

JAPAN FUND FOR POVERTY REDUCTION GRANT: IMPROVING COMMUNITY-BASED SOLID WASTE MANAGEMENT IN SMALL OUTER ISLANDS OF ZONE 3

I. INTRODUCTION

1. The proposed Greater Malé Environmental Improvement Waste Management Project will establish a sustainable solid waste management (SWM) system in the Greater Malé capital region and its inhabited outer islands by (i) establishing a modern waste collection, transfer, and disposal system; (ii) improving community-based outer island waste management systems; (iii) building institutional capacity for sustainable services delivery; and (iv) raising public awareness in reduce, reuse, recycle (3R) behaviors.¹ Physical and nonphysical investments are designed to curb climate change and disaster impacts while creating a cleaner environment in Maldives, one of the world's lowest-lying nations.²

2. The Japan Fund for Poverty Reduction (JFPR) grant will complement the project by supporting a minimum of 10,000 of the 31,464 people³ living in small outer islands of zone 3⁴ to more sustainably manage the waste they generate. This will include (i) output A: island waste management centers (IWMCs) in selected outer islands established and operational; (ii) output B: skills and capacity of local and/or community stakeholders, minimum 30% women, for sustainable and inclusive SWM developed; and (iii) awareness campaigns on sustainable SWM and 3R benefits targeting the poor and women.

3. The impact of the project (and JFPR) will be a healthy living environment created in the Greater Malé capital region and its outer islands.⁵ The outcome will be improved disaster- and climate-resilient SWM services.

II. THE GRANT

A. Rationale

4. The project area suffers from severe environmental pollution and deteriorating livability from the inadequate collection and haphazard disposal of solid waste. Open dumping and burning of garbage at the 30-year old 10-hectare dumpsite on Thilafushi Island is an environmental and public health hazard posing a daily nuisance to Malé's residents and tourists, with plumes of smoke visible from Malé's airport and surrounding resorts.⁶ Zone 3 lacks an organized and sustainable waste management system for the 774 tons of mixed solid waste generated per day (tpd).⁷ With rapid urbanization and tourism development in the region, this waste is expected to

¹ With a total population of 216,000 inhabitants (51% of Maldives), the project area comprises the capital city of Malé and 35 inhabited islands of the Alifu Alifu Atoll (North Ari Atoll), Alifu Dhaalu Atoll (South Ari Atoll), Kaafu Atoll (Malé Atoll), and Vaavu Atoll. The Greater Malé capital region within the project area consists of seven islands (Funadhoo, Gulhifalhu, Hulhulé, Hulhumalé, Malé, Thilafushi, and Villimalé) and is the most populated. There are 76 resorts in the project area.

² ADB. 2017. *Technical Assistance to Maldives for Preparing the Greater Malé Environmental Improvement and Waste Management Project*. Manila.

³ Based on the 2014 population census.

⁴ Details on outer island name, population, and IWMC status are in Supplementary Appendix 6.

⁵ Progressive Party of the Maldives. 2013. *Manifesto of the Progressive Party of Maldives, 2013–2017*. Unpublished (unofficial English translation).

⁶ The dumpsite has no leachate control systems.

⁷ Breakdown of solid waste by type: construction and demolition = 530 tpd (68%), household = 149 tpd (19%), resort = 48 tpd (6%), commercial = 27 tpd (3%), airport = 9.3 tpd (1.2%), industrial = 6 tpd (0.8%), market = 2.5 tpd (0.3%), hazardous = 1.5 (0.2%), and end-of-life vehicles = 0.65 tpd (0.1%). *Source*: Government of Maldives, Ministry of Environment and Energy. 2017. *Draft Feasibility Study for an Integrated Solid Waste Management System for Zone*

grow 19% to 924 tpd by 2022. This increased pressure on an already-stressed waste management system poses a significant threat to Maldives' economic cornerstones: tourism and fisheries, both of which rely on the country's pristine environment.⁸ Poor communities in outer islands suffer from accumulated garbage with limited awareness and capacity to effectively manage solid waste.

5. People in the outer islands of zone 3, which have an average per capita income 37% lower than Malé,⁹ suffer from significant structural vulnerabilities such as limited land area, lack of natural resources, lower economic opportunities, and sea level rise.¹⁰ These are further exacerbated by pollution from poor SWM, posing threats to public health and the economy, which is mostly based on tourism jobs and fishery. Outer island SWM services are low or inexistent, characterized by lack of equipment, infrastructure, and capacity—resulting in a low collection rate (84%) and waste dumped on beaches, burnt at household backyards, used as filling material for land reclamation, discharged in water, or buried at household compounds.

