

Environmental and Social Considerations in Basic Design Survey (Technical Cooperation)

1. Full title of the Project

Project for Planning and Improvement of Sustainable Waste Management in Greater Abidjan

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

Basic Design

3. Categorization and its reason

(1) Category: B

(2) Reason

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 SWM Master Plan will consider including the results of the World Bank's ongoing project to develop a final disposal site and waste transfer facilities, etc. However, these components will be determined after confirming and examining the progress and contents of the environmental and social considerations study and environmental impact assessment conducted by World Bank and Ministry of Hydraulics, Sanitation and Cleanliness (Ministère de l'Hydraulique, de l'Assainissement et de la Salubrité: MINHAS), the C/P for this project.

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

Sanitation and Waste Management General Director (Direction Générale de l'Assainissement et de la Salubrité: DGAS) of MINHAS and the National Waste Management Agency (Agence Nationale de Gestion des Déchets: ANAGED)

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

5.1 Objectives

Comprehensive solid waste management activities including waste generation reduction, reuse, and recycling are initiated in the Greater Abidjan as part of the sustainable Solid Waste Management Master Plan.

5.2 Justification

In Cote d'Ivoire, in the context of rapid urban development and population growth supported by strong economic growth in recent years, the most recent "National Development Plan (PND2021-2025)" positions sustainable urban development as a priority issue and shows a strong commitment to urban and social infrastructure development.

In particular, Abidjan, the country's central city where 20% of the total population is concentrated and the population is growing faster than the average for the country as a whole, resulting in a rapid increase in waste generation due to rapid population growth and urbanization.

Against this backdrop, with regard to waste, the amount of waste generated in the Greater Abidjan Area (GAA), which includes the center of Abidjan and its surroundings, is increasing year by year and at present 1.8 million tons/year are generated. These wastes are collected and transported by private contractors under the management of ANAGED, and the waste collection rate in the center of Abidjan is estimated to reach approximately 90%.

Given that the majority of sub-Saharan Africa's waste collection rate is less than 55%, Abidjan's initial waste management efforts to improve public health by ensuring adequate collection and transportation systems are working. On the other hand, in order to cope with the increasing volume of waste, it is necessary to address new issues such as the need to convert waste into resources and valuable resources, as well as to deal with the shortage of capacity at final disposal facilities.

At present, the legislation necessary for waste reduction and the establishment of a resource recycling system, such as sorting and the 3Rs (Reduce/Reuse/Recycle), has not yet been developed. Therefore, there is a need to develop a plan for sustainable waste management at the city level, based on an overall picture of waste management in the country.

5.3 Location

Greater Abidjan in the Republic of Cote d'Ivoire

5.4 Proposed activities

Proposed activities for each output, which is "Scope of the Project" described in 5.5, are as follows.

1-1 Develop a survey plan for current situation of solid waste management.

1-2 Organize a survey team consisting of MINHAS and ANAGED staff.

- 1-3 Develop guidelines for waste characterization study (Waste characterization, waste quantity, waste quality, waste calorie etc.) and conduct practical training.
- 1-4 Carry out a waste characterization study.
- 1-5 Collect and analyze existing data and information on current projects related to waste management.
- 1-6 Conduct survey on the current status of waste management (waste flow, institutional analysis, financial analysis, capacity assessment of implementing agencies, public awareness, etc.) and participatory workshops.
- 1-7 Analyze survey results and compile analytical results.
- 2-1 Develop mid-term and long-term goals for Solid Waste Management Master Plan through workshops with policy planners.
- 2-2 Draft Solid Waste Management Master Plan based on the results of current status analysis and forecasts.
- 2-3 Evaluate environmental and social impacts based on the Solid Waste Management Master Plan.
- 2-4 Hold a meeting to exchange opinions with relevant government agencies and private operators
- 2-5 Formulate a tentative version of the Solid Waste Management Master Plan reflecting comments from stakeholders.
- 2-6 Integrate the results and lessons learned obtained through pilot project in Output 3 into the Solid Waste Management Master Plan and formulate the final version.
- 2-7 Organize approval workshops for the Solid Waste Management Master Plan with project stakeholders.
- 2-8 Share lessons learned from the Solid Waste Management Master Plan and Pilot Projects through ACCP and other platforms.
- 3-1 Develop a Pilot Project plan for communes in the Greater Abidjan in accordance with the provisional Solid Waste Management Master Plan.
- 3-2 Develop a human resource development plan for waste management (planning, financial analysis, collection and transportation, contract management, private sector collaboration, generation control, reuse, recycling, and public awareness)
- 3-3 Prepare waste management personnel training materials, manuals, and SOPs (planning, financial analysis, collection and transportation, contract management, private-sector cooperation, generation control, reuse, recycling, and public awareness)
- 3-4 Organize waste management human resource training seminars and workshops
- 3-5 Develop human resources by introducing Japanese experience and technology

through training in Japan.

