



1. Project Data

Project ID P108078	Project Name MV: Environmental Management Project		
Country Maldives	Practice Area(Lead) Environment & Natural Resources	Additional Financing P153958	
L/C/TF Number(s) IDA-44270,IDA-D0480	Closing Date (Original) 30-Jun-2014	Total Project Cost (USD) 13,880,000.00	
Bank Approval Date 10-Jun-2008	Closing Date (Actual) 30-Jun-2016		
		IBRD/IDA (USD)	Grants (USD)
Original Commitment		13,150,000.00	0.00
Revised Commitment		16,434,694.81	0.00
Actual		15,611,897.16	0.00
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2. Project Objectives and Components

a. Objectives

The project has two development objectives:

- (a) Solid waste management system is established and that inhabitants on targeted islands use solid waste management facilities, reducing the risks of contamination associated with accumulated wastes and sea dumping;
- (b) To build human and technical capacity for environmental management so that the environmental dimension is integrated in the planning process using information and expertise developed in the project.



(Project Appraisal Document, PAD, p. 11; Financing Agreement, p. 4).

b. Were the project objectives/key associated outcome targets revised during implementation?
No

c. Will a split evaluation be undertaken?
No

d. Components

Component 1. Regional Solid Waste Management Program (Appraisal US\$6.55 million; Additional Financing US\$3.3 million; Actual US\$10.5 million) was to develop a sustainable solid waste management system, with a catchment of one or more of the four atolls of the North central region. It included six subcomponents: (i) Technical studies, Environmental and Social Impact Assessment Studies, Contract Documentation focused on supporting an assessment to identify the catchment area, location of the regional waste management facility (RWMF) and the waste management system (technology) for final disposal.; (ii) Community consultation and the development of Island Waste Management Plans; (iii) Construction of Island Waste Management Centers (IWMCs); (iv) procurement of Waste Transfer System to the Regional Waste Management Facility (RWMF); (v) Construction and Operation of the RWMF; and (vi) Biodiversity offsets to Compensate for possible impacts of the RWF.

Component 2. Capacity Building for Environmental Management (Appraisal US\$2.94 million; Actual US\$2.4 million) was designed to address capacity needs and develop qualified generalists and specialists from the Ministry of Environment, Energy and Water (MEEW), Ministries of Planning, Fisheries, Tourism, and Construction, as well as private sector. The importance was to be given to training existing government staff and others.

Component 3. Technical Assistance for Strengthened Environmental Management and Monitoring and a Pilot Regional Strategic Environmental Assessment in the North Central Region (Appraisal US\$2.85 million; Actual US\$1.3 million) focused on building climate resilience by improving management and stewardship of the country's coastal resources (marine and terrestrial). It included four sub-components: (i) Erosion and the terrestrial environment; (ii) Marine environmental monitoring and Coral reefs; (iii) Spatial planning; (iv) Integration of findings: reports and a pilot regional strategic environmental assessment.

Component 4. Project Management and Communications (Appraisal US\$1.54 million; Actual US\$1.4 million). This was to support the overall project management, component management, liaison with other agencies and programs, financial management, procurement, monitoring and evaluation and project communications.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates

Project Costs. The total project cost at appraisal was US\$13.88 million, increasing to US\$15.6 million at



closing due to cost overruns.

Financing. The Bank financed the project through an IDA credit in the amount of SDR 8.00 million (US\$ 13.15 million equivalent). An additional financing grant was approved in the amount of SDR 2.4 million (US\$3.3 million equivalent) on April 22, 2015 to cover cost overruns associated with the establishment and use of the regional waste management (RSWM) system and facility. The original credit was fully disbursed; the grant was disbursed at US\$2.4 million equivalent.

Borrower Contribution. According to the PAD (p. 68), the Borrower contribution was estimated at US\$0.74 million (representing 5% of total costs) from import duties (US\$0.3 million) and office O&M and monitoring costs (US\$0.41 million).