6. The SWM service provision to outer islands remains a significant challenge because of diseconomies of scale, affordability, land scarcity, and remote location, aggravated by inaction from limited awareness and capacity. To address this issue, in line with internationally accepted 3R and proximity principles,¹¹ the government and international organizations¹² promoted IWMCs to encourage community-based SWM and recycling for enhancing sustainability and decreasing costs.¹³

7. IWMCs provide facilities and equipment to island communities for sorting, storing, and processing recyclables and organic waste such as concrete platforms for composting; wall boxes with steel sheds for processing and storing plastic bottles, cans, or paper; balers; crushers for metal and glass; and wood chippers. The government aims to provide an IWMC to all inhabited islands. Out of 32 outer islands in zone 3, nine islands have an IWMC (28% of total), of which five are not operational. One IWMC is under construction; the remaining 22 islands (69% of total) have no plans or designs yet (footnote 4).

8. **Lessons.** Previous IWMC experience at the national level shows that (i) proper design is essential for their success and sustainability (nonoperational IWMCs were inadequately designed, presenting technical deficiencies such as unplanned access areas for vehicles and insufficient storage facilities and equipment); (ii) capacity and awareness of island population in sustainable SWM and 3R are crucial elements affecting the effectiveness and sustainability of IWMCs; (iii) training activities targeting women should be planned around women's development committee availability and conducted simultaneously with the provision of infrastructure and

III (including Greater Malé) and Preparation of Engineering Design of the Regional Waste Management Facility at Thilafushi. Malé.

⁸ A quarter of the country's employment is in tourism and fisheries. Tourism accounts for 30% of gross domestic product and is expected to expand in the project area. Source: Government of Maldives, National Bureau of Statistics – Ministry of Finance & Treasury. 2015. *Maldives Population & Housing Census 2014 - Statistical Release 4: Employment.* Malé.

⁹ Monthly per capita income in Malé was Rf.4252/month, while in Zone 3 this was Rf. 2687/month (2009/2010). Source: Government of Maldives 2010. *Household Income and Expenditure Survey Findings 2009/2010.* Male.

¹⁰ UNDP. 2014. *Maldives Human Development Report 2014.* Malé.

¹¹ Proximity principle helps to reduce risks and social cost of long distance transportation of waste, including fuel consumption carbon emissions, waste spillages and contamination.

¹² Four have been active in the project area, the World Bank, the Australian and Canadian Red Cross, UNDP and EU)

¹³ The government and international development partners supported the first IWMC in 2005 after the 2004 tsunami.

equipment to ensure benefits and outputs are fully realized at the end of the training;¹⁴ (iv) incorporating disaster risk reduction and climate-resilient measures into project designs is necessary; and (v) strong community consultation and training (including in O&M) targeting the poor and women is necessary to promote SWM project sustainability.

9. **Added value of island waste management center.** The IWMC is a strategic component of the project for targeting outer islands and providing a comprehensive and sustainable SWM system to zone 3. Properly designed IWMCs will provide facilities and equipment for resource recovery, which together with public awareness and capacity development will promote sustainable community-based SWM. Organic waste treatment (e.g. composting) and recyclables and residue processing (e.g., chipping and bailing) in IWMCs will reduce waste volumes to be transferred to the regional waste management facility (RWMF) in Thilafushi, resulting in lower fuel consumption and costs. Coupled with community-based waste collection and RWMF, IWMCs will ensure a seamless and sustainable SWM system for the outer islands.

10. The project will develop or upgrade IWMCs in at least 22 outer islands where no IWMC is operational or under construction.¹⁵ The JFPR grant will support IWMCs in at least 11 islands, prioritizing those characterized by (i) severe to moderate climate risk vulnerability, and (ii) good governance in the island council.¹⁶ The JFPR will also support skills and capacity building in eligible outer island communities targeting women in sustainable and inclusive SWM; and public awareness on sustainable SWM and 3R in all outer island communities in zone 3. These are pivotal components for success of sustainable SWM system as shown by previous experience.

11. **Entry criteria.** To ensure operational and financial sustainability of assets supported under the project, an island council is required to satisfy three entry criteria before receiving IWMC development support: (i) provide sufficient and adequate land allocated on island (as required by IWMC design), which will avoid impacts to indigenous peoples, land acquisition, resettlement, and livelihood loss (both permanent and temporary); (ii) confirm availability of electricity connection on selected site for operating IWMC equipment; and (iii) sign a memorandum of understanding (MOU) with the Ministry of Environment and Energy (MEE) clearly stating the responsibilities and commitments of both parties. The minimum content and requirement of the MOU are reported in the project administration manual (PAM).¹⁷

B. Outputs and Key Activities

12. The JFPR grant contributes to output 2 of the project: enhanced community-based outer island waste management systems targeting the poor and women. The JFPR will focus on supporting outer island IWMC and local stakeholders' skills, capacity, and awareness in sustainable SWM through the provision of the right mix of equipment, works, public awareness, and capacity building. The specific JFPR grant outputs will be:

- (i) **Output A: Island Waste Management Centers in selected outer island established and operational.** The JFPR grant will support adequate IWMC facilities and equipment to at least 11 outer islands satisfying entry and priority

¹⁴ ADB. 2014. *Completion Report: Regional Development Project, Phase II—Environmental Infrastructure and Management in the Maldives*. Manila.