3-6 Implement Pilot Projects in communes of the Greater Abidjan.

3-7 Conduct monitoring in pilot project areas and summarize the results and issues.

3-8 Develop and implement monitoring and evaluation plan for the Solid Waste Management Master Plan.

4-1 Prepare a plan for effective implementation of resident awareness.

4-2 Conduct training for people concerned with public awareness.

4-3 Develop public awareness materials (Brochure, radio, video, SNS, etc.)

4-4 Hold awareness-raising seminars for the Greater Abidjan.

4-5 Document lessons learned and issues related to public awareness raising activities and share them with other parties concerned.

5-1 Provide capacity-building training for the survey team through On-the-Job training.

5-2 Organize training courses for counterparts in the development of Solid Waste Management Master Plan.

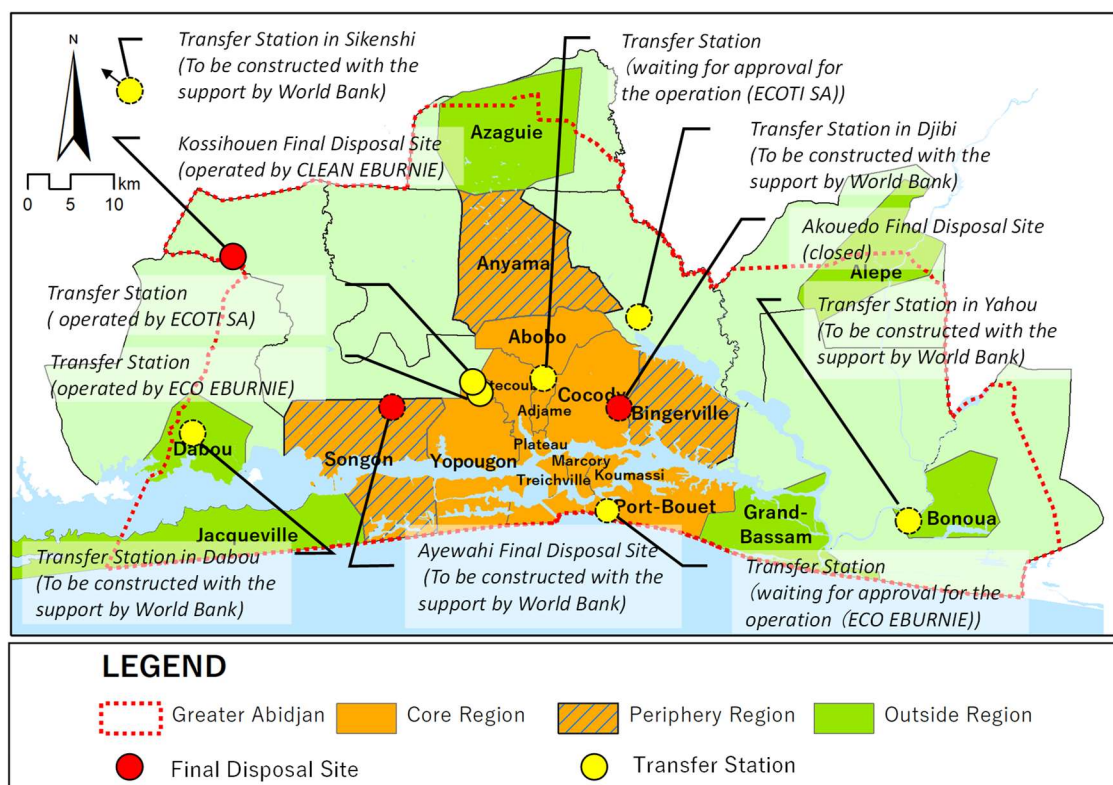
5.5 Scope of the Project

- (1) The current situation of waste management in the Greater Abidjan is studied.
- (2) “Waste Management Master Plan” is developed for the Greater Abidjan.
- (3) Pilot projects are implemented based on the Solid Waste Management Master Plan.
- (4) Public awareness of trash collection and 3R activities is strengthened in the Greater Abidjan.
- (5) Capacity of C/Ps to develop Waste Management Master Plans is strengthened.

6. Description of the project site (map, environmental and social condition, current issues, etc.)

6.1 Location Map

Greater Abidjan is the area bounded by the red dotted line shown in the following figure.



6.2 Environmental and social conditions

Environmental conditions

There are 255 protected areas in Cote d'Ivoire and 9 protected areas are located in Greater Abidjan (Banco National Park, Dahliafleur Natural Reserve, Anguededou Classified Forest, Audoin Classified Forest, (CIV) No. 66 Classified Forest, (CIV) No. 71 Designated Forest, (CIV) No. 74 Designated Forest, Kokoh Designated Forest, and Nguechie Designated Forest).

