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IMPLEMENTATION COMPLETION REPORT
(TF-28316)

ON A

GRANT

IN THE AMOUNT OF US\$ 2.7 MILLION

TO THE

HASHEMITE KINGDOM OF JORDAN

FOR A

GULF OF AQABA ENVIRONMENTAL ACTION PLAN

December 24, 2002

**Rural Development, Water and Environment Department
Middle East and North Africa Region**

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CURRENCY EQUIVALENTS

(Exchange Rate Effective)

Currency Unit = Jordanian Dinar JD

US\$ 1.0 = JD0.688

FISCAL YEAR

CALENDER YEAR

ABBREVIATIONS AND ACRONYMS

| | |
|---------|---|
| ARA - | Aqaba Region Authority |
| ASEZA- | Aqaba Special Economic Zone Authority |
| CEREA- | Commission for Environmental Regulation and Enforcement Affairs |
| GAEAP- | Gulf of Aqaba Environmental Action Plan |
| GCEP - | General Corporation for Environmental Protection |
| GTZ - | Gessellschaft fuer Technische Zusammenarbeit |
| JREDS - | Jordan Royal Ecological Diving Society |
| MSS - | Marine Science Station |
| NGO - | Non Governmental Organization |
| PERSGA- | Programme on the Environment of the Red Sea and Gulf of Aden |
| RSCN - | Royal Society for the Conservation of Nature |

| | |
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| Country Director: | Joseph P. Saba |
| Sector Director: | Leititia Obeng |
| Task Team Leader: | Nicole Glineur |

JORDAN
GULF OF AQABA ENVIRONMENTAL ACTION PLAN

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MAPS: IBRD 27865
IBRD 27714

| | |
|------------------------------------|--|
| <i>Project ID:</i> P005237 | <i>Project Name:</i> GULF OF AQABA EAP |
| <i>Team Leader:</i> Nicole Glineur | <i>TL Unit:</i> MNSRE |
| <i>ICR Type:</i> Core ICR | <i>Report Date:</i> December 24, 2002 |

1. Project Data

Name: GULF OF AQABA EAP
Country/Department: JORDAN

L/C/TF Number: TF-28316
Region: Middle East and North Africa Region

Sector/subsector: Central government administration (94%); Solid waste management (6%)

KEY DATES

| | <i>Original</i> | <i>Revised/Actual</i> |
|------------------------------|------------------------------|-----------------------|
| <i>PCD:</i> 08/21/1992 | <i>Effective:</i> 06/27/1996 | 06/27/1996 |
| <i>Appraisal:</i> 02/13/1996 | <i>MTR:</i> 12/15/1999 | 12/15/1999 |
| <i>Approval:</i> 06/13/1996 | <i>Closing:</i> 12/31/1999 | 06/30/2002 |

Borrower/Implementing Agency: GOJ/AQABA REGION AUTHORITY; GOJ/Subsequently ASEZA; GOJ/Aqaba Governorate; GOJ/Aqaba Municipality; GOJ/Port Authority

Other Partners: GCEP; MoT; JREDS; RSCN; Donors

| STAFF | Current | At Appraisal |
|----------------------------|-------------------|----------------|
| <i>Vice President:</i> | Jean-Louis Sarbib | Kemal Dervis |
| <i>Country Manager:</i> | Joseph P. Saba | Inder K. Sud |
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| <i>Team Leader at ICR:</i> | Nicole Glineur | Nicole Glineur |
| <i>ICR Primary Author:</i> | Douglas I. Graham | |

2. Principal Performance Ratings

(HS=Highly Satisfactory, S=Satisfactory, U=Unsatisfactory, HL=Highly Likely, L=Likely, UN=Unlikely, HUN=Highly Unlikely, HU=Highly Unsatisfactory, H=High, SU=Substantial, M=Modest, N=Negligible)

Outcome: S

Sustainability: HL

Institutional Development Impact: H

Bank Performance: S

Borrower Performance: S

| | | |
|------------------------------------|--------------------|-----|
| | QAG (if available) | ICR |
| <i>Quality at Entry:</i> | | S |
| <i>Project at Risk at Any Time</i> | No | |

3. Assessment of Development Objective and Design, and of Quality at Entry

3.1 Original Objective.

Original Objective

The primary objective of the GEF project was to enable Jordan to take the lead in establishing and

implementing a regional collaborative framework for sustainable management and protection of the Gulf of Aqaba and the conservation of its coral reef. Specific project objectives were to: (a) develop regional collaborative mechanisms for environmental management for the protection of the coastal zone and marine biodiversity; (b) develop and implement the legal framework and regulations to control transboundary pollution; (c) safeguard against oil pollution of aquifers and the marine environment; (d) establish and implement guidelines for the sustainable development of the coastal zone; (e) assess effects of wastewater seepage on transboundary groundwater table; (f) control transboundary solid waste impact; and (g) establish the Jordanian segment of the Red Sea Marine Park.

Context

The project objectives need to be assessed in the context of the overall Jordan Gulf of Aqaba Environmental Action Plan (GAEAP) which was presented in November 1993 at the Cairo meeting of the Environmental Multilateral Working Group of the Middle East Peace Process. The Jordan GAEAP comprised investments and technical assistance in six categories of activity, namely: legal and regulatory framework; institutional strengthening; infrastructure investments; marine park management; monitoring and applied research; and public awareness and environmental education. The non-GEF components were implemented by the Government of Jordan, the European Union, the Government of Japan, GTZ, and USAID/NOAA, while the GEF project focused on crucial transboundary actions, the highest priority being given to the establishment of the legal and regulatory framework for implementation of curative and preventive environmental measures addressing transboundary water issues.