Dates. The project was extended by a total of two years from the original closing date of June 30, 2014 to June 30, 2016. The first extension was for one year to June 30, 2015, approved on February 11, 2014 due to delays in implementing the RSWM component. The results framework was revised, including outcome targets. The second extension was for six months to December 31, 2015 at the time of additional financing approved on April 22, 2015 to allow completion of the establishment and utilization of an integrated RSWM system. On December 1, 2015 there was a further extension for 6 month of the IDA grant closing date from December 31, 2015 to June 30, 2016 to complete the project activities.

3. Relevance of Objectives & Design

a. Relevance of Objectives

Environmental pressures in the Maldives stem from the fragile geography of the country coupled with rising population densities, increased tourism, and changing consumption patterns. The country faces growing problems with solid waste management and pollution from sewage and other effluents emanating from urban settlements, hotels, fish-processing plants, ships and other sources. The quantities of solid waste generated exceed disposal and treatment capacity. Uncontrolled waste disposal and floating debris at tourist resorts is the most visible threat to the country's reputation as a pristine tourist destination. Habitat degradation threatens marine assets. The environmental challenges could hamper the country's economic growth especially if they undermine tourism.

The project fell within the Bank's broader development objectives for the Maldives to help reduce environmental risks of marine ecosystem, which jeopardize to undermine country's economic achievements. Inadequate arrangements for solid waste management posed a substantial risk and threat to the coastal, marine and coral reef ecosystems. Lack of technical and managerial capacity didn't allow succeeding with comprehensive policy framework for environmental protection in the country. One of the key goals of the World Bank Group's Country Assistance Strategy 2008-2012 at appraisal was to improve capacity to manage the country's marine and build greater resilience to climate variability and change.

The project's objectives were closely aligned with the Government's environmental priorities and goals as set in its National Solid Waste Management Policy on February 3, 2008 and its Seventh National Development Plan (7th NDP) that aimed to provide 75 percent of all inhabited islands with adequate solid waste management facilities during the plan period. The project was also expected to contribute to the principles of sustainable tourism and environmental conservation which were enunciated in the Maldives Third Tourism Master Plan (2007 - 2011).



The project objectives continue to respond to Government's priorities and remain consistent with the Bank's current Country Partnership Framework for Maldives (FY16-FY19) which focuses on strengthening natural resource management and climate resilience and seeks to address shortcomings in solid waste management.

Rating

High

b. Relevance of Design

The statement of the objectives was clear. Project design focused on strengthening technical skills and capacity, improving environmental monitoring and establishing a solid waste management (SWM) system. The establishment of solid waste management system (Component 1) was expected to lead to better composting of organic waste, separating recyclables and depositing residual waste, thus reducing the risks of contamination. Technical assistance in strengthening the country's environmental policy framework and developing expertise (under Components 2 and 3) were to result in improved capacity for monitoring and controlling environmental impacts. The linkages between the activities, expected outcomes and the objectives were logical, however the results framework lacked a clear articulation between all multiple subcomponents.

The multiplicity of sub-components and activities was augmented by their geographic dispersion and the complexity of the institutional arrangements. For example, there were four separate implementing agencies for the subcomponents under Component 3. The team underestimated the risks associated with the multiplicity of institutions and implementing agencies, the number of project components, social and political factors, and complexities related to participation and collaboration among communities. The design was too complex and ambitious to succeed, considering limited institutional capacity of the Government and implementing agencies.

Rating

Modest

4. Achievement of Objectives (Efficacy)

Objective 1

Objective

Solid waste management system is established and that inhabitants on targeted islands use solid waste management facilities, reducing the risks of contamination associated with accumulated wastes and sea dumping.