Also, there are 17 key biodiversity areas (KBAs) in Cote d'Ivoire and 2 KBAs are located in Greater Abidjan (Banco National Park (Global KBA Criteria: A1e) and Adiopodoume (Global KBA Criteria: A1e))

Moreover, there are 14 important bird and biodiversity areas (IBs) in Cote d'Ivoire and a part of 1 area is located in Greater Abidjan (Yapo and Mambo Forest Reserves (IBA Criteria: A1, A2, A3 (2001)))

Social conditions

With a population of approximately 27 million (World Bank, 2021) and a gross domestic product (GDP) of USD 69.76 billion, Cote d'Ivoire is a core country, accounting for approximately 40% of the economy of the West African Economic Community. In particular, Abidjan, the country's central city, is a hub city with a well-developed transportation network of ports, railroads, and roads, where 20% of the total population is concentrated and the population is growing faster than the average for the country as a whole, resulting in a rapid increase in waste generation due to rapid population growth and urbanization.

Against this backdrop, with regard to waste, the amount of waste generated in GAA, which includes the center of Abidjan and its surroundings, is increasing year by year at a rate of about 6%, and at present 1.8 million tons/year are generated.

6.3 Current issues

Waste management in the Greater Abidjan is managed by ANAGED, with collection and transportation contracted out to several private companies, and the waste collection rate in the central area of GAA is estimated to reach approximately 80-90%. On the other hand, in the suburban areas of GAA, the waste collection rate is estimated to be about 56%, a large disparity from the center of the city, indicating the need for improvement of basic waste management.

Under these circumstances, in order to cope with the increasing volume of waste, it is necessary to address new issues such as waste reduction and recycling, including sorting and the 3Rs (Reduce/Reuse/Recycle), in addition to dealing with the shortage of capacity at final disposal facilities.

7. Legal Framework of Environmental and Social Consideration

7.1 Laws, Regulations and Relevant agencies and institutions

Law No. 96-766 of 3 October 1996 (Environmental Code): Law No. 96-766 of 3 October 1996 establishes the general framework for the protection of fundamental elements of the environment, requiring the conduct of an environmental assessment for all major development projects (Art.39) and a structure for implementing the national ESA (Environmental and Social Assessment) procedure.

Decree No. 96-894 of 8 November 1996: ESA procedure is defined by Decree 96-894 of 8 November 1996 which determines the rules and procedures applicable to studies on the environmental impact of development projects and which also defines

the different project categories, the EIA content and the requirement to hold public consultations.

Organizations related to the environment are the Ministry of Environment and Development (Ministère de l'Environnement et la Développementurable, hereinafter referred to as "MINEDD"), the National Environment Agency (Agence Nationale de l'Environnement, hereinafter referred to as "ANDE") and the Cote d'Ivoire National Pollution Control Center (Centre Ivoirien Antipollution, hereinafter referred to as "CIAPOL"). An outline of these organizations is shown below.

Organization	Outline
MINEDD	It is the agency in charge of Environment. It is the administrative ministry for ANDE and CIAPOL.
ANDE	ANDE is an organization under MINEDD, established under Decree No. 97-393 of 9 July 1997. It is in charge of environmental assessment and monitoring of development projects.
CIAPOL	CIAPOL is an organization under MINEDD, established under Decree No. 91-662 of 9 October 1991. It is responsible for the prevention of pollution from companies/vessels and equipment that cause pollution of the sea; and for the administration and enforcement of laws/regulations and international conventions relating to environmental protection.

