

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

Date: May 15, 2015

1. Full Title of the Project

Project for the Strategic Master Plan under Sewerage Sector

2. Type of the study (e.g. Master Plan, Feasibility Study, Detailed Design, etc.)

National Master Plan, Pre-Feasibility and Feasibility Studies

3. Categorization and its reason

3-1 Categorization

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

3-2 Reasons

(1) The project aims at formulating a National Sewerage Master Plan in Sri Lanka, and conducting Pre-Feasibility and Feasibility Studies; therefore, the project per se does not have any environmental and social impacts.

(2) According to the results of the preliminary scoping of this project, which is described in section 8 of this document, this project is classified as Category B because its potential adverse impacts on the environment and society are relatively small. The adverse impacts are site-specific, and in most cases, mitigation measures against the impacts can be taken.

(3) According to JICA’s “Guidelines for Environmental and Social Considerations, JICA, April 2010”¹, the negative impacts of this project on the natural environment and society are considered less adverse than the projects of Category A.

4. Agency or institution responsible for the implementation of the Project

The National Water Supply and Drainage Board (NWSDB) shall act as the counterpart and responsible agency to the project.

5. Outline of the Project (objectives, justification, location, proposed activities, and scope of the study)

5-1 Objectives

The objectives of the Study are as follows;

- (1) To formulate a National Sewerage Master Plan of Sri Lanka.
- (2) To carry out Pre-Feasibility Studies for the cities prioritized in the Master Plan.
- (3) To carry out Feasibility Studies for some cities, which are selected from the cities that pre-feasibility studies are conducted.
- (4) To conduct capacity development programme for sewerage sector.

¹ http://www.jica.go.jp/english/our_work/social_environmental/guideline/pdf/guideline100326.pdf

5-2 Justification

The project is expected to contribute to the improvement of living and hygienic environment of the country by formulating the National Sewerage Master Plan and conducting Pre-Feasibility and Feasibility Studies; which will be implemented by giving adequate attentions to the environmental and social considerations.

5-3 Location

The National Sewerage Master Plan will study all the cities in the country, which are categorized as Municipal Councils and Urban Councils. The Pre-Feasibility Studies will be conducted for around five cities, which are prioritized in the Master Plan. The Feasibility Study will be conducted for the cities (around two), which are selected from those that the Pre-Feasibility Studies are conducted.

5-4 Proposed activities

Proposed activities include formulation of the National Sewerage Master Plan and conducting Pre-Feasibility and Feasibility Studies for the selected cities of the country. The Project also proposed to conduct capacity development programme for sewerage sector.

5-5 Scope of the Project – Project Activities

The following activities will be conducted in the Project:

- 1) Formulation of National Sewerage Master Plan of Sri Lanka Including Both On-site and Off-site Sanitation
 - a) The following basic information is collected by reviewing available data and reports including the results of the data collection surveys conducted by JICA and NWSDB. The NWSDB will provide the relevant available data pertaining to NWSDB:
 - i) Relevant laws and regulations, organizations and financial situation of water environment, water resources, sewage and urban drainage
 - ii) Current water quality of public water body in Sri Lanka, such as in rivers, ground, lakes and ocean (refer to data owned by Central Environmental Authority and related organizations and/or collection of current data in some of the cities by JICA Experts with the assistance of NWSDB if needed)
 - iii) Status of operation and maintenance of the existing sewerage facilities, including those constructed by National Housing Development Authority and Board of Investment
 - iv) Status of organizational capacity of the sewerage sector of NWSDB
 - v) Projects of other donor agencies in sewerage sector
 - vi) Current situation and issues of the existing sanitation facilities, including regulations and actual implementation, desludging, collection and disposal of sludge from septic tanks. The field investigation and surveys are to be performed by JICA Experts with the assistance of NWSDB in order to have updated information on both on- and off-site facilities in some of the cities if needed.
 - vii) JICA Experts will carry out necessary field surveys to collect the data where the adequate existing data are not available as much as their time and budget allows.

- viii) Data to analyze affordability or demand for the sewer connections are to be collected by available data or conducting a household survey in the form of questionnaire or other alternative methodologies in some of the cities if needed.
- b) Literature reviews such as statistics data on the 64 Urban Councils and Municipal Councils in Sri Lanka as follows in order to set criteria from the viewpoint of securing transparency/accountability in the process of selecting priority cities:
- Population, population density
 - Water supply coverage ratio
 - Water resource for water supply
 - Piped water consumption amount,
 - Number of waterborne disease case
 - Distance to industrial estate, export processing zone, and other government national projects such as airport, harbour, etc.
 - Poverty Headcount Ratio
 - Status of river downstream of discharge point of sewage (if it is used for drinking water, irrigation, recreation and so on)
 - Whether sewage is discharged into upstream of intake point of water purification plant and closed water areas such as lake and bay
 - Water quality at water intake point
 - Number of bed for accommodations such as hotels and guest houses
 - Distance to protected area such as sanctuary, strict natural reserve, national park, etc.
 - Collection ratio of water tariff
 - Topography map with contour
- c) To establish criteria for selection of priority cities
- d) To select cities (around five) with priority according to the above-mentioned criteria
- e) To evaluate the quantitative improvement of water quality in public water body and public health improvement by the development sanitation and sewerage facilities
- f) To formulate a strategy to achieve national target in sewerage sector of the country including provision of recommendations in terms of technical, institutional and financial direction for future development
- g) To formulate a plan for institutional capacity development of the sewerage sector of NWSDB, such as plans for improving organizational structure, human resource development and others
- h) To formulate a plan for improving the sewerage sector of NWSDB in terms of financial aspects. This includes studies on possibility of introduction of private finance, modification of sewerage tariff and asset management.

