in the Provincial Council Act No. 42.

In 1980, the Ministry of Mahaweli Development and Environment (MoMDE) formulated the National Environmental Act (NEA) No.47 aiming to preserve the environment, to maintain environmental quality and to prevent pollution. Consequently, the CEA has been established and their jurisdictions, functions, and responsibilities are defined in the NEA.

(2) Laws and Ordinances

The laws and ordinances related to solid waste management in Sri Lanka are summarized in the following table.

Table6: Legal Frameworks Related to SWM

Year	Policy & Regulation	Description
1939	Urban Council Ordinance No. 61 of 1939	<ul style="list-style-type: none"> ■ Sections 118, 119, and 120 ■ Specify waste management responsibilities of UCs
1946	Nuisance Ordinance No. 62 of 1939 and No. 57 of 1946	<ul style="list-style-type: none"> ■ Section 1-12

Year	Policy & Regulation	Description
1947	Municipal Councils Ordinances No. 16 of 1947	<ul style="list-style-type: none"> ■ Sections 129, 130, and 131 in 1980 ■ Legal and regulatory framework for waste management at the MC level
1979	Code of Criminal Procedure Act No. 15 of 1979 – Public Nuisances	<ul style="list-style-type: none"> ■ Section 98
1987	Provincial Councils Act No.42 of 1987	<ul style="list-style-type: none"> ■ Amended by Act No.56 of 1988 ■ LAs contain provisions for waste management
1987	Pradeshiya Sabha Act No.15 of 1987	<ul style="list-style-type: none"> ■ Sections 93 and 94 ■ Specify waste management responsibilities of PSs
1980	National Environmental Act No.47 of 1980	<ul style="list-style-type: none"> ■ Section 12 and 26 ■ Establishment of CEA ■ Amended by Act No.56 of 1988 (Introduction of EPL, IEE, EIA) ■ Amended by Act No. 53 of 2000, Gazette Extra ordinary No.1466/5 of 2006
2007	Prevention of Mosquitoes Breeding Act No.11 of 2007	<ul style="list-style-type: none"> ■ Prohibition against creating conditions favourable to the breeding of mosquitoes.
2008	National Thoroughfares Act No. 40 of 2008	<ul style="list-style-type: none"> ■ Section 64 (a), (b), (c) and Section 65
2009	Gazette No. 1627/19 National Environmental (Municipal Solid Waste) Regulations, No. 1 of 2009.	<ul style="list-style-type: none"> ■ General Rules on SWM discharge and collection of waste(Prohibition of waste dumping at national highway and at any place other than places designated for such purpose by the LA

(3) Environmental Standards and Regulations

The wastewater discharge standards are stipulated under the NEA according to the type of industries and discharge methods. According to the list of “The prescribed activities for which a license is required” (NEA No. 47, 1980 Section 23A amended by Act No. 1533/16 2008, CEA), Waste Water Treatment Plants (WWTPs) as well as hospitals and factories using hazardous substances are required to register on an annual basis. Amendments are also being proposed to the NEA to overcome delays in enforcement actions. No amendment components address “wastewater” of any kind at present.

National Environmental (protection and quality) Regulation (EPL) -1990. Gazette Notification Number 595/16 in 1990 and its amendment of Gazette Notification Number 1534/18 in 2008 provide the “General Standards for discharge effluents into inland surface waters”. The EPL is applied for the following projects related to SWM¹⁸;

- Common wastewater (industrial or sewage) treatment plants
- Incinerators with a feeding capacity of five or more metric tons per day
- Water treatment plants with a treatment capacity of 10,000 or more cubic meters per day
- Municipal solid waste and other solid waste composting plants with a capacity of 10 or more metric tons per day
- Solid waste recovery/recycling or processing plants with a capacity of 10 or more metric tons per day
- Solid waste disposal facility with a disposal capacity of 10 or more metric tons per day
- All toxic and hazardous waste treatment facilities or disposal facilities or recycling/recovering or storage facilities
- The defined project for the SWML is Industries /facilities that generate scheduled waste

The Scheduled Waste Management License (SWML) is stipulated in the Gazette Extra ordinary No. 924/13 of 1996, No. 1159/22 of 2000, and No. 1533/16 of 2008. There is no penal clause for non-compliance although legal action is always necessary against the violation of the regulations. The standards concerning water reuse are published by the Sri Lanka Standards Institute but currently there are no governmental requirements for the usage of sludge. The Sri Lanka Standard for Compost from Municipal Solid Waste and Agricultural Waste - SLSI 1246 was published in 2003. However, the “Sri Lanka Standard Specification for Organic Fertilizers” is still in the draft

¹⁸ Naofumi Sato, Ken Kawamoto and Mangalika Lokuliyana “Current condition and issues of municipal solid waste management in Sri Lanka” (2014)

format. Moreover, the code of practice for design and construction of Bio Gas System for domestic (household) use was published as SLS 1292 – Part 1 in 2006. The publication of Part 2 covering the farm scale system with capacity ranging from 10-100m³ is still in progress¹⁹. The environmental standards related to SWM in Sri Lanka are summarized in the following table.