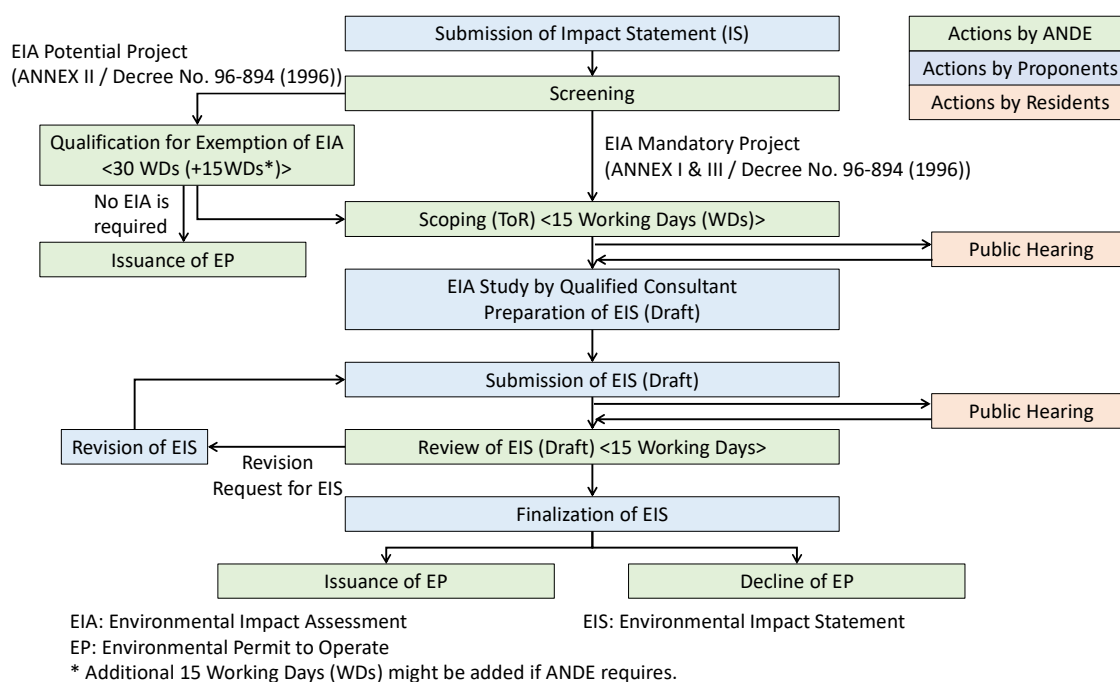
7.2 Procedures of SEA and EIA, stakeholder participation and information disclosure

EIA in Cote d'Ivoire is regulated in Decree No. 96-894 (November 8, 1996). The decree requires that "Environmental Permit to Operate (EP)" be obtained based on "Environment Impact Statement" to be submitted by consultants and results of public hearings, and EIA be conducted prior to the implementation of a project related to a development plan, etc. The EIA screening is conducted by ANDE and is classified into three categories (Annex I, II, and III). Facilities related to waste are classified under Annex I, which is an "activity with significant environmental impact" and is a project subject to EIA. In addition, Annex IV contains a sample EIA report. Moreover, in the regulations for Strategic Environmental Assessment (SEA) in Decree No. 2013-390 (2013), the necessity for cumulative impacts is indicated.

Type of Annex	Contents	Implementation of EIA
Annex I	<ul style="list-style-type: none"> • Agriculture (>999 ha) • Forest management (>999 ha) • Mining (oil, gas, minerals) • Energy (oil, gas, oil refining, geothermal power, thermal power) • Waste (waste disposal, landfill, wastewater treatment) • Food (fats and oils, processed foods, alcohol and soft drinks, syrups and sugar, meat products and processing, starch, fish processing, drinking water) • Chemicals (chemical products) • Metal processing (steel mills, scrap yards) 	Category of activities with significant impact on environment ➤ EIA is required

Type of Annex	Contents	Implementation of EIA
	<ul style="list-style-type: none"> Textile, leather, wood and paper products (pulp and cotton production, dyeing, etc.) Infrastructure projects (highways, railroads, airports of >2100 m, commercial ports, industrial parks, urban development, waterways, dams, pipelines, water treatment facilities) Others (cement plants, hotels with more than 150 beds, explosives factories) 	
Annex II	Projects with no impact on environment (projects other than Annex I and Annex III)	Category of activities with low impact on environment ➤ EIA is not required
Annex III	<ul style="list-style-type: none"> Protected areas and similar protected areas Wetlands and mangroves Scientific, cultural and tourist areas Environmentally sensitive areas Protected water areas International marine areas owned by the country 	Category of activities to be conducted in a site(s) in sensitive environment ➤ EIA is required

A flow chart of EIA procedures in Cote d'Ivoire is shown below.



Source: ANDE (partially modified by JICA)

As stated in the figure above, public hearing shall be conducted as a part of EIA procedure. Also, articles 13 and 14 of Decree No. 2013-390 (2013) stipulate that EIA of a project shall require that mitigation measures be considered with disclosure of information to public and exchange of opinions with public.