¹⁵ The project will focus on the 22 outer islands that do not have an IWMC. In the remaining islands with IWMCs, IWMC design will be improved ensuring suitable facilities and adequate equipment for processing, storing, and transferring recyclables and residual waste seamlessly to the regional solid waste management facility in Thilafushi.

¹⁶ A tentative priority list is reported in Appendix 6.

¹⁷ Project Administration Manual (accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President).

criteria. The IWMCs will include (a) a fenced area; (b) a platform for composting or anaerobic digestion; and (c) facilities and equipment for processing and storing recyclable waste fractions.¹⁸ Communities in each outer island will operate the IWMCs, and responsibilities between the island council and MEE will be clearly defined in the MOU.¹⁹ Key activities under this output are to (a) complete eligibility screening of outer islands; (b) complete consultations and appraisal of eligible islands; (c) finalize appraisal and detailed designs, procure and build IWMCs in outer islands; (d) test and commission IWMCs; and (e) develop IWMC operations manual and provide support.

- (ii) **Output B: Skills and capacity of local and/or community stakeholders, minimum 30% women, for sustainable and inclusive solid waste management developed.** The grant will support community skills training and capacity building in sustainable SWM such as collection, 3R, and composting. Activities will be conducted by the public awareness and community capacity building (PACCB) consultant and will target a minimum of 150 people (at least 30% women) in outer islands, consisting of a mix of workshops and on-the-job training. Key activities under this output include (a) engagement of PACCB consultants; (b) capacity building program design and development; (c) trainee identification and enrollment; (d) on-the-job training activities; and (e) skills and capacity transfer evaluation.
- (iii) **Output C: Awareness of outer island communities on sustainable solid waste management and reduce, reuse, recycle benefits improved.** The grant will support community awareness raising in SWM and 3R benefits. These activities will be conducted by PACCB and intends to reach a minimum of 10,000 people (at least 50% women), encouraging proactive participation in sustainable SWM.²⁰ Key activities under this output are to (a) engage PAACB consultants; (b) develop communication and public awareness strategy; (c) develop and test communication material for public awareness campaign; and (d) conduct awareness-raising activities on sustainable SWM and 3R benefits.

C. Cost Estimates and Financing Plan

13. The JFPR grant outputs are estimated to cost \$2.11 million (Table 1).

¹⁸ Detailed design will be finalized by the project management, design, and construction supervision consultant (PMDSC) recruited under the project during implementation after community consultation and needs assessment.

¹⁹ Island councils will have the following responsibilities: (i) fund collection, operation and maintenance of IWMC and transfer of residuals and recyclables to the RWMF in Thilafushi through adequate tariff, transfers (budget allocation or cross-subsidies) and/or revenue from trade of recyclables and/or compost; (ii) operate efficiently and continuously SWM and IWMCs following national SWM policies or bills; (iii) continuously engage island community in SWM, especially women, and conduct regular public awareness campaigns; (iv) promote community employment in SWM, minimum 30% women; (v) provide sufficient and adequate land allocated on island (as required by IWMC design) which will avoid impacts to indigenous peoples and land acquisition, resettlement and livelihood loss (both permanent and temporary); and (iv) ensure any project-supported designs involve community consultation targeting women. MEE will (i) guarantee (through WAMCO or other service providers) the transfer of residual solid waste (sorted) from islands to RWMF in Thilafushi by funding any budget shortfall, especially determined by diseconomies of scale or island people affordability issues; (ii) provide to island councils and SWM workers regular technical capacity support in community waste management, including training, capacity building and extraordinary IWMC repair and maintenance; and (iii) recognize and award every successful island at national level.

²⁰ This will be reached through mass and social media and workshop and/or training events. However, the design and monitoring framework indicator 2e (accessible from Appendix 1 of the report and recommendation of the President) considers only the number of people (500) who can be surveyed through pre- and post-intervention questionnaires (e.g., participants attending public awareness workshops and /or events).

Table 1: Cost Estimates

Item	Amount^a (\$ million)	Share of Total (%)
A. Base Cost^b		
1. Output A: Island Waste Management Centers in selected outer island established and operational	1.59	75
2. Output B: Skills and capacity of local and/or community stakeholders, minimum 30% women, for sustainable and inclusive solid waste management developed	0.24	11
3. Output C: Awareness of outer island communities on sustainable solid waste management and reduce, reuse, recycle benefits improved	0.18	9
Subtotal (A)	2.01	95
B. Contingencies^c	0.10	5
Total (A+B)	2.11	100
Administrative budget support^d	0.06	-

^a Includes taxes and duties of \$0.11 million to be financed by the government through cash contribution.

^b In mid-2018 prices.

^c Maximum of 10% of the total cost.