Table 7: Environmental Standards Related to SWM

Year	Pollution control regulation	Descriptions
1983	SLS 614 of 1983 – Part 1	<ul style="list-style-type: none"> ■ Sri Lanka standards specifications for potable water ■ Prescribes the physical and chemical requirements, and methods of sampling and test for drinking water.
1983	SLS 614 of 1983 – Part 2	<ul style="list-style-type: none"> ■ Sri Lanka standards specifications for potable water ■ Prescribes the bacteriological requirements and the methods of sampling and test for drinking water.
1984	SLS 652 of 1984	<ul style="list-style-type: none"> ■ Tolerance limits for industrial effluents discharged into inland surface waters
1984 /1985	SLS 722 of 1984/1985	<ul style="list-style-type: none"> ■ Tolerance limits for inland surface waters for use as raw water for public water supply
1990	Gazette Extraordinary No. 595/16 of 1990	<ul style="list-style-type: none"> ■ National Environmental Protection and Quality Regulations ■ Specify content and specifications of EPL, the tolerance limits for wastewater discharge from major industries and activities ■ Amended by Gazette Extra ordinary No. 924/13 of 1996, No. 1159/22 of 2000, No. 1533/16 of 2008 ■ Scheduled waste management license (SWML)
1993	Gazette Extraordinary No. 772/22 of 1993	<ul style="list-style-type: none"> ■ National Environmental (Procedure for approval projects) Regulations ■ Specify project approval agencies, projects for IEE/EIA approvals ■ Amended by Gazette Extra ordinary No.859/14 of 1995 and No. 1104/22 of 1999
1994	Gazette Extraordinary No. 850/4 of 1994	<ul style="list-style-type: none"> ■ National Environmental Regulations on Ambient Air Quality ■ Amended by Gazette Extra ordinary No. 156/22 of 2008
1996	Gazette Extraordinary No. 924/12 of 1996	<ul style="list-style-type: none"> ■ National Environmental Noise Control Regulations
2000	Gazette Extraordinary No. 1137/35 of 2003	<ul style="list-style-type: none"> ■ National Environmental Regulations for Mobile Air Quality (Air Emission, Fuel and Vehicle Importation Standards)
2003	SLSII246 of 2003	<ul style="list-style-type: none"> ■ Sri Lanka Standard for Compost from Municipal Solid Waste and Agricultural Waste
2006	SLS 1292 of 2006	<ul style="list-style-type: none"> ■ Code of Practice for Design and Construction of Biogas Systems – Part 1 Domestic Biogas Systems
2006	Gazette Extraordinary No. 1466/5 of 2006	<ul style="list-style-type: none"> ■ Regulation on Prohibition of Manufacture of Polythene or Any Product of 20 micron or below thickness
2008	Gazette Extraordinary No. 1534/18 of 2008	<ul style="list-style-type: none"> ■ National Environmental Protection and Quality Regulations ■ Management of scheduled waste

(4) Guidelines

Guidelines related to SWM have been developed by several relevant ministries. Among them, the guidelines developed by the CEA are to provide guidelines on the basic waste treatment technology at the national level. But the CEA hopes that the local governments will be able to review them and develop more stringent guidelines by themselves in the future. The guidelines related to SWM in Sri Lanka are summarized in the following table.

Table 8: Guidelines Related to SWM

Year	Guideline	Relevant authority	Descriptions
2001	Healthcare Waste Management Guideline	Ministry of Health, & Indigenous Medicine	To provide evidence based recommendation to clinicians to manage hospital generated waste with minimum harm to the environment.
2003	Solid Waste Management Guideline for Local Authorities	Ministry of Home Affairs, Provincial Councils and Local Government	To support the SWM practice for LAs
2005	Technical Guidelines on Municipal Solid Waste Management in Sri Lanka	Central Environmental Authority (CEA)	To support the SWM and siting of engineered landfills
2007	Technical Guidelines on Solid Waste Management in Sri Lanka	Central Environmental Authority (CEA)	To support the SWM and siting of engineered landfills ²⁰

¹⁹ JST-JICA SATREPS Project: Environment Business Survey in Sri Lanka (May, 2014)

²⁰ Regarding the final disposal, there is a regulation on open dumping by law but there are only two sanitary landfill sites (the Moon Plains Landfill Site in Nuwara Eliya, Maligawatte Landfill Site in Dompe) and it is difficult for small LAs with less than 10 ton/day of waste generation amount to construct a final disposal site taking into consideration their financial capacity. Therefore, the guideline has

Year	Guideline	Relevant authority	Descriptions
2009	Guidelines for the Management of Scheduled Waste in Sri Lanka	Central Environmental Authority (CEA)	To manage the scheduled waste management

8. Environmental Assessment

(1) Strategic Environmental Assessment (SEA)

The Cabinet of Ministries decided, in 2006, to introduce Strategic Environmental Assessment (SEA) to all new policies, plans and programs implemented in the country to avoid, reduce and/or mitigate impacts especially cumulative impacts induced by the economic growth. CEA published guidelines for the ministries and authorities to smoothly apply SEA to their policies, plans and programs.

(2) Environmental Impact Assessment (EIA)

The EIA in Sri Lanka was introduced in the Coastal Conservation Act No.57/1981, but the EIAs for projects was only implemented in coastal areas. On the other hand, the National Environmental Act (NEA), enacted in 1980 and amended in 1988, included legislation related to the EIA. The NEA made implementation of an EIA mandatory. In the NEA, the Project Approving Agency (PAA) is responsible for the approval of the EIA. A single PAA is designated as responsible for administrating the EIA process for a particular project. The organization designated as the PAA is to be that which is most relevant depending on the project characteristics such as its size, ecosystem and whether the area is inhabited by rare species and so on. It is also stipulated that the project owner, including the Central Environmental Authority (CEA), cannot be the PAA. Four related gazettes are listed below.

- No. 772/22 (24th of June, 1993)
- No. 859/14 (23rd of February, 1995)
- No. 1104/22 (5th of November, 1999)
- No. 1108/1 (29th of November, 1999)

Projects that must conduct an Environmental Impact Assessment (prescribed projects) are those that have a seriously a negative impact on the environment and/or those that will be implemented in an environmentally sensitive area. The EIA is mandated in the National Heritage and Wilderness Act in 1988, the North Western Provincial Council Environmental Statute in 1990 and the Fauna and Flora Protection Ordinance in 1993.

Furthermore, the Amendment to the NEA in 1993 requires an Environmental Impact Assessment (EIA) for the establishment of any facilities such as intermediate treatment and final disposal site(s) with a capacity exceeding 100 ton/day and waste treatment plants treating toxic or hazardous waste.