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

Item		Scoping				Reasons for Selection	
		1. Ayewahi Final Disposal Site	2. Transfer Station in Yahou	3. Transfer Station in Djibi	4. Transfer Station in Dabou		
Environmental Pollution							
1	Air Pollution	before/in Construction	✓	✓	✓	✓	With the operation of construction equipment and vehicles, deterioration of air quality due to exhaust gas and generation of dust and dirt are expected for a certain period of time.
		in Operation	✓	✓	✓	✓	There is potential for air pollution due to the operation of heavy equipment and the waste collection & transport vehicles, as well as anaerobic digestion at the final disposal site.
2	Water Pollution	before/in Construction	✓	✓	✓	✓	Increased wastewater load due to construction and land development is expected.
		in Operation	✓	△	△	△	Because leachate is generated at final disposal sites, there is concern about surface water and groundwater pollution if leachate is not treated properly.
3	Waste	before/in Construction	✓	✓	✓	✓	Construction waste and general waste are expected to be generated at the construction site.
		in Operation		△	△	△	Intermediate treatment facilities may generate treatment residues. (Confirmation of the existence of intermediate treatment facilities is required.)
4	Soil Contamination	before/in Construction		✓	✓	✓	There is a possibility of soil contamination due to oil spills from construction equipments.
		in Operation	✓	✓	✓	✓	Leachate can seep into the soil due to damage of the liner sheets at final disposal sites, which can cause soil contamination. If proper stormwater management and runoff prevention measures are not in place, rainwater, etc. containing oil may infiltrate into the soil.
5	Noise and Vibration	before/in Construction	✓	✓	✓	✓	Noise and vibration may be generated by the operation of construction equipment for construction.
		in Operation	△	✓	✓	✓	Noise may be generated from motors of equipment installed in each facility and waste collection and transportation vehicles.
6	Subsidence	before/in Construction	△				Ground subsidence is not expected in the construction stage of transfer stations. However, land subsidence is possible for the construction of the final disposal site, since large-scale land preparation, etc. will be conducted.

Item		Scoping				Reasons for Selection	
		1. Ayewahi Final Disposal Site	2. Transfer Station in Yahou	3. Transfer Station in Djibi	4. Transfer Station in Dabou		
		in Operation	△	△	△	△	If the facilities are located on soft ground, the weight of the deposited waste and/or equipment may cause ground subsidence. (Confirmation of the ground of the facilities is req
7	Bad Odor	before/in Construction					No odors are expected to be generated by the construction.
		in Operation	✓	✓	✓	✓	Intermediate treatment facilities (composting facilities, biogas facilities, etc.) and final disposal site that handle organic wastes may generate odors (hydrogen sulfide odor, etc.). (Confirmation of the existence of intermediate treatment facilities that handle organic wastes is required.)
8	Sediment	before/in Construction	✓	✓	✓	✓	In all projects, it is anticipated that runoff soil from land development and construction work will be deposited into rivers and other water bodies.
		in Operation	✓	△	△	△	There is concern about the impact on bottom sediments as treated water is discharged from the final disposal site.
Natural Environment							
9	Protected Area	before/in Construction	△	△	△	△	Confirmation of the presence of protected areas is required.
		in Operation					
10	Biodiversity	before/in Construction	✓	△	△	△	In the proposed new construction site, there is concern about ecological degradation due to land development and construction work.
		in Operation	△	△	△	△	There is a possibility of impact on the surrounding ecosystem during the project operation.
11	Lakes, Wetlands, and River Flow	before/in Construction	✓	△	△	△	Possible impact on surrounding water bodies due to drainage of water for construction works. Due consideration should be paid to the impact on the lagoon in Abidjan. (Confirmation of the location of facilities is required.)
		in Operation	✓	△	△	△	Since the final disposal site discharges treated water, there is concern about the impact on water bodies if the treatment is not adequate. Due consideration should be paid to the impact on lagoons in Abidjan. (Confirmation of final disposal site location is required.)

Item			Scoping				Reasons for Selection
			1. Ayewali Final Disposal Site	2. Transfer Station in Yahou	3. Transfer Station in Djibi	4. Transfer Station in Dabou	
12	Topography, Geology	before/in Construction	✓	✓	✓	✓	In all projects, land alteration due to construction work is anticipated.
		in Operation	△				No land alteration is expected at the operation stage. However, there is a possibility of land alteration for the final disposal site due to the expansion of the site.
Social Environment							
13	Land Acquisition, Resettlement	before/in Construction	△	△	△	△	For new construction sites, it is necessary to confirm whether resettlement or land acquisition on privately owned land will occur.
		in Operation					This is an issue that should be resolved at the planning stage.
14	Poor People	before/in Construction	△	△	△	△	It is necessary to confirm the resettlement of the poor and their employment status (including loss of employment opportunities).
		in Operation					The project will provide waste management services. In addition, as a positive effect, employment opportunities may be created for facility operations and recycling activities.
15	Ethnic Minorities, Indigenes People	before/in Construction	△	△	△	△	Confirmation should be made as to whether minorities and indigenous peoples live in the vicinity of the proposed construction site. If there are minorities/indigenous peoples to be protected, due consideration should be given to them.
		in Operation					This is an issue that should be resolved at the planning stage.
16	Local Economy, including Employment and Means of Livelihood	before/in Construction					Opportunities for private companies to receive orders and for residents to be employed through construction work, etc., are expected to be generated, and the local economy is expected to be stimulated as a result.
		in Operation					Job creation is expected from facility operations and recycling activities. Since no recycling activities by waste pickers are conducted at the existing disposal facility, no impact of job loss is anticipated.
17	Land Use and Local Resource Use	before/in Construction	✓	✓	✓	✓	Impacts to local resources used by local residents as a result of facility construction and operation must be avoided or minimized. If complete avoidance is not possible,