2) Formulation of City Sewerage Master Plans

- a) To establish objectives, target area and year in the master plans
- b) To establish basic policy to develop sewerage systems, including on-site facilities
- c) To collect basic information necessary for construction of sewerage facilities in each city
- d) To review basic policy on planning and designing of the facilities
- e) To delineate sewerage service area
- f) To plan basic sewerage facilities, including treatment method, sewage treatment plant, disposal method/location and main sewer routes stage wise.
- g) To formulate financial plan for construction and O&M of the sewerage facilities
- h) To conduct study for environmental and social considerations, including a study of possible alternative options of the Master Plans based on the policy of strategic EIA
- i) To select projects with top priorities (around two cities) for Feasibility Studies

3) Feasibility Studies (FS)

- a) To conduct FS for formulating plans for construction of sewerage systems, including on-site facilities, for the above-mentioned projects with top priorities
- b) To conduct study for environmental and social considerations, including a study of possible alternative options of the selected project.
- c) To conduct stakeholders' meetings/ consultation.

4) Capacity Development of the Sewerage Sector

- a) Identify suitable institutional arrangement for sewerage operation and management
- b) Periodical information sharing
- c) Training programmes in Japan
- d) Workshops

6. Description of the Project Site

6-1 Location of the Cities to be studied in the National Sewerage Master Plan

Table 1 shows the cities to be studied in the National Sewerage Master Plan. There are three types of local government authorities in Sri Lanka, namely, Municipal Council (MC), Urban Council (UC) and Divisional Councils (*Pradeshiya Sabha*: PS). As of May 2015, there are 335 local government authorities, including 23 MCs, 41 UCs and 271 PSs. It was agreed by NWSDB and JICA at the time of the Detailed Planning Survey of this Project that the National Sewerage Master Plan would study all the MCs and UCs in the country. Figure 1 shows the location of the cities.

Table 1 List of the Cities to be studied in the National Sewerage Master Plan.

Province	District	MC/UC
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Province	District	MC/UC	
Western	Colombo	1. Colombo MC	
		2. Dehiwala-Mt. Lavinia MC	
		3. Sri Jayawardenapura Kotte MC	
		4. Kaduwela MC	
		5. Moratuwa MC	
		6. Kolonnawa UC	
		7. Seethawakapura UC	
		8. Maharagama UC	
		9. Boralesgamuwa UC	
		10. Kesbewa UC	
	Gampaha	11. Negombo MC	
		12. Gampaha MC	
		13. Wattala Mabile UC	
		14. Peilyagoda UC	
		15. Katunayake Seeduwa UC	
		16. Minuwangoda UC	
		17. Ja-Ela UC	
	Kalutara	18. Panadura UC	
		19. Horana UC	
		20. Kalutara UC	
		21. Beruwala UC	
North Western	Kurunegala	22. Kurunegala MC	
		23. Kuliypitiya UC	
	Puttalam	24. Puttalam UC	
		25. Chilaw UC	
		26. Kandy MC	
Central	Kandy	27. Wattegama UC	
		28. Kadugannawa UC	
		29. Gampola UC	
		30. Nawalapitiya UC	
		Matale	31. Matale MC
			32. Dambulla MC
	Nuwara Eliya	33. Nuwara Eliya MC	
		34. Hatton-Dickoya UC	
		35. Thalawakele-Lindula UC	
	Uva	Badulla	36. Haputale UC
37. Badulla MC			
38. Bandarawela MC			
Southern	Galle	39. Galle MC	
		40. Ambalangoda UC	
		41. Hikkaduwa UC	
	Matara	42. Matara MC	
		43. Weligama UC	
	Hambantota	44. Hambantota MC	
		45. Tangalle UC	
Sabaragamuwa	Rathnapura	46. Rathnapura MC	
		47. Balangoda UC	
		48. Embilipitiya UC	
	Kegalle	49. Kegalle UC	
North Central	Anuradhapura	50. Anuradhapura MC	
Northern	Jaffna	51. Jaffna MC	
		52. Point Pedro UC	
		53. Velvettithurai UC	
		54. Chavakachchery UC	
	Mannar	55. Mannar UC	
	Vavuniya	56. Vavuniya UC	
Eastern	Batticaloa	57. Batticaloa MC	
		58. Kathankudi UC	

Province	District	MC/UC
	Ampara	59. Eravur UC
		60. Kalmunai MC
		61. Akkarai pattu MC
		62. Ampara UC
	Trincomalee	63. Trincomalee UC
		64. Kenniya UC

6-2. Environmental and social condition

6-2-1 Environmental conditions of the Country²

(1) Geography

Sri Lanka is a tropical island located in the Indian Ocean off the southern tip of peninsular India, between 5°55'–9°51' N and 79°41'–81°54' E. It is a pear-shaped island of an area of 65,610 km² and consists of three peneplains: lowlands (<300 m above sea level), uplands (300–900 m above sea level) and highlands (>900 m above sea level).