Table 9: Act, Statute and Ordinance list which mandate EIA

Name	Targeted Area	Enacted/amended year	Project Approving Agency
Coastal Conservation Act	Coastal Area	1981	Coast Conservation Department (CCD)
National Environmental Act	The area provided in Part IV C	1988	Central Environmental Authority and related authorities and departments
National Heritage and Wilderness Act	Nature and wilderness area	1988	Department of Wildlife Conservation

North Western Provincial Council Environmental Statute	Northwestern province	1990	Provincial Environmental Authority of the North Western Province
Fauna and Flora Protection Ordinance	Within 1 mile form National Protection area	1993	Department of Wildlife Conservation

Reference: Profile on Environmental and Social Considerations in Sri Lanka (JICA, 2012)

Guidance for Implementing the Environmental Impact Assessment Process was prepared in 1993 by the CEA to enhance implementation of the EIA procedure by the PAA and the latest version was made in 2006.

(3) The contents of EIA procedure

The NEA divides the EIA procedure into two steps according to the project scale and extent and level of negative impact of the project. The details are as follows.

A) Initial Environmental Examination (IEE)

The Implementation of the IEE shall be mandatory when the PAA deems that the project does not have a severe environmental impact. The IEE report shall normally be composed within 10 pages and it should be conducted based on a brief survey of relevant documents and data. The composition of the IEE report is as follows:

1. Executive summary
2. Objective, necessity and statutory requirement for the project
3. General and current environment
4. Environmental impact
5. Mitigation measures and environmental monitoring plan
6. Appendix

B) Environmental Impact Assessment (EIA)

The Implementation of the EIA shall be mandated when the PAA deems that the project has a severe environmental impact. The EIA report shall include not only the general survey, assessment and evaluation but also the Cost Benefit analyses. Generally, the projects targeted for the EIA in Sri Lanka are large scale developments for water resources, construction of roads and pipelines including environmental protection areas. The composition of the EIA report is as follows:

1. Executive summary
2. Objective, necessity and statutory requirement for the project
3. Outline of the project and alternative plan
4. Environmental impact
5. Mitigation measures and Cost and benefit analyses
6. Environmental monitoring planning
7. Appendix

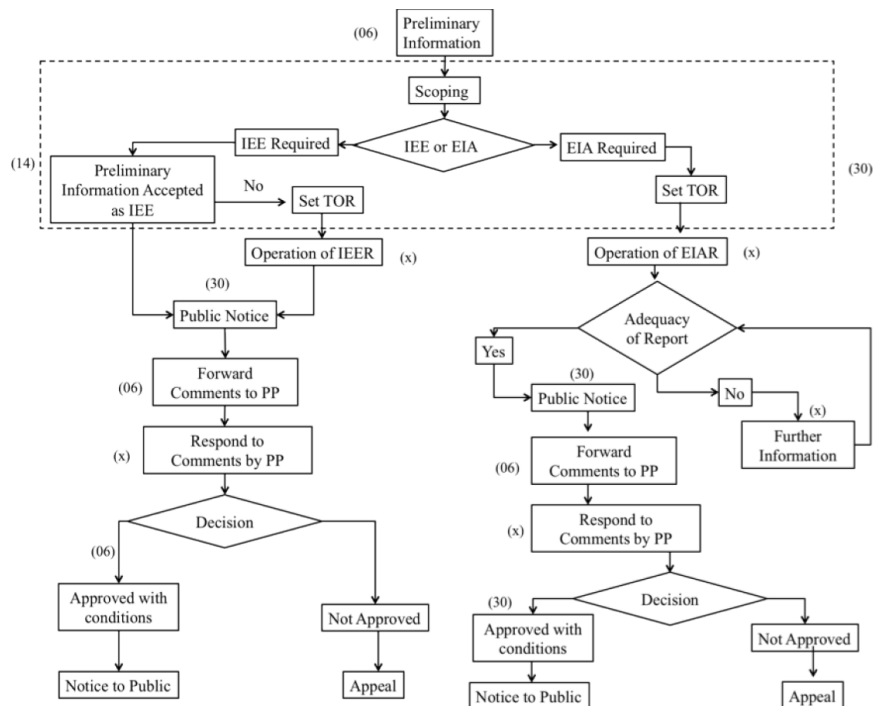
(4) EIA procedure

1. The Project Proponent (PP) supplies preliminary information to the PAA.
2. The PAA implements scoping (environmental assessment) considering the environmental impact and then, along with related organizations, asks the PP questions regarding the project. The PAA then carries out the implementation decision of the EIA or IEE, taking the results of questions into account, and then it finalizes the TOR for the project.

3. The PP prepares the IEE/EIA report in three languages; English, Sinhala and Tamil. After it is submitted to the PAA, the PAA publishes the IEE/EIA report in the aforementioned three languages in the newspaper.
4. The PAA and the CEA review the IEE/EIA report and then the PAA notifies the PP of their questionnaire for the project. Their questionnaire and opinion can be looked through (reviewed) for 30 working days. If there is an argument between residents, the PAA and CEA have to hold a public hearing.
5. The PAA can require the PP to provide clear and detailed answers depending on the residential review.
6. The PAA can determine if a project gets passed or rejected with the CEA's approval. In case it passes, the project shall be within acceptable environmental impact levels.
7. In case it is rejected, a petition by the PP shall be permitted.
8. In case it is passed, the PP and the PAA shall implement the monitoring for environmental impact items.

(5) Approval procedure for EIA

The flow of the EIA procedure by the PAA is as follows



Source: Road Development Authority. 2009. Environmental and Social Safeguards Manual.

Figure 2: The flow of EIA procedure by PAA

Review and monitoring of the development project at the coastal area by the Coast Conservation Department shall be required under the Coastal Conservation Act. The flow of the EIA procedure by the CCD is similar to the PAA flow.