^d Includes remuneration for a national JFPR coordinator, activities for implementation support, monitoring, and evaluation (e.g., stakeholders' meetings), and dissemination materials and/or events. This additional budget support provided by the JFPR for grant implementation is exclusive of the grant amount.

Source: ADB estimates.

14. The JFPR will provide grant cofinancing equivalent to \$2 million, to be administered by ADB.

15. The financing plan is in Table 2. The Government of Maldives will pay taxes and duties and provide in-kind counterpart support in the form of office space, workshop venues, vehicles, and staff.

Table 2: Financing Plan

Source	Amount (\$ million)	Share of Total (%)
Japan Fund for Poverty Reduction ^a	2.00	90.00
Government of Maldives	0.11	10.00
Total	2.11	100.00

^a Administered by the Asian Development Bank (ADB).

Source: ADB estimates

D. Implementation Arrangements

16. The Ministry of Finance and Treasury (MOFT) will be the executing agency for the project and JFPR grant, while the Ministry of Environment and Energy (MEE) will be the implementing agency. The project management unit (PMU) established for the project will be responsible for the day-to-day administration of the grant.²¹ A JFPR coordinator (financed by the JFPR grant) with experience in poverty, gender, social development, information, education and communication, and behavior change will coordinate with the PMU in implementing JFPR related activities and liaise with ADB. Procurement of civil works and goods will follow ADB's Procurement Guidelines (2015, as amended from time to time) and disbursement will follow ADB's *Loan Disbursement Handbook* (2017, as amended from time to time). The recruitment of consultants will follow ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).

²¹ A dedicated full-time PMU will be established for the main grant and includes eight staff as follows (i) project director (part-time, director general of department), (ii) project manager, (iii) procurement specialist, (iv) finance specialist, (v) safeguard specialist, (vi) civil engineer, (vii) Information, Education and Communication specialist, and (viii) administrative assistant.

The grant will be implemented from December 2018 to June 2023. The estimated completion date is 30 June 2023. The implementation arrangements are described in detail in the PAM (footnote17).

Table 3: Implementation Arrangements

Aspects	Arrangements		
Implementation period	December 2018–June 2023		
Estimated completion date	30 June 2023		
Estimated grant closing date	31 December 2023		
Management			
(i) Oversight body	<p><u>Program Steering Committee</u> Chair: Minister, MEE Members: Waste Management Company Ltd, MOFT, Ministry of Tourism, Ministry of Health, Ministry of Gender and Family, Local Government Authority, Environmental Protection Agency</p> <p><u>Technical Committee</u> Chair: Project Director, MEE Members: MEE, Ministry of Tourism, Ministry of Health, Ministry of Gender and Family, Local Government Authority, Ministry of Housing and Infrastructure Malé City Council, Environmental Protection Agency, Waste Management Corporation Limited, Thilafushi Corporation Limited, two representatives from environmental NGOs.</p>		
(ii) Executing agency	MOFT		
(iii) Key implementing agency	MEE		
(iv) Implementation unit	Project management unit in MEE's Waste Management and Pollution Control Department (eight staff).		
Procurement	ICB (work)	1 contract (JFPR lot)	\$0.90 million ^a
	ICB (goods)	1 contract (JFPR lot)	\$0.69 million ^b
Consulting services	QBS	50 person-months	\$0.42 million ^c
Retroactive financing and/or advance contracting	Advance contracting is requested for civil works, equipment and consultant packages. Retroactive financing will be up to 20% of the ADB grant amount for eligible expenditures incurred before grant effectiveness. However, such expenditures cannot be incurred more than 12 months before signing of the grant agreement.		
Disbursement	The grant proceeds will be disbursed following ADB's <i>Loan Disbursement Handbook</i> (2017, as amended from time to time) and detailed arrangements agreed between the government and ADB.		

ADB = Asian Development Bank, ADF = Asian Development Fund, ICB = international competitive bidding, MEE = Ministry of Environment and Energy, MOFT = Ministry of Finance and Treasury, QBS = quality-based selection.

^a This will be procured as part of a \$2.6 million civil works package.

^b This will be procured as part of a \$1.8 million goods package.

^c This amount will be part of a consultancy contract for public awareness and community capacity development. In the time sheet consultant will specify either outer islands or Greater Malé. Only outer island activities are eligible under the JFPR.

Source: Asian Development Bank.

III. DUE DILIGENCE

A. Technical

17. Technical due diligence included a comprehensive review of the project including the feasibility study of the IWMC concept as an integral part of the zone 3 SWM system. Technical aspects of the project were appraised based on (i) rationale and relevance, benefits, proposed designs, ease of implementation, and operations; (ii) a range of technical alternatives and their viability; (iii) the life cycle costs (including capital and operating costs) and achievable cost savings (including climate- and disaster-resilient measures); (iv) maximizing beneficiary area coverage

including the poor; (v) minimizing adverse environmental and social impacts; and (vi) optimizing time lines for implementation through high project readiness. Based on assessments by the project preparatory TA, the IWMC concept is robust and technically feasible and adequately addresses the key waste management issues facing the project area. The simplicity of the IWMC concept design matches outer island communities' capacity for operation and maintenance. Detailed design of each IWMC (including equipment selection) will be tailored to the needs of the beneficiary island, incorporating lessons from previous experience and carried out by the project management, design, and supervision consultant (PMDSC) in consultation with the island councils and communities. This approach will improve sustainability and ensure the best adequacy of IWMC design.