(2) Climate

According to the distribution of rainfall, three major climatic zones have been recognized: dry (annual rainfall: <1,900 mm), wet (>2,500 mm) and intermediate (1,900–2,500 mm) zones.

The climate in Sri Lanka can be characterized in to 4 climate seasons as follows:³

(a) First Inter-monsoon Season - March – April

It rains heavily in the Southwestern and sometimes in hill country. The dry zones of the country do not receive rain in general in this season

(b) Southwest monsoon season - May – September

The Southwestern coastal area experiences heavy rains during this season, while other parts of the island have less rainfall and experience dry weather.

(c) Second Inter-monsoon season - October – November

Almost the entire island receives rain during this season.

(d) Northeast Monsoon season - December – February

During this period, the highest rainfall figures are recorded in the North, Eastern slopes of the hill country and the Eastern slopes and the minimum is in the Western coastal area during this period.

6-2-2 Social conditions

(1) Population and Population Density

Table 2 shows population and population density of the cities to be studied in the National Sewerage Master Plan.

² Source: Profile on Environmental and Social Considerations in Sri Lanka, July 2012, JICA

³ Source: Website of Department of Meteorology of Sri Lanka. (Accessed on May 15, 2015)
http://www.meteo.gov.lk/index.php?option=com_content&view=article&id=106&Itemid=81



Figure 1 Location of the cities to be studied in the National Sewerage Master Plan

Table 2 Population and Population Density of the Cities to be Studied

Name of MC/ UC	Population	Area (km ²)	Population density (persons/km ²)	Name of MC/ UC	Population	Area (km ²)	Population density (persons/km ²)
1. Colombo MC	561,314	37	15,171	33. Nuwara Eliya MC	23,804	12	1,984
2. Dehiwala-Mt. Lavinia MC	184,468	21	8,784	34. Hatton-Dickoya UC	14,585		
3. Sri Jayawardenapura Kotte MC	107,925	17	6,349	35. Thalawakele-Lindula UC	4,691		
4. Kaduwela MC	252,041	87	2,897	36. Haputale UC	5,288		
5. Moratuwa MC	168,280	23	7,317	37. Badulla MC	42,237	10	4,224
6. Kolonnawa UC	60,044			38. Bandarawela MC	24,168	27	895
7. Seethawakapura UC	30,308			39. Galle MC	86,333	17	5,078
8. Maharagama UC	196,423			40. Ambalangoda UC	19,990		
9. Boralessgamuwa UC	60,110			41. Hikkaduwa UC	27,075		
10. Kesbewa UC	185,122			42. Matara MC	74,193	13	5,707
11. Negombo MC	142,449	31	4,595	43. Weligama UC	22,377		
12. Gampaha MC	62,335	38	1,640	44. Hambantota MC	23,236	83	280
13. Wattala Mabile UC	28,031			45. Tangalle UC	8,473		
14. Peilyagoda UC	27,736			46. Rathnapura MC	47,105	20	2,355
15. Katunayake Seeduwa UC	60,915			47. Balangoda UC	16,510		
16. Minuwangoda UC	7,523			48. Embilipitiya UC	36,712		
17. Ja-Ela UC	31,232			49. Kegalle UC	15,993		
18. Panadura UC	30,069			50. Anuradhapura MC	50,595	36	1,405
19. Horana UC	9,550			51. Jaffna MC	80,829	20	4,041
20. Kalutara UC	32,417			52. Point Pedro UC	12,334		
21. Beruwala UC	37,793			53. Velvetthurai UC	8,283		
22. Kurunegala MC	24,833	11	2,258	54. Chavakachchery UC	16,129		
23. Kuliypitiya UC	5,509			55. Mannar UC	24,417		
24. Puttalam UC	45,511			56. Vavuniya UC	34,816		
25. Chilaw UC	21,441			57. Batticaloa MC	86,227	75	1,150
26. Kandy MC	98,828	27	3,660	58. Kathankudi UC	40,356		
27. Wattagama UC	8,157			59. Eravur UC	24,643		
28. Kadugannawa UC	12,654			60. Kalmunai MC	99,893	23	4,343
29. Gampola UC	37,871			61. Akkaraipattu MC	30,934	7	4,419
30. Nawalapitiya UC	13,338			62. Ampara UC	22,511		
31. Matale MC	36,462	9	4,051	63. Trincomalee UC	48,351		
32. Dambulla MC	23,814	54	441	64. Kenniya UC	36,772		

Note: Areas of Urban Councils were not available.