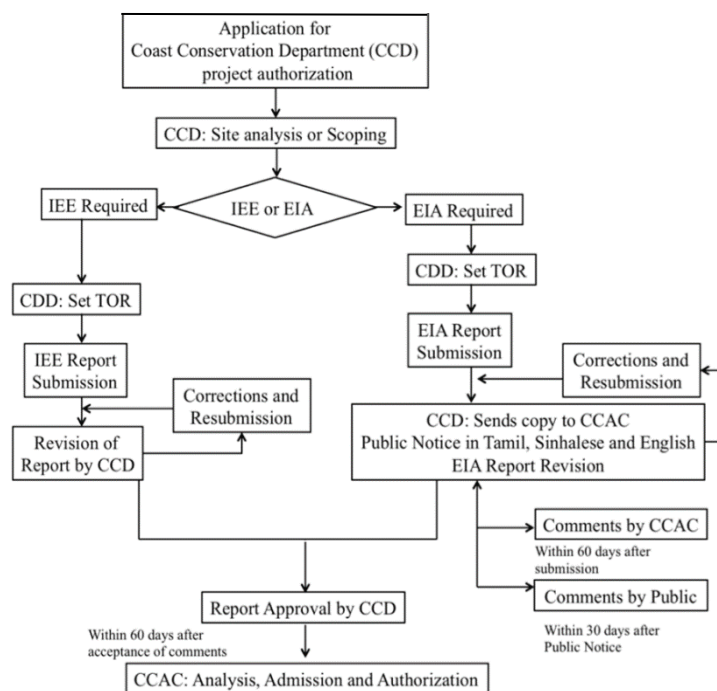


Figure 3: The flow of EIA procedure by CCD

(6) The Laws and regulations related to EIA

The Laws and regulations related to EIA are as follows

Table10: The Laws and regulations related to EIA

No.	Name of legislations and Policies	Year
1	Forest Ordinance No. 16 of 1907 (as amended) and the Rules and Regulations under the Ordinance	1907
2	Fauna and Flora Protection Ordinance No. 2 of 1937 (as amended by Act Nos. 49 of 1993, 12 of 2005) and the Regulations under the Ordinance	1937
3	Mines and Minerals Act	1973
4	National Water Supply and Drainage Board Law	1974
5	Coast Conservation Act	1981
6	National Aquatic Resources Research and Development Agency Act	1981
7	National Heritage Wilderness Act	1987
8	National Environmental Action Plan	1991
9	Clean Air 2000 Action Plan	1993
10	Forestry Sector Master Plan: To translate policy strategies into action (1995–2020)	1995
11	National Biodiversity Conservation Action Plan	1998
12	National Industrial Pollution Management Policy	1998
13	National Strategy for Solid Waste Management	2002
14	Caring For The Environment 2003–2007: Path to Sustainable Development, the successor of NEAP 1998–2001	2003
15	National Environment Policy	2003
16	National Forestry Policy	2005
17	Progress Report 2011 and Action Plan 2012 (regularly published)	2012
18	Biodiversity Conservation in Sri Lanka: A Framework of Action	1998
19	Forestry Sector Master Plan—to translate policy strategies into action (1995–2020)	1995
21	National Biosafety Policy	2005
22	National Forestry Policy	2005

No.	Name of legislations and Policies	Year
23	National Policy on Elephant Conservation and Management	2006
24	National Wetland Policy and Strategy	2006
25	National Wildlife Policy	2000
26	National Environmental Act No. 47 of 1980 (as amended by Acts No. 56 of 1988 and 53 of 2000) and the Regulations under the Act	1980
29	Mahaweli Authority of Sri Lanka Act No. 23 of 1979 (as amended) and the Regulations under the Act	1979
30	State Lands Ordinance No. 8 of 1947 (as amended) – Parts VI, VIII, IX	1947
32	Irrigation Ordinance No. 32 of 1946 (as amended) – Part VI	1946
33	Water Resources Board Act No. 29 of 1964 (as amended)	1964
34	Coast Conservation Act No. 57 of 1981 (as amended)	1981
35	Marine Pollution Prevention Act No. 35 of 2008	2008
36	Fisheries and Aquatic Resources Act No. 2 of 1996 (as amended)	1996
37	National Heritage Wilderness Areas Act No. 3 of 1988	1988
38	Soil Conservation Act No. 25 of 1951 (as amended)	1951
39	Plant Protection Act No. 35 of 1999	1999
40	Felling of Trees (Control) Act No. 9 of 1951 (as amended)	1951
41	Flood Protection Ordinance No. 4 of 1924 (as amended)	1924
42	Water Hyacinth Ordinance No. 4 of 1909	1909
43	Control of Pesticides Act No. 33 of 1980 (as amended)	1980
44	Atomic Energy Authority Act No. 19 of 1969	1969
45	Health Services Act No. 12 of 1952 (as amended)	1952
46	Municipal Councils Ordinance No. 29 of 1947 (as amended)	1947
47	Urban Councils Ordinance No. 61 of 1939 (as amended)	1939
48	Pradeshiya Sabha Act No. 15 of 1987 (as amended)	1987
49	Urban Development Authority Law No. 41 of 1978 (as amended)	1978
50	Sri Lanka Land Reclamation and Development Corporation Act No. 15 of 1968 (as amended)	1968
51	Agrarian Development Act No. 46 of 2000 – Part II	2000
52	National Aquaculture Development Authority of Sri Lanka Act No. 53 of 1998 (as amended)	1998
53	Sri Lanka Sustainable Energy Authority Act No. 35 of 2007	2007
54	Code of Criminal Procedure Act No. 15 of 1979 (as amended) – Section 98 and Section 261 of the Penal Code (as amended)	1979
55	Nuisances Ordinance No. 15 of 1862 (as amended)	1862
56	Land Acquisition Act, No. 9 (1950/1956)	1950
57	Crown Lands Ordinance (1956/1960)	1956
58	Land Development (Amendment) Act, No. 9	1995
59	Land Development (Amendment) Act, No. 20	1996
60	A Reprint of the Land Development Ordinance (Chapter 464) as amended by Acts Nos. 60 of 1961 and 16 of 1969	1935
61	Temple Land Compensation Ordinance	Unknown
62	Guidance for Implementing the Environmental Impact Assessment Process, Central Environmental Authority, No. 1 - General Guide for Project Approving Agencies (PAA), No. 2 - General Guide for Conducting Environmental Scoping	1995
63	Environmental Guidelines for Road and Rail Development in Sri Lanka, Central Environmental Authority	1997
64	National Involuntary Resettlement Policy	2001

Source: Profile on Environmental and Social Considerations in Sri Lanka, July 2012, JICA

(7) Permission and License related to Environment

The Environmental Protection License (EPL) is Sri Lanka's major regulatory program for control of industrial pollution stipulated in the National Environmental Act No. 47 of 1980, which was amended by Acts No.56 of 1988 and No. 53 of 2000. Industries and activities that have to be issued EPLs are classified under three categories: Category A, B and C. If a proposed project falls under Category A, the project proponent requires an EPL from the CEA, while Category C projects require EPLs from the respective local authorities. Like Category A, Category B projects

require EPLs from the CEA, but the EPLs can be processed through the regional office of the CEA.