B. Economic and Other Impacts, Financial Viability, and Sustainability

18. **Economic impact.** The economic rationale for government intervention is sound as the proposed project aims to provide more sustainable SWM services in the Greater Malé capital region and outer inhabited islands. The estimated economic internal rate of return (EIRR) of the project is 18.1%, higher than the economic opportunity cost of capital estimated at 9.0%, indicating significant economic returns. The sensitivity analysis also revealed the results are satisfactory against all downside risks, i.e.: (i) a capital cost overrun of 20%; (ii) an overrun in operation and management costs of 20%; (iii) a decline in estimated benefits of 20%, (iv) a 1-year delay of implementation, and (vi) a combination of all these factors.²²

19. **Financial viability.** A financial analysis was conducted for the project to ensure its sustainability and to determine the extent to which it will generate revenues to cover operation and maintenance costs (footnote 22). The results of financial analysis showed that the project would generate sufficient revenues to cover full operation and maintenance costs provided island councils implement regular tariff revisions. The financial performance of WAMCO and island councils indicated that they have substantially depended on government grants. With this, the financial projections of WAMCO and the island councils demonstrate that with (i) rationalized tariffs, (ii) improved collection efficiency, and (iii) continued government support, the revenue account will remain in surplus.

20. **Sustainability.** Outer island councils will be required to sign an MOU with the MEE clearly defining the roles and responsibilities of the two parties. The MOU will include the development of a funding strategy to cover SWM operations and maintenance through adequate tariff and transfers (budget allocation or cross subsidies) and/or revenues from trade of recyclables or compost. The MEE will provide continuous technical backstopping and cover budget shortfalls, especially to address affordability issues and diseconomies of scale. The PACCB consultant will facilitate the development of outer island funding strategy and conduct programs to raise public awareness and improve community capacity in sustainable SWM operations. The combination of these elements will improve long-term sustainability of the outer island SWM system developed, including IWMCs.

21. **Financial management.** A financial management assessment concludes that the MEE can conduct adequate financial management of the project. The MEE has experience in handling large-scale projects funded internally and externally.²³ The MEE also has an established legal, institutional, and monitoring framework available for budgeting, accounting, and auditing. Based

²² Economic Analysis; Financial Analysis (accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President).

²³ The MEE has implemented World Bank solid waste management projects in zone 2 and other similar projects funded by bilateral agencies.

on these, the overall financial management risk for the project is moderate. The project design includes the following risk mitigation measures: (i) ensuring MOFT and MEE commitment for the timely setup of the PMU with qualified staff ; (ii) ensuring MOFT and MEE commitment for timely allocation and disbursement of the government’s counterpart funds; (iii) strengthening the internal audit process of the MEE and PMU by appointing qualified staff or outsourcing to experienced audit firms; and (iv) effectively implementing the systematic plans by WAMCO and island councils for enhancing revenue and reducing costs.

22. **Procurement.** Procurement of civil works and goods will follow ADB’s Procurement Guidelines (2015, as amended from time to time). The procurement of consultants will follow ADB’s Guidelines on the use of Consultants (2013, as amended from time to time). A procurement capacity assessment concluded that the overall procurement risk for the project is moderate. The MEE has extensive experience in donor-supported procurement of works. Additional handholding support for the MEE will be provided by a procurement expert recruited under the attached technical assistance.

23. **Anticorruption measures.** The ADB’s Anticorruption Policy (1998, as amended to date) was explained to and discussed with the MOFT and the MEE. The specific policy requirements and supplementary measures are described in the PAM (footnote 17). Based on the risk assessments, some of the mitigation measures incorporated in the project design aim to (i) establish a mechanism for regular voluntary disclosure of relevant information; (ii) develop and update a website to enhance transparency in project implementation, procurement, and safeguards; and (iii) establish a grievance redress mechanism to ensure effective resolutions to grievances, if any.

C. Poverty and Social Impacts

24. About 16% of the atoll population lives below the national poverty line of Rf22 per day.²⁴ The project supports improved waste management targeting poor outer island communities, which will include skills training and campaigns to raise awareness and encourage behavior change. The project will result in a cleaner environment having positive impacts on fishing and tourism-based livelihoods for which many of the poor depend on.