Source: Department of Census and Statistics, Sri Lanka

(2) Issues on Living and Hygienic Environment

The amount of sewerage has been rapidly increasing in the country along with the expansion of coverage area of water supply and corresponding increase of water consumption. However, sewerage coverage is only 2.5 per cent of the population in 2009.

The cities to be studied in the National Sewerage Master Plan do not have modern sewerage systems. Most of the existing on-site sanitation facilities do not function properly, and there are some houses without proper sanitation facilities. As a result, water bodies in and around the cities, such as rivers, canals, lakes, irrigation tanks, are deteriorating in quality and thus are causing hazards to public health, sanitation and living environment of the residents. Increase of population density and urbanization of the cities also worsen the problem.

Sri Lanka has eight World Heritage sites designated by UNESCO, which need conservation and protection. There are high degrees of bio diversity among different groups of fauna and flora, including a high proportion of endemic species. The country has established networks of protected areas to conserve the natural resources by designating conservation forests, reserved forests, national parks, nature reserves and others. These heritage sites and protected areas are important properties of the country to hand down the human history and natural resources to the next generation and also attract a lot of domestic and foreign tourists. The above-mentioned water pollution and deterioration of environment is causing adverse impact on some places of the heritage sites and protected areas.

7. Legal Framework of Environmental and Social Considerations

7-1 Laws, regulations and standards related to environmental and social issues including requirements and procedures of Environmental Impact Assessment (EIA), stakeholder

participation, and information disclosure.

7-1-1 Laws, regulations and standards related to environmental and social considerations

Table 3 shows the key environmental regulations of the country.

Table 3 Major Laws of Environment Protection of Sri Lanka

No.	Name of legislation	Year
1	Forest Ordinance	1907
2	Fauna and Flora Protection Ordinance	1937
3	Mines and Minerals Act	1973
4	National Water Supply and Drainage Board Law	1974
5	National Environmental Act	1980
6	Coast Conservation Act	1981
7	National Aquatic Resources Research and Development Agency Act	1981
8	National Heritage Wilderness Act	1987

Prior to 1980, there was no overarching legislation to regulate pollution from all sources, and various agencies addressed issues pertaining to their sectors according to sector-specific laws. In 1980, the National Environmental Act (NEA) was enforced to protect and manage the environment as a whole. This act is an umbrella law to address variety of environmental issues.

The initial provisions of the Act focused on ‘environmental management’; with very little enforcement power vested in the implementation agency. In 1988, the Act was amended to expand its constraint to (1) ‘environmental protection’, (2) ‘environmental quality’ and (3) ‘approval of projects’. While, in 1988, the provisions on environmental protection applied to all activities, that are, discharging, emitting or depositing waste into the environment and causing pollution, subsequent amendment in 2000 limited these provisions only to listed ‘prescribed activities’. The amendment in 2005 increased fines for violations. (Source: Profile on Environmental and Social Considerations in Sri Lanka, July 2012, JICA)

7-1-2 Requirements and procedures of Environmental Impact Assessment (EIA)

(1) Requirements of EIA

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 Central Environmental Authority (CEA) was assigned the regulatory functions. Part IV C of the amendment act mandated that all ‘prescribed’ development projects are required to be subjected to an EIA. Only large-scale development projects that are likely to have significant impacts on the environment are listed as prescribed projects. Projects in environmentally sensitive areas are also required to undergo EIA, irrespective of their magnitude.

“Pipelines” which are listed in number fourteen of the list of the prescribed projects for EIA means the projects laying gas and liquid (excluding water) transfer pipelines of exceeding 1 km length. Therefore, projects for construction of sewerage facilities are required EIA in most of the cases.

(2) Procedures of EIA

Responsibility for the review of environmental impacts is delegated to various government bodies depending on the nature of the project. Such government agencies are referred to as the Project Approving Agency (PAA). According to CEA, PAA for projects of constructing public sewerage facility is CEA in most of the cases.

There are several stages in an EIA as follows:

Step 1: Request for Preliminary Information

- The project proponent provides preliminary information to the PAA.

Step 2: Scoping

- Scoping is conducted by the PAA to determine the environmental impacts in a preliminary fashion. First, the PAA solicits the participation of those affected, then queries the project proponent for clarifications, and decides whether an EIA is required or whether the less comprehensive Initial Environmental Examination (IEE) would do. It will establish the 'Terms of Reference' for either of these options.

Step 3: Report Preparation

- An EIA or IEE report in any of the national languages is prepared and submitted by the project proponent. If there is a request from the public, these reports are to be translated into any of the other two national languages. The PAA is required to announce in national newspapers of all three languages that the particular EIA is available for inspection by the public.

Step 4: Commencing Assessment Process

- The PAA and the CEA review the EIA report. Queries can be directed to the project proponent through the PAA. The public is allowed to submit queries and observations for 30 working days, as explained below in Section 5.3.6. If the project is controversial, the PAA and CEA may decide to have public hearings.
- For review of the public comments, the PAA may request the project proponent for clarifications and further details.

