

Rapid Environmental Assessment (REA) Checklist

Instructions:

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (SDS) for endorsement by the Director, SDS and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: MLD / Greater Malé Waste-to-Energy Project

Sector Division: SAUW

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area...			The WTE project will be located in Thilafushi, an island on the southern rim of North Malé atoll, and on the eastern line of atolls within the archipelago. Thilafushi is an island classified as industrial zone and about 9.5km from Malé, the capital city of Maldives. In terms of geographic coordinates, Thilafushi is located at 04° 11' 00" N and 73° 26' 44" E.
▪ Densely populated?		✓	The island is classified as industrial island with no residential area. Population density is low. Baseline socio-economic profile shows there are no communities in Thilafushi. It is estimated that there 140 companies and less than 1,500 workers in the whole island.
▪ Heavy with development activities?		✓	Most locators in the island do not engage in heavy development activities. Survey shows that most establishments are warehouses and workshops only.
▪ Adjacent to or within any environmentally sensitive areas?			
○ Cultural heritage site		✓	Not applicable. No cultural heritage site in the island.
○ Protected Area	✓		The project site is located near 3 protected areas (Lions Head – 1 km away; Hans Hass – 2 km away; and Kuda Haa – 5 km away). Assessment of likely impacts of the project to these protected areas has been included in the EIA.
○ Wetland		✓	Not applicable. No wetland in and around the island.
○ Mangrove		✓	Not applicable. No mangrove in and around the island.

Screening Questions	Yes	No	Remarks
o Estuarine		✓	Not applicable. No estuarine in and around the island.
o Buffer zone of protected area		✓	Not applicable. No buffer zone in and around the island.
o Special area for protecting biodiversity		✓	Not applicable. Apart from the protected areas mentioned above, there is no other special area for protecting biodiversity in and around the island.
o Bay		✓	The island is situated within a large atoll (Kaafu Atoll). The project site is bordered by marine waters on its northern and southern boundaries. However, these coastal/marine waters are not regarded as sensitive or protected areas.
B. Potential Environmental Impacts Will the Project cause...			
▪ impacts associated with transport of wastes to the disposal site or treatment facility		✓	Not applicable. The project does not include component associated with transport of wastes.
▪ impairment of historical/cultural monuments/areas and loss/damage to these sites?		✓	There are no historical or cultural monuments in Thilafushi Island.
▪ degradation of aesthetic and property value loss?		✓	Not anticipated. The project will improve the existing situation in Thilafushi Island.
▪ nuisance to neighboring areas due to foul odor and influx of insects, rodents, etc.?		✓	Not anticipated. The current condition (dumpsite and unscientific waste management) will significantly improve due to the closing down and eventual rehabilitation of the existing dumpsite.
▪ dislocation or involuntary resettlement of people?		✓	Not applicable. The project will not cause or involve dislocation and involuntary resettlement of people.
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		✓	Not applicable. The project site is a newly built site in an industrial island (with no displaced humans or residential areas). The island is also not a host to any indigenous peoples or vulnerable groups.
▪ risks and vulnerabilities related occupational health and safety (OSH) due to physical, chemical, biological, and radiological hazards during project construction and operation?	✓		Anticipated during construction and operation phases. OHS risks are inherent to construction activities and WTE plant operations. These impacts will be mitigated by measures in the EMP and bidding documents following internationally recognized best practices and standards, such as the World Bank EHS Guidelines on Construction and Decommissioning Activities, and Guidelines on Waste Management Facilities.
▪ public health hazards from odor, smoke from fire, and diseases transmitted by flies, insects, birds and rats?		✓	Not anticipated. The project will improve the existing situation in Thilafushi Island.

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> deterioration of water quality as a result of contamination of receiving waters by leachate from land disposal system? 	✓		Anticipated during operation. The project includes a residual wastes landfill that will accommodate bottom ash and fly ash. The residual waste landfill cells may produce leachates that could potentially impact water quality of groundwater and marine waters. As measure included in the EMP and bidding documents, the landfill cells will be designed following internationally recognized best practices and standards for bottom ash/fly ash landfills to ensure no leachate will seep into the ground or flow out to the marine waters surrounding the project site.
<ul style="list-style-type: none"> contamination of ground and/or surface water by leachate from land disposal system? 	✓		Anticipated during operation. The residual wastes landfill may produce leachates that could potentially impact water quality of groundwater and marine waters. However, as measure included in the EMP and bidding documents, the landfill cells will be designed following internationally recognized best practices and standards for bottom ash/fly ash landfills to ensure no leachate will seep into the ground or flow out to the marine waters surrounding the project site.
<ul style="list-style-type: none"> land use conflicts? 		✓	Not applicable. The project will utilize land that has been newly developed for the purpose.
<ul style="list-style-type: none"> pollution of surface and ground water from leachate coming from sanitary landfill sites or methane gas produced from decomposition of solid wastes in the absence of air, which could enter the aquifer or escape through soil fissures at places far from the landfill site? 		✓	Not anticipated. The project does not include any solid waste landfilling. During operation phase of the WTE plant, wastes that will be used as buffer will be baled and stored in storage areas protected with flooring and linings that will prevent seepage of leachate.
<ul style="list-style-type: none"> inadequate buffer zone around landfill site to alleviate nuisances? 		✓	Buffer zone and greenery is included in the design for the WTE plant.
<ul style="list-style-type: none"> road blocking and/or increased traffic during construction of facilities? 		✓	Not anticipated. The transport of construction materials will utilize an exclusive route being used by the government in transporting solid wastes to Thilafushi island. This route is different from the route being taken by locals, including private and commercial marine vehicles in the island.
<ul style="list-style-type: none"> noise and dust from construction activities? 	✓		Anticipated , but duration is short-term, site-specific within a relatively small area. Measures to mitigate these impacts are included in the EMP and bidding documents following internationally recognized best practices and standards. Environmental monitoring is included in the EMP.
<ul style="list-style-type: none"> temporary silt runoff due to construction? 	✓		Anticipated , but duration is short-term, site-specific within a relatively small area. Measures to mitigate this impact are included in the EMP and bidding documents following internationally recognized best practices and standards.
<ul style="list-style-type: none"> hazards to public health due to inadequate management of landfill site caused by inadequate institutional and financial capabilities for the management of the landfill operation? 		✓	Not applicable. The project includes institutional and financial capabilities for the management of the facilities.