In Sri Lanka, solid waste is categorized into three groups mainly according to the generation sites: Municipal solid waste, health-care waste and hazardous waste. In the actual disposal and treatment, health-care waste is divided into either municipal solid waste (non-hazardous waste) or hazardous waste (NSWMS and JICA 2008).

Municipal solid waste is managed by Local Authorities (LAs). While the disposal and treatment of hazardous waste is the responsibility of the discharger, the CEA is responsible for the supervision of hazardous waste management. As for municipal solid waste (non-hazardous waste), the CEA asks LAs for site clearance of municipal solid waste facilities, including landfills. A facility that receives over 100 tons/day has to perform an EIA and receives approval while one that receives less than 100 tons/day needs only an environmental recommendation from the CEA (NSWMS and JICA 2008). In addition to an EIA, a facility that receives over 10 tons/day has to obtain an EPL. Since pilot projects and/or activities to be carried out by the Project will not include facility construction, EIA will not be required.

(8) Differences between JICA Guidelines and Sri Lankan Regulations

Regarding the regulations related to EIA and involuntary resettlement in Sri Lanka, there are differences between the JICA Guidelines for Environmental and Social Considerations (2010) and the Sri Lankan regulations. Table 11 and 12 show these differences.

Table 11 Differences between Sri Lankan Regulations and JICA Guidelines on EIA

Item	JICA Guidelines	Sri Lankan Regulations	Gap Analysis and Countermeasures
Basic Concept	Social and environmental impacts may be caused by the project should be studied and considered at as an early stage as possible. The project must include alternatives and mitigation measures in the plan to avoid or minimize the possible impacts.	All development projects in Sri Lanka require EIA, regardless of whether the proponent is a private organization or a state agency. The National Environmental (Amendment) Act (NEA), No. 56 of 1988 (originally enacted in 1980) introduced EIAs as part of a strategy to achieve sustainable development for the entire country. The amendment act mandated that all 'prescribed' development projects are required to be subjected to an EIA. EIA provisions are also in the Fauna and Flora (Amended) Act No. 49 of 1993. According to that Act, any development activity of any description whatsoever proposed within one mile from the boundary of any National Reserve is required to be subject to EIA.	No significant gap
Information Disclosure	EIA reports have to be prepared in local languages and disclosed to stakeholders. Stakeholders can ask for copies of EIA reports. Project proponents etc. should make efforts to make the results of the monitoring process available to local project stakeholders.	EIA reports have to be disclosed to receive public comment. Monitoring results also should be disclosed only when requested.	No significant gap

Public Participation	<p>For projects with a potentially large environmental impact, sufficient consultations with stakeholders must be conducted via information disclosure. Collected comments and/or concerns have to be incorporated into the plan.</p> <p>At the stage of scoping impact and drafting EIA reports, adequate information disclosure and consultation with stakeholders must be conducted.</p>	<p>SEA stage: No specific opportunity is provided.</p> <p>EIA stage: Stakeholders are provided an opportunity to participate at the scoping. In this case, the stakeholders are usually related governmental organizations (not local people). The stakeholders can submit queries and comments on the EIA report.</p> <p>The NEA states that a public hearing may be held at the discretion of the PAA.</p>	<p>The 30-day term for public comment that the Sri Lankan government stipulates differs greatly from the recommended 120-day JICA policy.</p> <p>Appropriate term for public comments should be determined at the implementation stage of the Project.</p>
Environmental checklist	<p>Environmental checklist is provided by the guidelines for each sector. An EIA report should contain the items in the checklist.</p>	<p>No specific checklist is provided. A Project Approving Agency shall prepare terms of reference for an EIA (or IEE) study.</p>	<p>No specific environmental checklist is provided in Sri Lanka. On the contrary, JICA guidelines require to cover direct and immediate impacts of projects. Additionally, derivative, secondary, and cumulative impacts as well as the impacts of projects that are indivisible from the project are also to be examined and assessed to a reasonable extent.</p> <p>The Project should make reference to the checklist provided by the JICA guidelines.</p>

Monitoring	Project proponents etc. should make efforts to make the results of the monitoring process available to local project stakeholders. When third parties point out, in concrete terms, that environmental and social considerations are not being fully undertaken, forums for discussion and examination of countermeasures are established based on sufficient information disclosure, including stakeholder's participation in relevant projects. Project proponent etc. should make efforts to reach an agreement on procedures to be adopted with a view to resolving problems.	The PAA must make a plan to monitor the project and must submit the plan to CEA with the report provided by the proponent. Usually PAA commissions other bodies to carry out the monitoring of the project. Mitigation and other conditions established in the IEE/EIA during its review and committed to as part of the decision should be implemented by the project proponent and monitored by the PAA.	No significant gap
Ecosystem and Biota	Projects must not involve significant conversion or significant degradation of critical natural habitats and critical forests.	The EIA is mandated in the National Heritage and Wilderness Act in 1988, the North Western Provincial Council Environmental Statute in 1990 and the Fauna and Flora Protection Ordinance in 1993.	No significant gap The masterplan formulated the Project must exclude protected area by the laws and ordinances in Sri Lanka as construction sites.
Indigenous Peoples	Any adverse impacts that a project may have on indigenous peoples are to be avoided when feasible by exploring all viable alternatives. When, after such an examination, avoidance is proved unfeasible, effective measures must be taken to minimize impacts and to compensate indigenous peoples for their losses.	Implementing agencies, such as the Road Development Authority and the Mahaweli Authority, use a screening process based on a checklist provided by donors or initial poverty and social assessments. The information obtained from the checklist is used to determine the impact of the project in these communities. According to the checklist, a project is categorized as Category A, B, or C to identify measures to be taken.	While ADB and other international donors emphasize the importance of protecting indigenous people's rights and minimizing the impact on their ancestral lands, the government of Sri Lanka prioritizes development over the protection of ancestral lands. Countermeasures is unnecessary since the Project may not give any adverse effects on indigenous people.