Step 5: Decision Making

- The PAA, in concurrence with the CEA, decides whether the project is to be approved or not. If approved, the PAA, in concurrence with the CEA, will decide the necessary conditions that the project should fulfill.
- If the project is rejected, an appeal by the project proponent is allowed.
- If the project is approved, the project proponent and the PAA should monitor the possible environmental characteristics which could be affected.

Step 6: Monitoring

- The EIA process continues throughout the project implementation duration by way of monitoring of environmental conditions and checking the compliance to the approval conditions.

Figure 2 shows the procedure of approval of EIA in Sri Lanka.

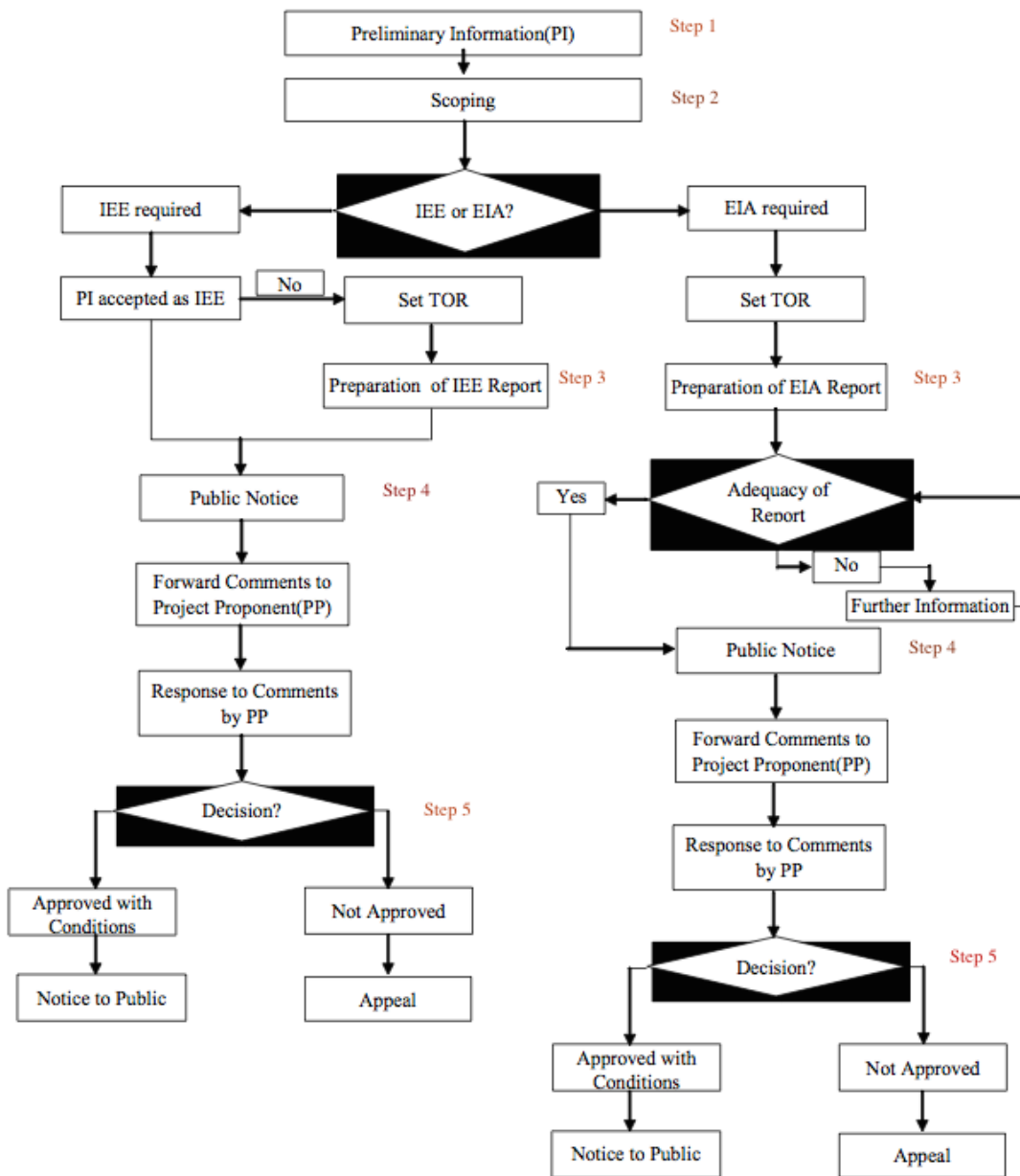


Figure 2 Procedures of Approvals of Environmental Impact Assessment in Sri Lanka

Source: Guidance for Implementing the Environmental Impact Assessment Process – No. 1: A General Guide for Project Approving Agencies (CEA: 1998)

JICA’s guideline for Environmental and Social Consideration, recommends having 120 days for the period for submission of comments to the EIA reports from the public, while it is 30 days in the Sri Lankan regulations. JICA’s guideline also recommends all the projects publishing project information while it is only necessary for the projects required EIA in the Sri Lankan regulations.

7-1-3 Procedures of Land Acquisition and Involuntary Resettlement

The process and agencies in-charge for land acquisition and resettlement, which is based on the Land Acquisition Act, No. 9, is shown in Table 4.