Item		Scoping				Reasons for Selection	
		1. Ayewali Final Disposal Site	2. Transfer Station in Yabou	3. Transfer Station in Djibi	4. Transfer Station in Dabou		
						appropriate compensation should be provided based on a socio-economic study of the community.	
		in Operation	✓	✓	✓	✓	same as above.
18	Water Use	before/in Construction	△	△	△	△	When excavation is carried out, there are concerns about the impact on groundwater and surface water. For example, ground conditions in impermeable or aquiferous layers may change, resulting in fluctuations in groundwater levels and possibly contamination of groundwater.
		in Operation	✓	△	△	△	Proper treatment of waste is expected to improve the water environment of rivers and lakes. For disposal sites, treated leachate will be discharged, but if treatment is not appropriate, water use may be affected. In addition, if excavation is involved when the disposal site is expanded, there is the same possibility as above.
19	Existing Social Infrastructure and Social Services	before/in Construction	✓	✓	✓	✓	The traffic on the road will increase due to the operation of construction vehicles, which is expected to have an impact on local traffic.
		in Operation	✓	✓	✓	✓	The operation of waste collection and transportation vehicles will increase traffic on the road, which is expected to have an impact on local traffic.
20	Social Organizations such as Social Relational Capital and Local Decision-making Bodies	before/in Construction					Through stakeholder consultations, etc., this project is expected to promote mutual communication among stakeholders related to waste management capacity, urban sanitation improvement, and the 3Rs.
		in Operation	△	△	△	△	There is a possibility of complaints regarding the operation of the facility, and concerns about disagreements among the parties involved regarding the handling of such complaints are anticipated.
21	Uneven Distribution of Damage and Benefits	before/in Construction	✓	✓	✓	✓	The project will contribute to improved waste management, but may have an impact on residents and others living near the construction site.
		in Operation	✓	✓	✓	✓	Due to the increased costs associated with the construction of the facility, the fees for waste disposal collected from residents may have to be raised.

Item		Scoping				Reasons for Selection	
		1. Ayewali Final Disposal Site	2. Transfer Station in Yabou	3. Transfer Station in Djibi	4. Transfer Station in Dabou		
22	Conflicts of Interest within the Community	before/in Construction					It is expected to improve its waste disposal capacity and provide better services to its citizen in Greater Abidjan.
		in Operation	△	△	△	△	It is anticipated that there will be differences in the availability and quality of waste disposal services in some areas, which may cause conflicts among residents.
23	Cultural Heritage	before/in Construction	△	△	△	△	It is necessary to confirm whether there are any culturally significant heritage sites or archaeological sites in the vicinity of the proposed construction site.
		in Operation					This is an issue that should be resolved at the planning stage.
24	Landscape	before/in Construction	△	△	△	△	It is necessary to confirm the position of the proposed area in terms of landscape and tourism (in particular, the World Heritage-listed Grand-Bassam and the lagoons that are widely distributed at the southern end of the Greater Abidjan Area).
		in Operation	△	△	△	△	
25	Gender	before/in Construction					No particular impact is anticipated.
		in Operation	✓	✓	✓	✓	Improved collection through this project could increase employment opportunities for women, including street sweeping. In addition, the operation of new waste-related facilities could result in the loss of jobs for women who have been earning their livelihoods by collecting valuable materials.
26	Children's Rights	before/in Construction					No particular impact is anticipated.
		in Operation					Improved waste disposal is expected to improve the living environment for children.
27	HIV/AIDS and Other Infectious Diseases	before/in Construction	✓	✓	✓	✓	If there is a large influx of construction workers from outside, there is concern about the impact of HIV/AIDS and other infectious diseases.
		in Operation					Proper treatment and disposal of waste is expected to reduce the risk of infectious diseases.
28	Working Environment (including Labor Safety)	before/in Construction	✓	✓	✓	✓	The working environment of construction workers must be taken into consideration.
		in Operation	✓	✓	✓	✓	Due consideration must be given to the working environment of workers during the operation and maintenance of the facility.

Item		Scoping				Reasons for Selection	
		1. Ayewali Final Disposal Site	2. Transfer Station in Yahou	3. Transfer Station in Djibi	4. Transfer Station in Dabou		
29	Accident	before/in Construction	✓	✓	✓	✓	In any of these projects, there is a possibility of accidents associated with construction work (e.g., accidents caused by heavy machinery, falls during work, etc.).
		in Operation	✓	✓	✓	✓	Accidents associated with facility operation (e.g., accidents caused by work equipment, falls during work, etc.) are expected to occur.
Others							
30	Boundary Impacts and Climate Change	before/in Construction	✓	✓	✓	✓	Carbon dioxide emissions are expected to increase due to the operation of heavy equipment and construction vehicles.
		in Operation	✓	✓	✓	✓	Carbon dioxide emissions are expected to increase due to the operation of waste collection and transport vehicles. In addition, methane gas may be generated or leaked from the decomposition process of landfill waste at the final disposal site, including poor pipe connections and deterioration.