Source: Profile on Environmental and Social Considerations in Sri Lanka (JICA, 2012)

Table 12 Differences between Sri Lankan Laws and JICA Guidelines on Involuntary Resettlement

Item	JICA Guidelines	Sri Lankan Regulations
Basic Concept	Involuntary resettlement and loss of means of livelihood are to be avoided when feasible by exploring all viable alternatives. When, after such an examination, avoidance is proved unfeasible, effective measures to minimize impact and to compensate for losses must be agreed upon with the people who will be affected.	The National Involuntary Resettlement Policy (NIRP) emphasize that all efforts are made to minimize involuntary resettlement in projects and where it is unavoidable, affected people are assisted to re-establish their livelihoods.

Resettlement Action Plan (RAP)	For projects that will result in large-scale involuntary resettlement, resettlement action plans must be prepared and made available to the public. In preparing a resettlement action plan, consultations must be held with the affected people and their communities based on sufficient information made available to them in advance. When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people. It is desirable that the resettlement action plan include elements laid out in the World Bank Safeguard Policy, OP 4.12, Annex A.	In case that the number of resettled households is 20 or more, NIRP requires a RAP.
Compensation for land resettlement	People who must be resettled involuntarily and people whose means of livelihood will be hindered or lost must be sufficiently compensated and supported by project proponents etc. in a timely manner. Prior compensation, at full replacement cost, must be provided as much as possible. Host countries must make efforts to enable people affected by projects and to improve their standard of living, income opportunities, and production levels, or at least to restore these to pre-project levels. Measures to achieve this may include: providing land and monetary compensation for losses (to cover land and property losses), supporting means for an alternative sustainable livelihood, and providing the expenses necessary for the relocation and re-establishment of communities at resettlement sites.	<p>The Land Acquisition Act (LAA) provides for the payment of compensation on the basis of “market value” which is defined as the “amount which the land might be expected to have realized if sold by a willing seller in the open market as a separate entity”.</p> <p>The Land Acquisition regulations of 2008 redefines the valuation approach to determine “market value” stating that “in case of land where part of land is acquired and when its value as a separate entity deems to realize a value proportionately lower than the market value of the main land the compensation should be proportionate to the value of the main land.</p> <p>NIRP recommends that compensation for loss of land, structures, other assets and income should be based on full replacement cost and should be paid promptly together with transaction costs. NIRP also recommends that affected persons who do not have documented title to land should receive fair and just treatment.</p>
Participation of affected people and grievance mechanisms.	Appropriate participation by affected people and their communities must be promoted in the planning, implementation, and monitoring of resettlement action plans and measures to prevent the loss of their means of livelihood. In addition, appropriate and accessible grievance mechanisms must be established for the affected people and their communities.	<p>LAA provides a limited grievance redress mechanism whereby certain grievances of the affected persons relating to compensation can be referred to the Board of Review established under LAA.</p> <p>NIRP recommends the establishment of an internal monitoring system by project executing agencies to monitor the implementation of RAPs and handling of grievances. Each project should have its own grievance redress mechanism formally instituted by the project authorities with the support of the Divisional Secretaries of the project area.</p>

Source: Land Acquisition and Implementation of the National Involuntary Resettlement Policy: A Guide for Public Officials on Good Practices (Ministry of Land and Land Development, 2013)

9. Provisional Scoping

Provisional scoping was made for possible waste treatment facilities that might be proposed by the output of the Project. The results of the provisional scoping are summarized in the table below. Since this provisional scoping is for identifying important environmental impact items, detailed impacts, mitigation measures, and monitoring method will be elaborated on through the implementation of the Project.

Provisional Scoping Matrix for possible facilities proposed by the Master Plan

Example of possible facilities proposed by the Master Plan; Material Recovery Facility, Sanitary Landfill site, Waste to Energy Plant and/or Transfer Station

The items are selected based on the JICA Guidelines for Environmental and Social Considerations (April, 2010).

Category of Impact Level:

A: Significant impact is expected (+: Positive impact, -: Negative impact)

B: Some impact is expected (+: Positive impact, -: Negative impact)

C: Extent of impact is unknown, further examination will be required (+: Positive impact, -: Negative impact)

D: No impact is expected

No.	Item	Scoping result			Description of Impacts/ Reasons for Rating
		P	C	O	
					Note for abbreviations: P: planning stage, C: construction stage, and O: operation stage. Rational of assessment is described below for respective stages.
Natural Environment					
1.1	Climate/Meteorological Phenomena	D	D	D	P: No impact is expected as no engineering work is carried work at this stage.
					C&O: The impacts on micro-climate and micro meteorological phenomena might be negligible.
1.2	Topography	D	B-	D	P: No impact is expected as no engineering work is carried work at this stage.
					C: Changes in topographic condition might occur due to excavation and filling works. Balancing the volume of excavation and filling is recommended to minimize the impacts of topographic change.
					O: Topographic feature will be constant after the completion of the facilities construction.
1.3	Geology	D	D	D	P, C&O: No impact is expected as the project will not alter the geological conditions of the project area.
1.4	Soil Erosion	D	B-	D	P: No impact is expected as no engineering work is carried work at this stage.
					C: Soil erosion might take place in the construction works of the facilities at rainy season. Preventive measures should be elaborated.
					O: Soil erosion will not take place after the completion of the facilities.
1.5	Hydrology	D	D	D	P: No impact is expected as no engineering work is carried work at this stage.
					C: It is unlikely that construction works cause any minor or temporal impact on hydrology.
					O: Hydrology profile will be constant after the completion of the facilities construction.
1.6	Groundwater	D	D	C-	P: No impact is expected as no engineering work is carried work at this stage.
					C: Construction work of the facilities will not accompany the groundwater abstraction.
					O: Contamination by leachate will be expected after the completion of the facilities construction.