Table 4 Process and agencies in-charge for land acquisition and resettlement

Activities	Agencies in-charge
1. Preparation and submission of land acquisition proposal	Project executing/ implementing agency
2. Issuance of order to survey (LAA S.2)	Ministry of Land
3. Preparation and posting of notices (S.2)	Divisional Secretary
4. Preparation of advance tracing	Survey Department
5. Issuances of order to acquire the land (S.4)	Ministry of Land
6. Section 04 posting and publication of notices (S.4)	Divisional Secretary, Government Press
7. Objection inquiries	Project executing/ implementing agency
8. Gazette notification (S.5)	Divisional Secretary, Department of Government Printing
9. Preparation of preliminary plan	Survey Department
10. Gazette notification (S.7)	Divisional Secretary
11. Inquiries (S.9)	Divisional Secretary
12. Decision (S.10-1)	Divisional Secretary
13. Valuation	Valuation Department
14. Awards (S.17)	Divisional Secretary
15. Payment of compensations	Divisional Secretary
16. Order (S.38a)	Ministry of Land, Department of Government Printing
17. Provision (S.38a)	Ministry of Land, Department of Government Printing
18. Taking over the vacant possession	Divisional Secretary, Project executing/ implementing agency
19. Registration of land	Divisional Secretary, Project executing/ implementing agency

Source: Social Assistant and Involuntary Resettlement Compliance Manual, Road Development Authority of Sri Lanka, 2009

The National Involuntary Resettlement Policy (NIRP) came into effect through cabinet approval in 2000. The policy focuses on involuntary resettlement related to public and private sector development projects to ensure that people are not negatively affected and are able to restore their living standards and integrate into their new environments.

JICA's guideline for Environmental and Social Consideration 2010, recommends the following processes in land acquisition and involuntary resettlement: preparation of Resettlement Action Plans (RAP), compensation for non-title holders, calculation of amount of compensation by replacement cost, capacity building schemes and provision of grievance procedure, which are not always mandatory in the Land Acquisition Act of Sri Lanka.

7-1-4 Stakeholder participation and information disclosure

EIA process in Sri Lanka involves the public at the "Step 4" mentioned in the Figure 2, by opening the assessment report for public comments. This is a mandatory requirement in the cases of EIA, whereas in the cases of IEE it is not needed. The NEA specifies that a notice of availability of EIA report for public review must be inserted in one Sinhala, Tamil, and English newspapers, as well as the Government Gazette. The document is open for public review for thirty days. Upon receipt of the public comments, the PAA decides whether the case warrants public hearing. The public comments received during the 30-day period are sent to the project proponent for their responses. The possible responses by the project proponent may include: modification of alternatives and mitigation measures; development of new alternatives; supplement, improvement or modification of the EIA analysis; making factual corrections and/or explaining why the comments are not justifiable. The final statement of EIA should include all substantive comments received on the draft EIA report.

7-2 Relative agencies and institution

The main agencies in charge of environmental issues of the country are, Central Environmental

Authority (CEA), Department of Coast Conservation, Department of Wildlife Conservation and others. The main agencies involve in land acquisition and involuntary resettlements are, Ministry of Land, Survey Department, Divisional Secretaries and Valuation Department.

8. Provisional Scoping (types and magnitudes of possible adverse impacts and mitigation measures)

8-1 Types and magnitudes of possible impacts

Provisional scoping of the environmental and social Impact assessment was carried out based on possible activities as a result of formulation of the National Sewerage Master Plan, and pre-feasibility and feasibility studies for the priority cities. The aim of the National Sewerage Master Plan and pre-feasibility and feasibility studies are, (i) taking appropriate measures for treatment of sewerage, and (ii) mitigating pollution of surrounding environment of the country.

Possible activities to be implemented as a result of the Master Plan and the studies were categorized as follows, i.e. (i) construction of sewerage treatment plants and pump houses, (ii) construction or rehabilitation of sewerage pipe networks and (iii) construction or rehabilitation of on-site sanitary facilities, including septic tanks and sludge treatment plants, and conducted provisional scoping of environmental and social impacts

Categories/parameters to evaluate were determined from the JICA's Guidelines for Environmental and Social Considerations 2010, and possible adverse impacts are examined at the three project stages: (i) planning stage, (ii) construction stage and (iii) operation stages.

Results of provisional scoping are shown in Table 5-7. The information for the cities to be studied in the National Sewerage Master Plan has not been collected. Cities that the pre-feasibility and feasibility studies conducted and sewerage projects, both off-site and on-site, which will be implemented as a result of this studies, also have not selected yet. Therefore, there is no information about the details of the sewerage projects including method of sewerage treatment system, size of the land needed for construction of the sewage treatment plants, need of land acquisition and involuntary resettlement and contents of the on-site facilities to be constructed. As a result, the provisional scoping was conducted in a tentative manner in this report. It is necessary to conduct the scoping again in due course to re-evaluate the Project and make necessary arrangement to minimize or avoid negative impacts to be created.

The following criteria were used for the scoring of the impact:

A-: Significant negative impact is expected.