25. **Gender.** The project is classified *effective gender mainstreaming*. Gender design features include (i) participation of women in community-based waste management activities in poor outer island communities, (ii) capacity building on gender for project stakeholders, (iii) promotion of equitable access to project employment opportunities, and (iv) equal opportunity employment across positions in WAMCO. A gender action plan (GAP) is prepared with clear targets, responsibilities, and resource allocation for the meaningful participation of women.²⁵ The MEE will implement the GAP with support from PACCB consultants recruited under the project. The IEC specialist in the PMU will serve as the gender focal point to oversee GAP implementation. The JFPR coordinator will also assist in implementing gender components of the JFPR grant.

D. Participatory Approach

26. The JFPR supported components promote community-based SWM concepts, which confer to local stakeholders most of the decision making through extensive consultations, public

²⁴ Government of Maldives 2010. *Household Income and Expenditure Survey Findings 2009/2010*. Malé.

²⁵ Gender Action Plan (accessible from the list of the list of linked documents in Appendix 2 of the report and recommendation of the President).

awareness, and local employment promotion. Island councils are required to (i) consult the community, targeting women in any project-supported design, SWM funding strategy or tariff determination, and SWM action plan preparation; (ii) continuously engage with the island community (especially women and vulnerable people) and conduct regular public awareness campaigns; (iii) promote community employment and training in SWM (minimum 30% women). The MEE will provide regular technical capacity support to outer islands and recognize and/or award successful islands at the national level to encourage communities in best SWM practices. To ensure the implementation of these participatory elements, the MEE and island councils will sign an MOU as entry criteria for grant assistance. The JFPR coordinator, PACCB, and PMDSC will support, facilitate, and review.

E. Development Coordination

27. The ADB project team consulted with officials from the Embassy of Japan in Maldives on 3 April 2018 via email, while Japan International Cooperation Agency (JICA) officials from Maldives and Sri Lanka office were met in Colombo, Sri Lanka on 16 February 2018. Past and ongoing projects supported by the Government of Japan in Maldives were discussed. ADB and JICA officials agreed on the importance of not duplicating efforts and enhancing collaboration opportunities in the sector, especially given the good experience and knowledge of Japanese institutions on 3R. The ADB team also met with UNDP and World Bank officials to discuss lessons and ongoing experience with IWMCs, which were incorporated into the project design (para. 8). Since 2016, the government through the MOFT and the MEE proactively supported donor coordination in zone 3 and meetings are held annually. As the major donor in zone 3, ADB will continue to communicate with partners and provide regular updates on project implementation to avoid duplication of efforts and ensure complementarity of efforts.

F. Safeguards

28. In compliance with ADB's Safeguard Policy Statement (2009), the project's safeguard categories are described below.²⁶

29. **Environment (category B).** Three draft initial environmental examinations (IEE)²⁷ with environmental management plans (EMPs) were prepared for subprojects requiring civil works: (i) transfer stations in Malé and Villimalé, (ii) construction and demolition waste processing plant, end-of-life vehicle dismantling workshop, and waste vessel harbor rehabilitation at Thilafushi, and (iii) a sample IWMC on Thulusdhoo Island. All project locations are outside sensitive areas and any impacts can be avoided and/or mitigated through measures identified in the EMPs. The MEE conducted public consultation during the IEE preparation and will continue to consult throughout project implementation. As a condition for bidding, ADB requires IEEs be included in the bidding document. The IEEs prepared during the project preparation stage will be updated during detailed engineering design and submitted to ADB for review and disclosure. No contracts can be awarded until ADB approves the final IEE. An environmental assessment and review framework (EARF) was prepared for output 2 including site selection and design criteria, screening, categorization, and guidance on IEE preparation.²⁸ The project will not include category A subprojects, as per criteria. For any existing IWMC to be rehabilitated, environmental audit will be conducted and corrective actions, if any, will be incorporated in the design and IEE. The EARF and IEEs have

²⁶ ADB. Safeguard Categories. https://www.adb.org/site/safeguards/safeguard-categories_

²⁷ Initial Environmental Examinations (accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President).

²⁸ Environmental Assessment and Review Framework (accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President).

been disclosed on the websites of ADB and the MEE and will be available in language and form understandable to stakeholders. Safeguard-related grievances will be handled following the project-specific grievance redress mechanism for the project, detailed in the PAM. While the MEE developed capacity in implementing donor-supported environmental safeguards for waste and energy projects, the new PMU will receive capacity support from consultants to ensure sufficient monitoring and management of environmental impacts. Environmental reporting to ADB will be done on a semiannual basis.

30. **Involuntary resettlement and indigenous people (category C).** For JFPR supported components (IWMCs), selection criteria were agreed and included in the PAM, resettlement framework, and EARF, requiring no development on private land, physical displacement, livelihood loss, or temporary impacts. The MEE is required to provide copies of land records for all project sites, including those with JFPR support. There are no indigenous people communities present at or around the subproject sites.

G. Risk and Mitigating Measures

31. Key risks and mitigating measures are summarized in Table 4. A financial management assessment in the PAM (footnote 17) outlines other detailed risks and mitigation measures related to financial management.