1.7	Ecosystem, Flora, Fauna and Biodiversity	D	C-	D	P: No impact is expected in this stage. In planning stage, the project should be planned where no unique/endangered species inhabit.
					C: It might be possible that some trees and bushes will be removed during the construction work of the facilities. The remedial measures of replanting tree and bush should be proposed.
					O: No impact is expected during the operation stage.
1.8	Protected area/ Forest	D	C-	D	P: No impact is expected in this stage. In planning stage, the project area should be planned other than protected areas.
					C: Construction work may demolish some part of forest if the project is localized in such a place.
					O: No impact is expected in operation stage.
1.9	Coastal Zone	D	D	D	P, C&O: Project is unlikely located at coastal zone.
1.10	Landscape	D	C-	C-	P: No impact is expected as no engineering work is carried work at this stage.
					C: Construction work might cause minor and temporally impact on landscape.
					O: Facilities might cause minor and temporally impact on landscape depending on the area.
1.11	Natural Disaster	D	D	D	P, C&O: Waste treatment project will not induce natural disaster.
Living Environment (Pollution Control)					
2.1	Air Pollution	D	B-	B-	P: No impact is expected as no engineering work is carried work at this stage.
					C: A certain amount of air pollutants is expected to be emitted from the use of heavy machines and vehicles during construction work of the facilities.
					O: A certain amount of air pollutants is expected to be emitted from the facilities. Facilities should be designed for minimal emission of air pollutants.
2.2	Offensive Odor	D	C-	B-	P: No impact is expected as no engineering work is carried work at this stage.
					C: A certain emission of offensive odor is possible during construction work of facilities. Preventive measures should be elaborated.
					O: Offensive odor might be emitted from the facilities. Facilities should be designed for minimal emission of offensive odor.
2.3	Water Pollution	D	B-	C-	P: No impact is expected as no engineering work is carried work at this stage.
					C: It is possible that turbid water is produced from the construction. Preventive measures should be elaborated.
					O: Contamination by leachate will be expected if there's river nearby after the completion of the facilities construction.
2.4	Bottom Sediment Contamination	D	B-	C-	P&O: Waste treatment project will not contaminate bottom sediment in the rivers and canals.
					C: Sedimentation might occur due to the construction works of the facilities.
2.5	Soil Contamination	D	B-	B-	P: No impact is expected as no engineering work is carried work at this stage.
					C: Soil contamination might take place in the construction works of the facilities if no preventive measures are elaborated.
					O: Soil contamination caused by leachate might take place after the completion of the facilities.

2.6	Land Subsidence	D	D	D	P: No impact is expected as no engineering work is carried work at this stage
					C: As groundwater abstraction will not be done in construction work of the facilities, land subsidence will not take place.
					O: Land subsidence will not take place during operation stage.
2.7	Noise/Vibration	D	B-	B-	P: No impact is expected as no engineering work is carried work at this stage.
					C: Noise and vibration will be generated from the construction sites of the facilities
					O: Facilities operation will cause some noise and vibration. Preventive measures should be elaborated.
2.8	Sunshine Obstruction	D	B-	B-	P: No impact is expected as no engineering work is carried work at this stage.
					C: A certain sunshine obstruction will be produced during construction of the facilities.
					O: Facilities will produce sunshine obstruction. Impact mitigation measures should be included in the facilities design such as buffer zone placement.
2.9	Waste/Hazardous Materials	D	B-	B-	P: No impact is expected as no engineering work is carried work at this stage.
					C: Construction work of the facilities will generate surplus soil and construction debris.
					O: Waste treatment plant such as incineration plant will produce hazardous substances like fly ashes. Facilities should be designed for minimal production of hazardous substances.
Social Environment					
3.1	Involuntary Resettlement	C-	D	D	P: Involuntary resettlement may occur. Minimizing the resettlement should be the priority for facility localization planning. (i.e., SEA is necessary.)
					C: Resettlement will be completed in the pre-construction stage.
					O: No resettlement will occur in operation stage.
3.2	Land Acquisition	B-	D	D	P: Land acquisition will be needed for the construction of facilities.
					C: Land acquisition will be completed in the pre-construction stage.
					O: No land acquisition will occur in operation stage.
3.3	Utilization of Local Resources	D	C-	D	P: No impact is expected as no engineering work is carried work at this stage.
					C: If massive use of local resources such as construction materials takes place in a short period, it may obstruct these utilization by the local people for other purposes.
					O: No impact is expected in operation stage.
3.4	General, Regional/City Plans	B-	D	C+	P: Localization of waste treatment facilities should be compatible with general, regional/city plans.
					C: No impact is expected in construction stage.
					O: The facilities as an infrastructure of municipal services may bring about benefits for the municipality and citizens.
3.5	Social Institutions	D	D	D	P, C&O: No impact is expected as there will be no change in social institutions.