Note: ✓: negative impact is expected. Δ: to be confirmed. Blank: negative impact is not expected.

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

Detailed mitigation plans will be elaborated and analyzed through the implementation of the Project.

10. Terms of Reference for Environmental and Social Consideration

Terms of reference (TOR) for the environmental and social consideration is as follows.

- (1) Review of existing development plans, development projects, studies, and public and private investments
- (2) Analysis to identify constraints to development, factors of promoting development
- (3) Analysis of alternatives for achieving the goals of the Project
- (4) Consideration of contents of developed policy and plans
- (5) Scoping (clarify extremely important items on environmental and social impacts and its evaluation methods at the time of decision making of Master Plan)
- (6) Confirmation of existing environmental and social conditions of the proposed projects area in Master Plan as a baseline data (land use, natural environment, culture and lifestyle of indigenous people and their communities, local economy and socio-

cultural environment and others)

- (7) Confirm legal framework and institution of Cote d'Ivoire on environmental and social considerations:
 - Laws, regulations and standards related to environmental and social considerations (environmental impact assessment, resettlement, public participation, information disclosure and others)
 - Gaps between the “JICA Guidelines for Environmental and Social Considerations (April 2010)” and legal framework of Cote d'Ivoire on environmental and social considerations
- (8) Outlines of relative agencies and institutions responsible of implementation of the projects
- (9) Prediction of likely impacts of proposed projects in Master Plan
- (10) Evaluation of likely impacts of the projects above (8) and comparative analysis of alternatives of proposed projects, including ‘without project’ option
- (11) Examination of the mitigation measures (to be avoided, minimized and compensated)
- (12) Examination of the monitoring methods (monitoring items, frequencies and methods)
- (13) Support to hold stakeholder meetings

In addition, TOR for items for the provisional scoping is shown in the table below.

Item	Survey Item	Survey Method
Air Pollution	<ul style="list-style-type: none"> • Confirmation of environmental standards, etc. • Impact during construction • Specifications of waste collection and transportation vehicles and heavy equipment 	<ul style="list-style-type: none"> • Confirmation of environmental standards, etc. • Confirmation of construction work, types of construction equipment, etc. • Confirmation of the number of collection and transportation vehicles • Confirmation of the number of heavy equipment in operation
Water Pollution	<ul style="list-style-type: none"> • Impact during construction • Impact of water treatment and drainage during operation 	<ul style="list-style-type: none"> • On-site water quality survey (including groundwater) and confirmation of the surrounding environment • Confirmation of construction work, water treatment and drainage conditions due to the facility operation
Waste	<ul style="list-style-type: none"> • Impact during construction • Impact of treatment residues (if an intermediate treatment facility is installed) 	<ul style="list-style-type: none"> • Confirmation of the contents of the construction works • Confirmation of treatment residues (if any)
Soil Contamination	<ul style="list-style-type: none"> • Impact of heavy machinery and vehicles during construction • Impact due to the damage of liner sheet • Possibility of oil leakage from heavy machineries, etc. 	<ul style="list-style-type: none"> • Confirmation of the maintenance plan for heavy equipment and vehicles • Confirmation of the management plan for the disposal site, investigation of existing data (information on the durability of liner sheets, permeability of the soil at the disposal site, etc.)