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigation Measures
Limited capacity of PMU in procurement and project management.	The MEE has in-house project implementation experience gained from earlier and ongoing World Bank funded solid waste management projects, as well as experience implementing ADB energy projects. ^a The PMU will receive consultant support in project management from the PMDSC. Additional support in ADB requirements (procurement, safeguards, etc.) will be provided by the attached TA to the project. A JFPR coordinator, funded by JFPR administrative budget support, will coordinate with the PMU in implementing JFPR related activities and liaise with ADB. The JFPR administrative budget support will ensure smooth implementation.
Island councils unable to raise sufficient funds for O&M	Project preparatory TA household survey showed high willingness to pay higher tariffs for improved solid waste services. Public campaigns will raise awareness about the benefits of improved services, sustainable SWM, and 3R. MOUs signed between island councils and the MEE will confirm funding for O&M. The MEE agreed to cover any O&M funding shortfalls as a project assurance.
Weak technical capacity of outer island communities for O&M	Capacity building in O&M for island councils and/or outer island communities is included in the terms of reference of PMDSC and PACCB consultants under the project. The attached TA will also provide additional technical support to WAMCO for improved operations.

3R = reduce, reuse, recycle, MEE = Ministry of Environment and Energy, O&M = operation and maintenance, PACCB = public awareness and community capacity building, PMDSC = project management, design, and supervision consultant, PMU = project management unit, SWM = solid waste management, TA = technical assistance, WAMCO = Waste Management Corporation Limited.

^a ADB. 2014. *Report and Recommendation of the President to the Board of Directors: Proposed Grant to Preparing Outer Islands for sustainable Energy Development Project*. Manila.

Source: Asian Development Bank.

IV. ASSURANCES

32. The government and the MOFT have assured ADB that implementation of the JFPR grant shall conform to all applicable ADB policies including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the project administration manual and the grant agreement.²⁹

²⁹ Legal document to be signed by the government and ADB.

LIST OF SUPPLEMENTARY DOCUMENTS

1. Detailed Cost Estimates by Outputs and/or Components
2. Administrative Budget Support details
3. List of Outer Islands, Status of IWMCs implementation, and Tentative Prioritization for Japan Fund for Poverty Reduction Support
4. Map of Project Area

DETAILED COST ESTIMATES BY OUTPUTS AND/OR COMPONENTS

Table 1: Detailed Cost Estimates by Outputs

(\$)

Item	Total Cost	Output A: Island Waste Management Centers in selected outer island established and operational	Output B: Skills and capacity of local and/or community stakeholders, minimum 30% women, for sustainable and inclusive solid waste management developed	Output C: Awareness of outer island communities on sustainable SWM and 3R benefits improved
A. Base Costs				
1. Civil works	898,000	898,000	-	-
2. Goods and services (Equipment)	692,000	692,000	-	-
3. Training	68,000	-	48,000	20,000
4. Consulting Services				
a. International	54,000	-	54,000	-
b. National	248,000	-	141,000	107,000
5. Communication material	50,000			50,000
Subtotal (A)	2,010,000	1,590,000	243,000	177,000
B. Contingencies				
1. Physical contingencies	100,000	100,000	-	-
2. Price contingencies	-	-	-	-
Subtotal (B)	100,000	100,000	-	-
Total Project Cost (A+B)	2,110,000	1,690,000	243,000	177,000

^a No taxes will be financed from Japan Fund for Poverty Reduction. Taxes will be covered by government (estimated amount of \$110,000)

Source: Asian Development Bank estimates.

ADMINISTRATIVE BUDGET SUPPORT DETAILS

1. **Administrative budget support.** The remote and disperse location of outer islands and the community-based approach, increase the complexity of the project requiring extra resources for its implementation, coordination, monitoring and evaluation. Administrative budget support will help ensure high quality monitoring and adequate coordination among involved parties leading to smooth implementation. Project results dissemination and Japan Fund for Poverty Reduction (JFPR) improved visibility will also be funded by the administrative budget support.
2. The budget support will fund a JFPR coordinator, with experience in poverty, gender, and social development, IEC and behavior change who will coordinate with the PMU in implementing JFPR related activities and liaise with ADB.

Table 1: Administrative Budget Support Details

Administrative Budget Support	Details
Total amount requested	\$60,000
Justification	Provide project implementation and monitoring support to outer islands.
Type of work to be rendered by ADB	<ul style="list-style-type: none"> - Support island screening, to confirm entry and priority criteria for JFPR islands - Support project implementation - Support coordination among parties - Support project monitoring and evaluation - Ensure donor visibility - Communicate project results

ADB = Asian Development Bank, JFPR = Japan Fund for Poverty Reduction.