Rationale

Outputs



- The construction of the Regional Waste Management Facility (RWMF) in Vandhoo island was supported under the project. However, equipment procurement and commissioning was not completed by project closure, and the RWMF is not operating and functional due to the need for technical adjustments and shortage of funds. According to the ICR (p.20), the Government is committed to allocating funds to the RWMF, which is expected to become operational in early 2018. In addition, the ICR refers to the new IDA project that will provide financial support to address procurement needs, testing, and commissioning.
- The Island Waste Management Centers (IWMCs) were set up on 22 islands. 12 out of 22 islands (55%) have operating IWMCs to segregate waste and 36% are composting organic waste. The project achieved slightly higher results than the original target of 50% of segregating wastes. Composting is practiced in 8 of the 22 islands (36%), which is lower than original target of 50%.
- 6 of the 22 islands (27%) of households are implementing user-pay systems for waste management services against the targeted 50%. Absence of basic logistics (pick-up tricycles, trucks, etc.) in some islands has prevented effective implementation of waste management.
- The Island Waste Management Plans (IWMP) with outlines for IWMCs were completed for all 22 islands, and endorsed by the Island Councils and approved by the Environmental Protection Agency. They are expected to be implemented upon operationalization of the RWMF.
- 60 community members in all inhabited islands were trained on solid waste management, including at least one member from 45 inhabited islands in the region (not only the participating islands).

Outcomes

12 out of 22 islands (55%) are reported to have no observed spillage. This is a subjective assessment based on visual observations. The amount of observed spillage can only be determined when the waste transfer vessel becomes operational for off-island disposal of residual waste. The ICR (p.viii, 18) reports that some of the islands continue to burn waste and waste spillage into the sea observed near some IWMCs. In addition, waste collection, segregation and transportation system on participating islands is not functional because the project did not factor local waste management cost, especially for islands with lower population.

Rating

Negligible

Objective 2

Objective

To build human and technical capacity for environmental management so that the environmental dimension is integrated in the planning process using information and expertise developed in the project.

Rationale

Outputs



- The national geographic information system (NGIS) was developed to provide the spatial database and planning capacity to help integrate the environmental dimension in planning. It is accessible to all government agencies.
- 100% participation of island communities was achieved in the assessment, monitoring and stewardship of fisheries and coral reefs (above the targeted 50%)
- 27 students were enrolled in the project-supported environmental management undergraduate course at the National University of Maldives (the achievement against the target is difficult to establish as it was set in percentage). The University has taken full responsibility for sustaining the course with local resources.
- 26 officials were trained from various organizations, including MNU, EPA, NGIS and MEE.
- The Marine Research Centre completed three baseline reports on coral reef ecosystem, reef fishery and bait fishery monitoring for the North Province and developed 16 monitoring protocols. Data collected by the bait samplers employed under the project was analyzed and compiled into a comprehensive report in 2014 and a national bait fishery management plan and best practice guide with a code of conduct for bait fishermen was also developed. Resources were secured for piloting the coral reef monitoring protocols under the Maldives Climate Change Trust Fund (CCTF).

Outcomes

The NGIS compiles data which is available for policy-making and planning and environmental management needs of the regulatory agencies. At project closure, the NGIS was used by four government agencies, i.e., the Ministry of Housing, Marine Research Center (MRC), Water Department, and the Maldives Land Survey Authority (MLSA) (as per target).

Out of the 20 graduates from the environmental management program of the National University of Maldives, 17 are employed in government jobs related to the environment, 3 are working in the private sector, one is working with an international agency engaged in environmental management-related project, and one is studying for the postgraduate level.

The progress made in monitoring and policy improvements resulted in the certification of the Government for environmentally sustainable marine fishery by the Marine Stewardship Council. Based on the developed best practice guides and monitoring protocols for fisheries and coral reefs, in 2013 the Government increased the protected area of the reefs fringing the resort islands to replenish the bait fishery from 100m to 1,000m. However, as reported by the ICR (p.19), resource constraints have prevented the government from continuing the related monitoring since 2014.