Item	Survey Item	Survey Method
Subsidence	<ul style="list-style-type: none"> • Height of the ground • Subsidence in the surrounding area 	<ul style="list-style-type: none"> • Field survey • Existing data survey (geology of the construction site, subsidence data of the surrounding area, etc.)
Noise and Vibration	<ul style="list-style-type: none"> • Impact during construction • Noise from equipment • Impact of collection and transportation vehicles 	<ul style="list-style-type: none"> • Confirmation of the surrounding environment through on-site inspections and interviews • Confirmation of specifications and layout of equipment to be used • Confirmation of noise generation from collection and transportation vehicles
Bad Odor	<ul style="list-style-type: none"> • Impact of organic waste handled at the facility operation • Impact of landfilled waste 	<ul style="list-style-type: none"> • Odor surveys at similar facilities, on-site surveys, and interviews to confirm the surrounding environment
Sediment	<ul style="list-style-type: none"> • Impact during/ immediately after construction • Impact during operation 	<ul style="list-style-type: none"> • Confirmation of the surrounding environment through on-site surveys and interviews • Confirmation of the construction work, water treatment and drainage status of the facility operation
Protected Area	<ul style="list-style-type: none"> • Impact during construction 	<ul style="list-style-type: none"> • Literature survey, survey of surrounding environment
Biodiversity	<ul style="list-style-type: none"> • Impact during construction • Impact during operation 	<ul style="list-style-type: none"> • Surrounding Environment Survey
Lakes, Wetlands, and River Flow	<ul style="list-style-type: none"> • Impact during construction • Impact during operation 	<ul style="list-style-type: none"> • Confirmation of the drainage destination of water used for construction • Confirmation of the destination of treated water <p>(In Abidjan in particular, it is necessary to pay attention to the impact on the lagoon.)</p>
Topography, Geology	<ul style="list-style-type: none"> • Topography and geology of the proposed construction site 	<ul style="list-style-type: none"> • Topographical and geological survey of the proposed construction site • Confirmation of the expansion plans for the disposal site
Land Acquisition, Resettlement	<ul style="list-style-type: none"> • Confirmation of the scale of resettlement due to the Project • Study measures to mitigate the impact of resettlement 	<ul style="list-style-type: none"> • Site survey of the planned site • Relocation scale survey • Confirmation of proposed resettlement plan <p>(In the case where resettlement is confirmed)</p>
Poor People	<p>Same as above.</p> <ul style="list-style-type: none"> • Confirmation of employment status of the poor 	<p>Same as above.</p> <ul style="list-style-type: none"> • Hearing investigation
Ethnic Minorities, Indigenes People	<p>Same as above.</p>	<p>Same as above.</p>
Land Use and Local Resource Use	<ul style="list-style-type: none"> • Land Use and Socioeconomic Activities 	<ul style="list-style-type: none"> • Survey of existing data such as statistics • Site survey of the proposed project site
Water Use	<ul style="list-style-type: none"> • Water Use and Living Conditions 	<ul style="list-style-type: none"> • Survey of existing data such as statistics • Site survey of the proposed project site

Item	Survey Item	Survey Method
Existing Social Infrastructure and Social Services	<ul style="list-style-type: none"> • Impact of construction vehicles on local traffic • Impact of waste collection and transportation vehicles on local traffic 	<ul style="list-style-type: none"> • On-site survey and hearing • Confirmation of construction plan (vehicle operation route, etc.) • Confirmation of waste collection and transportation plan
Social Organizations such as Social Relational Capital and Local Decision-making Bodies	<ul style="list-style-type: none"> • Community Impact of Facility Operations 	<ul style="list-style-type: none"> • Hearings with relevant organizations
Uneven Distribution of Damage and Benefits	<ul style="list-style-type: none"> • Land use and socio-economic activities, etc. 	<ul style="list-style-type: none"> • Site inspection of the planned site • Confirmation of cost burden for waste disposal
Conflicts of Interest within the Community	<ul style="list-style-type: none"> • Regional disparities in waste disposal services 	<ul style="list-style-type: none"> • Field inspection of the planned site • Hearings with related organizations
Cultural Heritage	<ul style="list-style-type: none"> • Presence of culturally significant heritage sites or archaeological sites in the vicinity of the proposed construction site. 	<ul style="list-style-type: none"> • Literature survey
Landscape	<ul style="list-style-type: none"> • Confirmation of the landscape and tourist status of the proposed construction site and surrounding area 	<ul style="list-style-type: none"> • Survey of existing data • Site survey of the proposed project site
Gender	<ul style="list-style-type: none"> • Impact on women who make a living by collecting and selling recyclable parts from waste 	<ul style="list-style-type: none"> • On-site surveys and hearings • Confirmation whether improvements of living environment are not unevenly distributed among genders and minorities.
HIV/AIDS and Other Infectious Diseases	<ul style="list-style-type: none"> • Number of migrant workers and place of accommodations, etc. 	<ul style="list-style-type: none"> • Confirmation of construction plan and labor plan
Working Environment (including Labor Safety)	<ul style="list-style-type: none"> • Attendance and health of workers • Related labor laws and construction work environment 	<ul style="list-style-type: none"> • Confirmation of Labor Plan • Field survey and hearing
Accident	<ul style="list-style-type: none"> • Details of accidents that may occur during construction and in-operation 	<ul style="list-style-type: none"> • Accidents that may occur during construction and in-operation and their countermeasures
Boundary Impacts and Climate Change	<ul style="list-style-type: none"> • Scale of deforestation and amount of greenhouse gas emission • Emission amount of Persistent Organic Pollutants (POPs) 	<ul style="list-style-type: none"> • Confirmation of the number of collection and transportation vehicles • Prediction of gas emissions from final disposal sites • Forest area reduced

11. Result of the consultation with recipient government on environmental and considerations including roles and responsibilities

MINHAS has basically understood the essence of JICA “Guidelines for Environmental and Social Considerations”.

12. Others relevant information

None