Screening Questions	Yes	No	Remarks
▪ emission of potentially toxic volatile organics from land disposal site?	✓		Anticipated. The design of landfill for the bottom ash and fly ash includes cover and engineering measures to ensure no emissions of potentially toxic volatile organics.
▪ surface and ground water pollution from leachate and methane gas migration?	✓		Anticipated. Leachate will be generated during operations. However, the leachate collection and treatment system will be lined to ensure groundwater and marine waters are not polluted. Generation of methane gas is not anticipated.
▪ loss of deep-rooted vegetation (e.g. tress) from landfill gas?		✓	Not applicable. The project does not involve solid waste landfill operation.
▪ explosion of toxic response from accumulated landfill gas in buildings?		✓	Not applicable. Generation of methane gas is not anticipated.
▪ contamination of air quality from incineration?	✓		Anticipated. Air emission from the WTE plant will potentially contaminate the air and deteriorate ambient air quality in the island. However, this impact will be mitigated by the engineering design and requirements of the project. The DBO Contractor will be required to comply with a set of performance guarantees, which includes assurance that air emission will comply with internationally accepted emission standards for incinerator plants.
▪ public health hazards from odor, smoke from fire, and diseases transmitted by flies, rodents, insects and birds, etc.?		✓	Not anticipated. The project will improve the situation in Thilafushi Island. The shutting down of operation and eventual rehabilitation of the existing dumpsite will reduce the proliferation of disease vectors affecting the island and other nearby islands. During operation phase, the EMP will define measures to mitigate hazards following internationally recognized best practices and standards, such as the World Bank EHS Guidelines on Waste Management Facilities.
▪ health and safety hazards to workers from toxic gases and hazardous materials in the site?	✓		Anticipated during construction and operation phases. The EMP includes measures to mitigate impacts, such as the mandatory use of personal protective equipment by workers. Regular training will also be conducted to ensure that workers are aware of construction hazards and risks of chemicals during O&M.
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		✓	Not anticipated. Similar to workers of other industries in Thilafushi island, most workers of the project are expected to be residents of nearby islands such as Gulhi Fahlu, Villingili and Male. For workers who will be staying at the project site, the DBO Contractor will be required to establish a workers' camp with complete facilities.
▪ social conflicts if workers from other regions or countries are hired?		✓	Not anticipated. Priority in employment will be given to local residents of Maldives. Workers from other regions or countries will be considered only if no counterpart expertise is available locally.

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation? 	✓		Anticipated. Fuels and other chemicals will be used during the construction and operation of the WTE plant, and these may raise risks of explosions or fires at the site. However, the EMP will define measures to manage these risks, including the implementation of proper handling and storage of these chemicals, following internationally recognized best practices and standards, such as the World Bank EHS Guidelines on Construction and Decommissioning Activities, and Guidelines on Waste Management Facilities.
<ul style="list-style-type: none"> community safety risks due to both accidental and natural hazards, especially where the structural elements or components (e.g., landfill or incinerator) of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning? 	✓		Anticipated. These risks are potential in the operation of the WTE plant. However, the EMP will define measures in order to manage these risks based on internationally accepted best practices and standards, such as the EHS Guidelines on Waste Management Facilities. Operational area will be clearly demarcated and access will be controlled. Only workers and project concerned members will be allowed to visit the WTE plant site.

A CHECKLIST FOR PRELIMINARY CLIMATE RISK SCREENING

Screening Questions	Score	Remarks ¹
Location and Design of project	2	Project location is in an island in Maldives that will likely be affected by floods due to rains or sea level rise.
	2	Project location is in an island in Maldives that will likely be affected by floods due to rains or sea level rise. Therefore, the project design needs to consider the impact of flooding and sea level rise.
Materials and Maintenance	0	No significant effect
	0	No significant effect
Performance of project outputs	0	No significant effect

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): High Risk

Prepared by:

Ninette Pajarillaga

Ninette Pajarillaga, Environment Specialist, SAUW

¹ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.