Rating

Substantial

5. Efficiency



Economic and financial analyses

At appraisal, economic benefits of solid waste management were assessed based on a cost effectiveness assessment. This involved comparing the project option of establishing a regional waste management facility serving four atolls to the next best alternative. The results indicated that the project option of developing a regional (i.e. shared) waste disposal facility for residual waste was more cost effective, than a stand-alone facility on each island, despite the high costs of transportation. The calculations were based on a 12 percent discount rate over 15 years. The net present value (NPV) of costs of the project approach was US\$8.6 million while individual island-based options ranged from US\$23 million to US\$63 million (PAD, Annex 9). As the ICR (p.39) reports at closure, the project did not take into consideration that all the islands faced substantial difficulties of waste collection due to poor logistics of the process. Various stages of implementation of island specific waste management plans do not ensure an adequate waste segregation on most of them. Social Assessment (2010) reports that 98% of population practice open burning as their most popular waste disposal method, and 56% of population complain about smoke episodes from waste burning.

At closure, the ICR (Annex 3) provides a financial analysis of the island waste management facilities (IWMCs) and the regional waste management facility (RWMF) in Vandhoo, including an additional investment cost required to make the RWMF fully operational.

The current financial analysis of the RWMS does not support a full cost recovery or warrant an adequate use of its capacity. In 70% of possible scenarios, it is estimated that daily waste that can be incinerated at the RWMF (with a 40 ton/day capacity incinerator) would be less than 30tons, with a mean of about 25tons. Therefore, it is expected that the incinerator will not work regularly at full capacity and operational cost per unit of waste transferred will increase. The RWMF requires additional investments in equipment (\$0.7 million), before it becomes operational (to be funded under the new IDA project). The RWMF revenue base comprises WAMCO share of service fee (30%) from participating islands and resorts, and sales of recyclables. At present, islands' share in revenues is estimated at about 15% of total revenues, which could be lower assuming at least 15-25% non-payment rate of the service fee from participating islands. WAMCO has to cover operational and maintenance expenses associated with this investment (depreciation at MRV 8.2 million, fuel cost at MRV 277 thousand and repair/maintenance cost at MRV 1.2 million). Besides, there are substantial uncertainties associated with the future fuel price that may drive up transportation cost. There is no scenario for the RWMF to be financially viable if transportation cost increases more than 10% today and more than 40% in 10 years. The Social Assessment undertaken in 2010 estimated the average willingness to pay (WTP) was MRV 47-68 per household/month to remove wastes. Only 2 islands in Zone 2 have about 600 households, while the other islands are much less populated. Their estimated monthly WTP is far below an average full cost recovery fee (MRV 100-120 per household per month). This could be a constraint to waste collection and transportation from islands in Zone 2, which may result in insufficient volumes of feed for the RWMF. Although NPV of benefits of having clean islands is estimated at MRV 294 million (detailed analysis in Annex 3), it is not sufficient to cover operational cost of IWMCs and costs of waste transfer to the RWMF. To ensure operationalization, the proposed financial model should be reconsidered, perhaps with a larger share of the WAMCO fee covered by resorts for waste collection, given high uncertainty of WTP island households. Efficiency is rated negligible.

Efficiency Rating

Negligible



a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal		0	0 <input type="checkbox"/> Not Applicable
ICR Estimate		0	0 <input type="checkbox"/> Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

The project's development objectives were highly relevant to the challenges faced by the island communities in addressing environmental risks. The relevance of design is assessed as modest due to weaknesses in the project results framework. The project achieved the objective of building human and technical capacity for environment management to a substantial extent. The achievement of the other project objective related to the establishment and use of the solid waste management system and facilities, reducing the risks of contamination associated with accumulated wastes and sea dumping, is rated negligible. The regional waste management system was not operational at project closure, and the ex-post financial analysis does not support a cost effectiveness of the investment. Efficiency is rated negligible. The overall rating is unsatisfactory.

a. Outcome Rating

Unsatisfactory

7. Rationale for Risk to Development Outcome Rating

The main risks include the following:

- Inadequate financial, technical and institutional support for sustained functioning of the RWMF.
- Insufficient technical capacity at WAMCO for effective performance.
- Inadequate volumes of waste for efficient functioning of the 40 tons/day capacity incinerator, as tourist resorts in north region had increased from 13 in 2011 to 22 in 2015, less than forecast 37.
- The system of collection of user fees at household levels was not put in place.
- There is a technical risk related to the ability of island harbors to accommodate the larger waste transportation vessels carrying greater loads of waste.

a. Risk to Development Outcome Rating

Substantial



8. Assessment of Bank Performance

a. Quality-at-Entry

Project design was planned as a technically feasible project. But the complex project design with over-ambitious implementation arrangements that involved multiple implementing agencies and institutions, geographic dispersion of project components, lack of effective coordination among communities hindered the RWMF implementation process. The implementation challenges were underestimated, resulting in subsequent delays in identification of land, procurement of equipment and operationalization of the waste management system.