3.6	Social Infrastructure and Services	D	B-	B+	P: No impact is expected as no engineering work is carried work at this stage.
					C: Access to social infrastructure and services may be temporarily affected due to construction work of the facilities as well as traffic congestion due to the operation of construction vehicles.
					O: The project will improve municipal waste management services.
3.7	Local Economy and Livelihood	B-	B-B+	B+	P: If involuntary resettlement takes place, loss of income source and livelihood might be introduced and consequently it might negatively affect the local economy and livelihood.
					C: Temporal traffic restriction and traffic congestion accompanied with construction work may give negative impact to the local economy. On the other hand, construction works of the facilities will have positive impact on local economy by creating employment and business opportunity in the project area.
					O: Improvement of municipal services of waste management will bring about the living condition improvement and it will lead to the improvement of the livelihood.
3.8	Unequal Distribution of Benefit and Damage	B-	B-	D	P: If involuntary resettlement takes place, it will lead to unequal distribution of benefit and damage between groups who are directly affected by the project and who are not.
					C: If involuntary resettlement takes place, resettling households bear much of damage, meanwhile other may get benefits from job creation relating the construction works, resulting in unequal distribution of benefit and damage.
					O: No impact is expected in operation stage.
3.9	Local Conflict and Inequity	D	B-	B-	P: No impact is expected.
					C: If construction works introduce benefit for someone such as employment and someone not. It may create local conflict and inequity.
					O: If facilities operation introduces benefit for someone such as business opportunity and someone not. It may create local conflict and inequity.
3.10	Water Usage, Water Rights	D	D	D	P: No impact is expected.
					C: No impact is expected during construction stage.
					O: No impact is expected.
3.11	Cultural and Historical Heritage	C-	C-	D	P&C: Project area is not selected. However, it is predicted that there is a cultural and historical heritage depending on selected location of the project area.
					O: No impact is expected as the project will not affect cultural and historical heritage.
3.12	Religious Facilities	C-	C-	D	P: Project area is not selected. However, it is predicted that there are religious facilities depending on selected location of the project area.
					C: No impact is expected during construction stage.
					O: No impact is expected.
3.13	Sensitive Facilities (ex. hospital, school, precision machine factory)	C-	C-	D	P: Project area is not selected. However, it is predicted that there are sensitive facilities depending on selected location of the project area.
					C: Temporal traffic restriction and traffic congestion accompanied with construction work may indirectly give small negative impact to sensitive facilities.
					O: No impact is anticipated in operation stage.

3.14	Poor People	D	B+	B-	P: No impact is expected.
					C: They might be benefitted from employment opportunities during construction work.
					O: Waste collection and treatment system newly instrumented might give negative impacts to poor who survive by gaining income from waste picking at streets. Employment opportunities for street waste pickers should be considered.
3.15	Ethnic Minorities /Indigenous People	C-	C-	C-	P, C&O: Project area is not selected. However, it is predicted that there is impact to ethnic minorities and/or indigenous people depending on selected location of the project area.
3.16	Gender	D	D	C-	P&C: No impact is expected.
					O: Details of impacts are not known as the project area is not selected
3.17	Children's Rights	D	D	D	P: No impact is expected.
					C&O: Child labor is unlawful and only adult is eligible for employment opportunity created by the project. Note: The National Child Protection Act No. 50 of 1998, states in Article 39, that a child means any person under 18 years of age.
3.18	Public Health	D	B-	B-	P: No impact is expected.
					C: It is possible that construction works may increase health risk of workers and consequently bring about degradation of public health. Preventive measures should be elaborated.
					O: It is possible that area around disposal site may increase health risk such as infectious diseases.
3.19	Occupational Health and Safety (OHS)	D	B-	B-	P: No impact is expected.
					C: Occupational health and safety of construction work should be properly managed through adequate labor management.
					O: Occupational health and safety of operation and maintenance work of the facilities should be properly managed through adequate labor management.
3.20	Infectious Diseases such as HIV/AIDs	D	B-	D	P: No impact is expected
					C: It is possible that workers activities may cause risk of infectious diseases such as HIV / AIDs.
					O: No impact is expected.
Others					
4.1	Accidents	D	B-	B-	P: No impact is expected.
					C: Accidents associated with construction work should be properly managed through adequate safety management.
					O: Accidents associated with operation and maintenance work of the facilities should be properly managed through adequate safety management.
4.2	Greenhouse Effect Gas (GHG) Emissions	D	B-	B-	P: No impact is expected.
					C: The use of construction machines and operation of vehicles will result in increase inGHG emissions.
					O: Waste treatment facilities may increase methane..

10. Alternatives to the Project Activities including “Without project” Option

Alternatives to the project activities will be studied in the Project.

11. Result of the Consultation with the Recipient Government on the Environmental and Social Considerations including Roles and Responsibilities

The Detailed Planning Survey Team explains that the Study shall comply with the national laws and guidelines and the “JICA Guidelines for Environmental and Social Considerations (2010)”. Both parties agree on the compliance to ensure that appropriate considerations shall be implemented for the environmental and social impacts expected by the Project implementation.

The Team also explains that a Strategic Environmental Assessment (SEA) shall be conducted in the Study as a master plan study, and it shall involve related stakeholders.

12. Terms of Reference for the Environmental and Social Considerations

Both sides agreed that the Project should include a Terms of Reference (TOR) for Environmental and Social Considerations including Strategic Environmental Assessment (SEA) in line with the “JICA Guideline for Environmental and Social Considerations (April 2010)” (hereinafter referred to as “JICA Guidelines”) as outlined below;

- (1) Review of existing development policies, plans, projects, studies, and public private investment;
- (2) Identification and analysis of development constrains and factors promoting development;
- (3) Analysis of alternatives for achieving the goals of the Project;
- (4) Consideration of the contents of the Master Plan;
- (5) Conducting baseline surveys for Environmental and Social Considerations, including;
 - 1) Laws, regulations, and standards related to environmental and social considerations (environmental impact assessment, resettlement, public participation, information disclosure, and others);
 - 2) SEA study reports conducted in Sri Lanka development projects, and other relevant information;
 - 3) Gaps between the JICA Guidelines and the legal framework of the Sri Lanka on environmental and social considerations;
 - 4) Review of relevant organizations responsible for implementation of projects and their roles on environmental and social considerations including Environmental Impact Assessment (EIA) and SEA;
- (6) Scoping on possible environmental and social impacts and its evaluation methods at the time of decision-making of the projects proposed by the Master Plan;
- (7) Prediction of likely impacts of the proposed projects under the Master Plan based on the scoping;
- (8) Evaluation of likely impacts of the plans and comparative analysis of alternative proposed plans, including the ‘without project’ option;
- (9) Examination of the mitigation measures (to be avoided, minimized, and compensated);
- (10) Examination of the monitoring methods (monitoring items, frequencies, and methods);
- (11) Support to hold stakeholder meetings;
- (12) Provisional scoping for prioritized projects; and
- (13) Perform other duties deemed necessary.

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