B-: Negative impact is expected to some extent.

C: Extent of impact is unknown. (Examination is needed. Impacts may become clear as study progresses.)

D: No impact is expected.

N/A: Not Applicable

(1) Results of Provisional Scoping: Construction of Sewerage Treatment Plants and Pump Houses

Impact created by construction of sewerage treatment plans as a result of this Project was analyzed and evaluated as shown in Table 5.

Table 5 Results of Provisional Scoping: Construction of Sewerage Treatment Plants

category	No.	Evaluation Parameters	Rating		
			Planning Stage	Construction Stage	Operation Stage
Social Environment	1	Involuntary Resettlement	D	B-	C
	2	Local economy such as employment and livelihood, etc.	D	B-	C
	3	Land use and utilization of local resources	D	B-	C
	4	Social institutions such as social infrastructure and local decision-making institutions	D	C	C
	5	Existing social infrastructures and services	D	B-	C
	6	The poor, indigenous and ethnic people	D	B-	C
	7	Misdistribution of benefit and damage	D	D	C
	8	Cultural heritage	D	C	D
	9	Local conflict of interests	D	C	D
	10	Water Rights and Rights of Common	D	D	D
	11	Sanitation	D	D	D
	12	Hazards (Risk) , Infectious diseases such as HIV/AIDS	D	D	D
Natural Environment	13	Topography and Geographical features	D	C	D
	14	Groundwater	D	C	D
	15	Soil Erosion	D	D	D
	16	Hydrological Situation	D	D	D
	17	Coastal Zone, (Mangroves, Coral reefs, Tidal flats, etc.)	D	D	D
	18	Flora, Fauna and Biodiversity	D	C	C
	19	Meteorology	D	D	D
	20	Landscape	D	C	C
	21	Global Warming	D	D	D
Pollution	22	Air Pollution	D	B-	D
	23	Water Pollution	D	B-	D
	24	Soil Contamination	D	D	D
	25	Waste	D	B-	B-
	26	Noise and Vibration	D	B-	D
	27	Ground Subsidence	D	D	D
	28	Offensive Odor	D	D	B-
	29	Bottom sediment	D	D	D
	30	Accidents	D	B-	D

(2) Results of Provisional Scoping: Construction or Rehabilitation of Sewerage Pipe Networks

Impact created by construction of sewerage networks as a result of this Project was analyzed and evaluated as shows in Table 6.

Table 6 : Results of Provisional Scoping: Construction of Sewerage Networks

category	No.	Evaluation Parameters	Rating		
			Planning Stage	Construction Stage	Operation Stage
Social Environment	1	Involuntary Resettlement	D	B-	C
	2	Local economy such as employment and livelihood, etc.	D	B-	C
	3	Land use and utilization of local resources	D	B-	C
	4	Social institutions such as social infrastructure and local decision-making institutions	D	C	C
	5	Existing social infrastructures and services	D	B-	C
	6	The poor, indigenous and ethnic people	D	B-	C
	7	Misdistribution of benefit and damage	D	D	C
	8	Cultural heritage	D	C	D
	9	Local conflict of interests	D	C	D
	10	Water Rights and Rights of Common	D	D	D
	11	Sanitation	D	D	D
	12	Hazards (Risk) , Infectious diseases such as HIV/AIDS	D	D	D
Natural Environment	13	Topography and Geographical features	D	C	D
	14	Groundwater	D	C	D
	15	Soil Erosion	D	D	D
	16	Hydrological Situation	D	D	D
	17	Coastal Zone, (Mangroves, Coral reefs, Tidal flats, etc.)	D	D	D
	18	Flora, Fauna and Biodiversity	D	C	C
	19	Meteorology	D	D	D
	20	Landscape	D	C	C
	21	Global Warming	D	D	D
Pollution	22	Air Pollution	D	B-	D
	23	Water Pollution	D	B-	D
	24	Soil Contamination	D	D	D
	25	Waste	D	B-	B-
	26	Noise and Vibration	D	B-	D
	27	Ground Subsidence	D	D	D
	28	Offensive Odor	D	B-	B-
	29	Bottom sediment	D	D	D
	30	Accidents	D	B-	D

(3) Results of Provisional Scoping: Construction of Sanitary Facilities (toilets)

Impact created by construction of sanitary facilities, such as private and common toilets for households in under-served areas as a result of this Project was analyzed and evaluated as shows in Table 7.