ICR (p. 24) reports that the preparation benefitted from lessons learned from previous similar operations and appropriate alternatives. Due to country's unique and specific physical and social conditions with all its geographical, technical and local challenges it became clear that the resources needed to tackle the environmental challenges far exceeded project funds. However the project preparation process had to be fast-tracked so that Maldives could account itself of its FY14 IDA allocation. It went from Project Concept Note (PCN) approval to negotiations within 6 months. That factor, likely, made it difficult to conduct a robust and in-depth analysis of the risks related to the setting up a RSWM system in the Maldives and it possibly hindered team's timely action to offer an adequate mitigation measures to support progress in implementation. The proper cost estimates especially for the RWMF was not done in advance and it appeared to be a significant barrier during implementation.

As indicated in ICR (p. 8), the insufficient background analysis prevented the design from building in the risks associated with financial viability and sustainability of integrated waste management operations within the geographical conditions of the Maldives.

The other shortcoming at Quality-at-Entry were that the Bank could have recognized that for effective functioning of the RWMF it required an efficient implementation of SWM systems at island level. However the challenges associated with the non-funded aspects such as collection, storage and on-site transportation were not well analyzed and possibly underestimated. Acknowledging that, the Bank could have provided guidance and technical support to the Government for exploring private-sector participation in waste management. (ICR, pp. 24-25). The project lacked references of participation of private sector resorts in the solid waste management strategy even though they considerably contributed into waste generation (ICR, p. 7).

Complex issues such as willingness to pay user fees, coordination and collaboration and inducing behavioral change among communities, enforcement of regulations and setting up public private partnerships for SWM were not properly articulated in the design (ICR, p. 24)

Quality-at-Entry Rating

Moderately Unsatisfactory

b. Quality of supervision

A total of 20 Implementation Status and Results Reports (ISR) were filed between April 2010 and March 2015. The quality varied, with some being very detailed while others were somewhat repetitive, possibly



reflecting lack of substantive progress to report. Ratings were changed frequently according to progress or delay in project activities.

There were four Task Team Leaders over the implementation period of 8 years. However, some specialists remained involved into the implementation process but in different roles.

The ICR (p. 25) notes that the Bank team was able to take measures such as restructuring and additional financing to smooth the difficulties caused by project design and Government reorganizations. The Bank team also ensured that fiduciary aspects (financial management and procurement) were effectively addressed and training provided as needed. The task team remained engaged with the Government and project stakeholders. The partnership has resulted in another project engagement between Maldives and the Bank to continue the improvement of SWM, based on this project.

However, there were several significant shortcomings. First, as SWM systems were problematic to commence operating, the team should have been more focused to work on those issues. The mission aide-memoires were not balanced on noting important issues which were pre-conditions for a successful SWM system or recognized them near project end. Such factors as lack of collection vehicles and storage bins at household level directly entailed delays with the IWMCs implementation. The institutional and implementation arrangements needed more attention following the devolution of planning to the provincial and island councils (ICR, p. 25-26). The supervision of safeguards was inefficient until August 2015 when social safeguards specialist started to be a part of supervision missions. That resulted in more specific and detailed aide-memoires of the project, explaining operational and financial issues related to the IWMCs. Such delayed recognition and understanding of the challenges prevented effective solutions to tackle them. ICR (p. 26) noted that Bank environment safeguards specialist succeeded in supporting the process of preparation of the Environmental and Social Impact Assessment (ESIA).