Table 2: Cost Estimate of Administrative Budget Support

Expenditure Category	Quantity	Unit Cost	Total
Staff Consultant (National)	Remuneration: 13 PM (National)	\$3,000	\$39,000
	Travel (30)	\$200	\$6,000
	Per Diem (60d)	\$80	\$4,800
Stakeholders meetings and consultations for monitoring and evaluation	5 meetings	\$500	\$2,500
Public Campaigns and other dissemination related activities for JFPR result	2 Seminars	\$2,000	\$4,000
Contingency	6%		\$3,700
Total Cost			\$60,000

PRELIMINARY ISLANDS PRIORITIZATION FOR ISLAND WASTE MANAGEMENT CENTERS SUPPORT UNDER JAPAN FUND FOR POVERTY REDUCTION

	Island Name classified by Atoll	Population	IWMCs Status		Climate Risk ⁱ Vulnerability				Island Council Representatives ⁱⁱ			Priority List ⁱⁱⁱ	Comments	
			Status	Donor	S	H	M	L	W	M	WD			
1	Male' Atoll (K)													
1.1	Guraidhoo	1738				x				0	3	Y	6. JFPR	
1.2	Maafushi	3025	Not Operated	Canadian & Australian Red Cross Association through the Tsunami Funding from CIDA and AusAID 2006 -2009				x	1	2	Y			
1.3	Gulhi	912					x		0	3	Y	9. JFPR		
1.4	Thulusdhoo	1408				x			0	3	Y	7. JFPR		
1.5	Himmafushi	1725						x	0	3	Y			
1.6	Huraa	1300	Operated	Supported by the Four Seasons Resort at Kuda Hura 2017				x	0	3	Y			
1.7	Kaashidhoo	1865						x	1	2	Y	11. JFPR		
1.8	Gaafaru	1066						x	0	3	Y			
1.9	Dhiffushi	1053						x	0	3	Y			
2	North Ari Atoll (A.A)													
2.1	Thoddoo	1534	Not Operated	Upgraded by WB 2012-2014				x	2	1	Y			
2.2	Rasdhoo	1067			x				0	3	Y	1. JFPR		
2.3	Ukulhas	1005	Operated	Supported by WB and TSIP 2012-2014	x				0	3	Y		Reported as best practice. Sever damage	

	Island Name classified by Atoll	Population	IWMCs Status		Climate Risk ⁱ Vulnerability				Island Council Representatives ⁱⁱ			Priority List ⁱⁱⁱ	Comments	
			Status	Donor	S	H	M	L	W	M	WD			
					x									caused from sea swell
2.4	Mathiveri	662	Not Operated	Supported by the Island Council				x	1	2	Y			
2.5	Bodufulhadhoo	608			x				0	3	Y	3. JFPR		
2.6	Himandhoo	724						x	0	3	Y			
2.7	Maalhos	434					x		0	3	Y	10. JFPR		
2.8	Feridhoo	441						x	1	2	Y	12. JFPR		
3	South Ari Atoll (A.Dh)													
3.1	Omadhoo	883			x				0	3	Y	2. JFPR		
3.2	Mandhoo	367			x				0	3	Y	5. JFPR		
3.3	Kunburudhoo	462			x				0	3	Y	4. JFPR		
3.4	Mahibadhoo	2074	Maintenance required	Supported by PSIP of GOM (2016)				x	0	3	Y			
3.5	Dhangethi	824	Not Operated	Supported by WB 2012-2014	x				0	3	Y			
3.6	Dhidhdhoo	610						x	0	3	Y			
3.7	Fenfushi	837	Operated	Supported by WB and TSIP 2012-2014	x				0	3	Y			Best Practice
3.8	Dhigurah	610	Operated	Supported by WB and TSIP 2012-2014					0	3	Y			Require waste sorting arrangement
3.9	Maamigili	2359	Not Operated	Supported by PSIP of GOM (2016)				x	0	3	Y			
3.10	Hangnameedhoo	517					x		0	3	Y			
4	Felidhe Atoll (V)													
4.1	Rakeedhoo	106						x	0	3	Y			

	Island Name classified by Atoll	Population	IWMCs Status		Climate Risk ⁱ Vulnerability				Island Council Representatives ⁱⁱ			Priority List ⁱⁱⁱ	Comments
			Status	Donor	S	H	M	L	W	M	WD		
4.2	Fulidhoo	372	Under Construction	Supported by PSIP of GOM (2017)				x	1	2	Y		
4.3	Felidhoo	506				x			0	3	Y	8. JFPR	
4.4	Thinadhoo	152					x		0	3	Y		
4.5	Keyodhoo	675					x		0	3	Y		

CIDA = Canadian International Development Agency, JFPR = Jpan Fund for Poverty Reduction, PSIP = , TSIP = , WB = World Bank.

ⁱ S = Severe, H = High, M = Moderate, L = Low – assessed by Environmental Protection Agency (EPA) of MEE based on cri coastal erosion and flooding

ⁱⁱ W = Women, M = Men, WD= women development committee established

ⁱⁱⁱ Criteria 1: Climate Vulnerability > Criteria 2: Women’s Development Committee established > Criteria 3: At least one woman representative in Island Council > Criteria 4: Population

MAP OF PROJECT AREA