Table 7 Results of Provisional Scoping: Construction of Sanitary Facilities

category	No.	Evaluation Parameters	Rating		
			Planning Stage	Construction Stage	Operation Stage
Social Environment	1	Involuntary Resettlement	D	C	C
	2	Local economy such as employment and livelihood, etc.	D	C	C
	3	Land use and utilization of local resources	D	C	C
	4	Social institutions such as social infrastructure and local decision-making institutions	D	C	D
	5	Existing social infrastructures and services	D	C	D
	6	The poor, indigenous and ethnic people	D	D	D
	7	Misdistribution of benefit and damage	D	D	C
	8	Cultural heritage	D	C	D
	9	Local conflict of interests	D	C	D
	10	Water Rights and Rights of Common	D	D	D
	11	Sanitation	D	D	D
	12	Hazards (Risk) , Infectious diseases such as HIV/AIDS	D	D	D
Natural Environment	13	Topography and Geographical features	D	D	D
	14	Groundwater	D	C	B-
	15	Soil Erosion	D	D	D
	16	Hydrological Situation	D	C	B-
	17	Coastal Zone, (Mangroves, Coral reefs, Tidal flats, etc.)	D	C	B-
	18	Flora, Fauna and Biodiversity	D	C	D
	19	Meteorology	D	D	D
	20	Landscape	D	D	D
	21	Global Warming	D	D	D
Pollution	22	Air Pollution	D	B-	D
	23	Water Pollution	D	B-	B-
	24	Soil Contamination	D	D	B-
	25	Waste	D	B-	D
	26	Noise and Vibration	D	B-	D
	27	Ground Subsidence	D	D	D
	28	Offensive Odor	D	D	B-
	29	Bottom sediment	D	D	D
	30	Accidents	D	B-	D

8-2 Mitigation measures

Detailed mitigation plans and measures will be elaborated on through the implementation of the Master Plan study project.

9. Alternatives to the project activities including ‘without project’ option

(1) Without Project Option

Consideration of “without project option” means a “Do nothing option”. As for formulation of National Sewerage Master Plan, this means JICA and NWSDB will not formulate a master plan and will not take any action with regard to the sewerage treatment. Issues and problems of water pollution and deterioration of living environment, which was described in section 6-2-2 in this report, are the results of absence or improper sewerage treatment facilities. The problem will be worsened if no proper measures would be taken since amount of sewerage and population density will be increased further in future.

As a conclusion, the National Sewerage Master should be considered to plan and carry out sewerage project in accordance with the priority and urgency for solving the above-mentioned problems.

At the time of selecting the cities for pre-feasibility studies, “without project option” or alternative activities should be considered by accounting the magnitude of adverse environmental and social impact to each city. For example, an alternative city should be considered in case a large number of involuntary resettlement seems to be unavoidable to secure a land for a treatment plant in a city.

At the time of feasibility study, alternative or optional activities should be considered to minimize adverse environmental and social impact to be created by the projects, by carefully examining method of treatment, land for treatment plant, number of involuntary resettlement, service area and others.

(2) Consideration of alternative/optional activities in sewerage treatment systems

Alternative or optional activities will be proposed as a result of the National Sewerage Master Plan and at the time of pre-feasibility and feasibility studies.

10. Result of the consultation with recipient government on environmental and social consideration including roles and responsibilities

NWSDB (implementing agency) and the Ministry of Urban Development, Water Supply and Drainage and Department of External Resources understood and agreed with JICA on 24 April 2015 to abide by JICA Guidelines for Environmental and Social Considerations in order to ensure that appropriate considerations will be made for environmental and social impacts of the Project. This statement of understanding is described in the section of “10. Environmental and Social Considerations” in the Record of Discussions (R/D).

11. Terms of Reference for Environmental and Social Considerations

(1) Initial Environmental Examination (IEE) and Environment Impact Assessment (EIA) reports

The implementation agency and the counterpart of the Project and future project proponent/project owner of the proposed sewerage projects as a result of the Plan and the studies, is NWSDB. The project owner, NWSDB, agreed to prepare Initial Environmental Examination (IEE) reports, during the pre-feasibility studies for the prioritized cities. NWSDB also agreed to prepare Environment Impact Assessment (EIA) reports for the selected cities during the feasibility studies. IEE and EIA reports are prepared in order to comply with Sri Lankan environment-related laws and regulations, and the “*Guidelines for Environmental and Social Considerations*” of JICA (2010). JICA will support NWSDB in the preparation of the IEE and EIA.

(2) Consideration

Evaluation and reporting of IEE and EIA should comply with the following regulations and guidelines:

- The National Environmental (Amendment) Act, No. 56 of 1988 of Sri Lanka (originally enacted in 1980)
- Guidelines for Environmental and Social Considerations, JICA, April 2010

(3) Main Study Areas and Tasks of IEE/ EIA

1. Introduction; project overview, objectives of IEE/ EIA report, methodologies and scope of study.
2. Legal frameworks; laws, sub-decree and policies related to project.

3. Project Description; background, project site, project type/scope, time and schedule, action plan of work, etc.
4. Description of Environmental Resources; natural environmental resources, physical resources, biological resources, socio-economic resources.
5. Public Participation - introduction, conducting the public consultation, conclusion of public consultation.
6. Environmental Impacts and Mitigation Measures - negative impacts during the project pre-operation, operation and abundant with mitigation measures, positive impacts.
7. Environmental Management Plan (EMP) - summary of negative impacts and mitigation measures, trainings to be provided, monitoring schedule during construction and operation and closure phases.
8. Economic Analyses and Environmental Value.
9. Conclusions and Recommendation.

(3) Reporting

IEE and EIA reports on sewerage projects to be proposed.

12. Other relevant information

None. (Available on request)