Quality of Supervision Rating

Moderately Unsatisfactory

Overall Bank Performance Rating

Moderately Unsatisfactory

9. Assessment of Borrower Performance

a. Government Performance

The Government of Maldives showed strong commitment towards addressing solid waste management issues in the country for its impact on the country's key economic sector- tourism. The Government supported the project by budgetary contributions (incremental costs incurred of the incinerator and the waste transfer vessel).

The ICR (p.27), however, notes that political changes and periodic institutional reorganizations caused uncertainties and some levels of delays. The multiple reshuffling of agencies and institutional responsibilities played a part in delaying the operationalization of the RWMF. By September 2015 the responsibility for solid waste management was shifted from FENAKA corporation, which was originally designated in 2014 to manage the RWMF to the government owned company Waste Management Corporation (WAMCO). This resulted in revision of business plans and changes in operational modalities. There was also delay in the hand-over from FENAKA due to the absence of critical staff in WAMCO for



operating the system and delays in obtaining technical international expertise. The local elections in January, 2014 delayed the creation of some Island Waste Management Committees and completion of Island Waste Management Plans, further delaying the operationalizing the regional waste management system (RWMS) and the training of the trainers. (ICR, p. 9). Afterwards, there was too little time left within the project period to build capacity at WAMCO to manage the RSWMF. The effectiveness in WAMCO's provision of waste management both in transporting waste from the islands to Vandhoo as well as management at Vandhoo cannot yet be assessed., due to a continued delay in starting operations at RWMF.

Government Performance Rating Moderately Satisfactory

b. Implementing Agency Performance

The implementing agency was the Project Management Unit (PMU) at the Ministry of Environment, Energy and Water (MEEW), then known as MHTE. Until April 2013, the PMU experienced difficulties caused by absence of Project Manager which raised concern about the need to ensure sustainability of project management capacity within MHTE.

As ICR discussed (p. 27-28), the technical and fiduciary staff at the PMU were qualified and dedicated in implementing the various components, including providing oversight, capacity building and monitoring. The PMU proved to have good familiarity with World Bank procedures as it reported on project progress and on financial management in detailed and timely manner, responsive to recommendations and requests from the Bank. The PMU was able to manage the overall environmental risks across the entire duration of the project.

The ICR (pp. 28, 34) reports on PMU success in trainings both WAMCO personnel and participants from all 22 islands within 4 atolls in the North region as a pilot example for other regions in the Maldives. It also organized and conducted a Stakeholder workshop and guided visit to the RWMF at Vandhoo. During the last year of implementation the Bank team worked effectively with the PMU to overcome the implementation hurdles to complete the construction of the RWMF. However, there were procurement delays due to financial and technical issues and contract management could have been improved. (ICR, pp. 28, 34). Procurement plans made at the central level by PMU, MEE did not reflect any consultations with the island councils to provide accurate estimations. (ICR, p. 47).

Planning for and setting up a regional SWM system was a huge challenge for the PMU due to the dispersed population among a large number of small islands, the high cost of sea transport and land scarcity (ICR, p. 31).

While there was progress raising awareness on impacts of solid waste management and safeguard measures, the PMU was not involved sufficiently with project stakeholders resulting in inadequate understanding and analysis of the root cause of poor SWM in the island.

The various changes of PMU staff throughout the project period due to political changes at the central government led to considerable delays in completing design, procurement of goods, services and consultants as well as construction of the IWMCs and RWMF (ICR, p. 34).

At project closure, the PMU worked closely with the respective Island Councils of those sites that are lagging behind to ensure all IWMCs are in operation when the RWMF system commences operating. The PMU staff gathered sound technical expertise in fiduciary and environmental aspects (ICR, pp. 21, 27).



Implementing Agency Performance Rating

Moderately Satisfactory

Overall Borrower Performance Rating

Moderately Satisfactory

10. M&E Design, Implementation, & Utilization

a. M&E Design

The ICR (p. 11) indicates that 2 DOs, 5 PDO level indicators and 13 intermediate indicators were part of the Results Framework for tracking progress toward achieving the PDO. The PAD (pp. 48-52) reports 2 DOs, 5 PDO level indicators and 12 intermediate indicators as part of the Results Framework. This could be caused by ICR consideration of revisions during implementation.

The framework was very complex and suffered from missing baselines and target values. Many indicators were not measurable or were inadequate to measure progress towards achievement of the PDOs.

Overall, there were weaknesses in the M&E framework: most of the indicators focused on project activities themselves and not on development outcomes; the framework suffered from poor or inadequately wording. (ICR, p. 11).

The followed M&E framework revisions done after 2011 were triggered by sub-components changes and project implementation delays. It made few corrections and proposed some changes which were different from those earlier agreed during Mid-term Review (MTR) (ICR, p. 11).

b. M&E Implementation

The project coordination unit (PMU) had overall responsibilities for managing M&E with information, data and reports being provided by implementing agencies and the component coordinators.

The services of an M&E expert were engaged in the early stages of project implementation to assist in the operationalization of the M&E arrangements. Reporting was done through studies/information progress on physical outputs and provided financial and procurement information. Related implementing agencies – Marine Research Center (MRC) and Environmental Protection Agency (EPA) - were involved in monitoring activities and visits, some of which were financed by the Government. However, as ICR (p. 11) noted, because of budgetary constraints occurred after 2014, EPA and MRC could not continue monitoring activities and submit monitoring reports.

Since the RWMF was not functional, there were gaps in systematic environmental monitoring to ensure compliance with the Environmental and Social Impact Assessment (ESIA) as it was required by PAD (p. 56). As ICR (p. 11) reports, by project closure, community monitoring activities were only continuing in three of the four atolls where the waste management systems were being implemented comprehensively. Six monitoring reports for the implementation of the ESMP for the RWMF were submitted prior to project closure. Due to the inadequately worded indicators and the lack of baseline data, it is difficult to judge the quality of data which tends to be mostly subjective (ICR p. 11).



The Implementation Status and Results Reports (ISRs) were timely and reasonably well detailed about project progress and issues. The Aide-memoires systematically reported on the physical and financial outputs.

c. M&E Utilization

The ICR (p. 12) reports use the physical and financial output indicators in terms of supervising progress of the works, delivery of infrastructure and services, updating the waste management related policy, and regulation and drafting an act. There are positive updates on progress done of the studies financed by the project. The ESIA's undertaken for the RWMF and the IWMCs informed the planning processes of the project activities especially the updating and/or preparation of Island Waste Management Plans for inhabited islands (ICR p. 12).

M&E Quality Rating

Modest

11. Other Issues

a. Safeguards

Environmental Safeguards: The project was classified as Category "A" as it was envisaged that the implementation of the regional solid waste management (RSWM) component - involving community-based waste recycling, island based resource recovery and composting facilities in the islands (island waste management centers) and establishment of a regional waste management facility (RWMF) for the disposal of residual municipal solid waste and medical wastes - could have potential adverse environmental impacts (PAD).

Two safeguard policies - Environmental Assessment (OP 4.01) and Natural Habitats (OP 4.04) - were triggered. According to the ICR (p. 13), during preparation the World Bank's safeguard policies were complied with. As required, an Environmental and Social Assessment Framework document (ESAF) was prepared. The ICR (p. 13) states that PAD did not clearly identify potential environmental risks associated with construction, waste transportation, treatment and operations of a RWMF and IWMCs on fragile ecosystems. The ICR reports (p. 13) staffing problem as well, which lasted until August 2015 when full-time safeguard specialist joined PMU. Due to issues with quality of the reports, there was 1,5 years delay in preparation and approval process of the ESIA for the RWMF. Because of that the feasibility study and the design were completed and construction started before mitigation measures could be incorporated into the civil works contracts. Despite that, as ICR reports (p. 13) some of the measures were met.

During implementation, Environmental and Social Management Plans (ESMPs) were prepared for civil works at the IWMCs, cleared by the PMU approved by the Bank and publicly disclosed. The study was not site-specific which possibly meant that there were not sufficient detailed consultations. (ICR, pp. 13-15). The ESMPs reports on little progress made on the ground. Spillage assessment for the islands indicates mixed implementation success, but with lack of a baseline or quantitative indicators, the findings are mainly deductive. The independent review also noted that implementation and monitoring of the IWMPs was poor



(ICR, p. 14).

b. Fiduciary Compliance

Financial Management. According to ICR (p.13), the financial management was satisfactory throughout the lifetime of the project. The PMU had qualified staff to handle financial management functions. Quarterly financial management reports, showing the categories, sources and uses of funds and Interim Unaudited Financial Reports (IUFRs) were prepared by the PMU and regularly shared with the Bank.

Procurement. The ICR reports (p. 12) that the main reasons for procurement delays were financial constraints and challenges of procuring technically sophisticated equipment into the Maldives. The construction contracts also experienced implementation delays due to poor performance of contractors. The Government system of centralized procurement for all contracts above MVR 1.5 million was another reason of delays, as the centralized mechanism lacked the staffing and appropriate expertise. The limited procurement capacity of the Ministry of Environment, Energy and Water (MEEW) challenged procurement process. The project experienced financial constraints as it was under-budgeted most of the SWM equipment costs, as ICR reports, bids often exceeded the estimated budget by more than 100%. These issues brought in some revisions of the technical and/or contract specifications and re-bidding. While the budgetary underestimation was recognized early on in project implementation (2011), the actions to address this funding shortfall took place much later (reallocation in February 2014 and AF in April 2015) which further delaying the process of finalizing and operationalizing the RWMF. Overall, procurement management was in compliance with Bank procurement processes and procedures. According to project Aide-memoires, client updated and submitted the Procurement Plan on a timely basis. The Procurement Plan was revised multiple times to incorporate enhanced thresholds, cancellations, agreed recommendations, planned dates of implementation and additions made with the AF. Contracts were awarded in accordance with the procurement plan and record keeping was satisfactory (ICR, pp. 12-13).

c. Unintended impacts (Positive or Negative)

None reported.

d. Other

12. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Unsatisfactory	Unsatisfactory	---



Risk to Development Outcome	Substantial	Substantial	---
Bank Performance	Moderately Unsatisfactory	Moderately Unsatisfactory	---
Borrower Performance	Moderately Satisfactory	Moderately Satisfactory	---
Quality of ICR		Substantial	---

Note

When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.

The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

13. Lessons

The ICR (pp. 28-29) identified a number of lessons, of which the most important are listed below with some adaptation:

- 1. There is a need for right balance funding, implementation period and design.** In a country with such unique geographical context as Maldives Islands, there is a need of sufficient time for successful implementation and analysis.
- 2. Given project's complex environmental, technical and financial settings, careful analysis of geographical, technical and local challenges is required to maximize the results of priority investments.** Project preparation timeline would allow conducting adequate assessment of complexities and local challenges.
- 3. In order to achieve objectives, the project's framework should be coherent with clear articulation between activities and outcomes.** It was conceptually desirable to integrate infrastructure focused interventions such as the RWMF with demand-side interventions (awareness raising and behavior change) and management practices (introducing new technologies and waste management practices).
- 4. Strengthen client capacity is a key for successful sustainability.** New and technical challenging sectors (establishing private-public partnerships) should be prioritized particularly if these are critical for long-term sustainability of the investment.

14. Assessment Recommended?

No

15. Comments on Quality of ICR

The ICR is candid, concise and outcome-oriented. The report is analytical and consistent in addressing the issues of infrastructure weaknesses, particularly in the area of waste management. It provides an adequate level of detail into the project implementation experience. It also provides useful lessons drawn from the project implementation. Annex 3 of the ICR-Economic and Financial Analysis- is notable for sufficient detail



on assumptions of the financial analysis and data description. A minor observation is that there was no indication of government or beneficiary cofinancing in the table yet there seems to have been some contribution. Also, the total project cost given by components at appraisal is reported differently in PAD and ICR (additional financing should not be factored in appraisal estimate).

a. Quality of ICR Rating
Substantial