Assessment of Original Objective and Design

The project objectives addressed the key needs of the country in the area of sustainable coastal zone management. In addition, they were fully consistent with the CAS discussed by the Board on October 24, 1995, particularly in its emphasis on environmentally sustainable development. The project met GEF eligibility criteria by addressing critical transboundary threats to the ecological viability of a globally significant waterbody (the Gulf of Aqaba was identified as a globally significant biogeographic zone in a 1995 World Bank/TUCN report). Potential risks were minimized by limiting the objectives to a series of closely interrelated activities to be undertaken by one competent implementing agency with the appropriate legal authority, while financing of parallel investments by donors was kept separate. The prospects for transboundary cooperation were favorable following the signing of a peace treaty between Jordan and Israel (October 24, 1994) and, despite the subsequent political circumstances between the main countries bordering the Gulf of Aqaba, progress in implementing transboundary components was maintained and outcomes were beyond expectations.

3.2 Revised Objective:

N/A

3.3 Original Components:

Under the project, the Government of Jordan, in concert with parallel efforts in Egypt and Israel, was to develop and implement priority measures to halt and prevent further pollution of the marine environment and the transboundary aquifers in the Aqaba Coastal Zone. The GEF project components, within the overall context of the Gulf of Aqaba Environmental Action Plan (GAEAP), were as follows:

- A. Development of Regulatory and Institutional Framework for Gulf of Aqaba Environmental Protection:
 - (i) Definition of overall goals, policies and guidelines for environmental management of international water transboundary issues of the Aqaba region, and establishment of collaborative mechanisms

- for coordination of relevant institutions and regional partners, i.e. Egypt and Israel;
 - (ii) Implementation of a Legislative and Regulatory Framework for the control and management of transboundary pollution;
 - (iii) Coastal Zone Management and implementation of EIA guidelines; and
 - (iv) Transboundary Environmental management, including monitoring with a regional focus.
- B. Emergency assessment of oil pollution hazards and of pollutants contained in ballast and bilge water and measures to promote waste oil recovery and reuse.
- C. Safeguarding transboundary groundwater resources through groundwater monitoring and assessment of the effects of wastewater seepage on the quality and level of the groundwater table in the Gulf of Aqaba region.
- D. Development of an integrated marine and land-based transboundary solid waste management strategy.
- E. Protection of globally important Coral Reefs through the development and implementation of the Jordanian Marine Park.

The components were appropriate to achieving the objectives set out for the project, each component being linked to the specific project objectives. They incorporated the lessons learned from previous international waters projects in the region, which indicated the need for a programmatic approach to country-based international waters projects. The choice of ARA as the implementing agency was appropriate as it had the administrative and financial management capacity and the independence of action needed to undertake these components.

3.4 Revised Components:

The only change in components resulted from the transfer of the solid waste component to GTZ. The budget for the component (\$30,000 for equipment and \$90,000 for training) was reallocated to the Visitor Center. In addition, the implementing agency, the Aqaba Region Authority (ARA), was transformed into the Aqaba Special Economic Zone Authority (ASEZA) on 14 February, 2001. All project activities and outcomes were transferred to ASEZA. The efficient Environmental Department created within ARA under the project was instrumental in influencing the organizational set-up and management systems of ASEZA. All the environmental by-laws (EIAs, Marine park, CZM, etc.) legally adopted under ARA were revised, and resubmitted for legal endorsement, to fit in the new ASEZA legal entity. These changes did not require any restructuring of the project

Chronology of extensions: The original project was appraised in February 1996 and the grant became effective on June 27, 1996, with a closing date of December 31, 1999. The project suffered two major hiatuses: the first, from November 1997 to May 1998, due to changes in the ARA management; the second from August 1998 to January 1999, due again to changes in the ARA management, which led to the paralysis of all activities and resignation of the project leader. Each of these interruptions lost about a year of project implementation and resulted in the need for extensions of the project. The first extension to December 31, 2000 was approved on December 14, 1999; a second extension to December 31, 2001 was approved on November 7, 2000; a third and final extension to June 30, 2002 was approved in December, 2001.

3.5 Quality at Entry:

Quality at entry is rated satisfactory. The project objectives were consistent with the CAS, particularly in their emphasis on environmentally sustainable development, and with Government

priorities and with the international priorities of the Red Sea littoral nations. The project specifically responded to the transboundary environmental cooperation envisaged in the Jordan-Israel peace treaty of 1994. The Bank's environmental safeguards were fully incorporated into project design. The project components were well prepared and consistent with achieving the project objectives. The choice of implementing agency, the ARA, was appropriate and the envisaged implementation period of three years was also realistic – it could not be foreseen that changes in the management of ARA would hold up project execution by two years.

4. Achievement of Objective and Outputs

4.1 Outcome/achievement of objective.

Achievement of the project objectives is rated as satisfactory. All the project objectives were met and the resources used served to obtain the outcome of improved environmental management and transboundary cooperation. In the area of regulatory and institutional development and regional collaboration, achievements exceeded expectations. In the area of transboundary cooperation, objectives were fully achieved, despite the political circumstances, because of the practical necessity for cooperation in the linked spaces of the gulf and also due to the determination of project teams on all sides not to allow politics to enter into the field of environmental cooperation. The sustainability of the main project components has been assured by their incorporation into ASEZA and by the cost recovery mechanisms established; the marine park sustainability will depend largely on improved management and enforcement of regulatory mechanisms.

4.2 Outputs by components:

A. Development of Regulatory and Institutional Framework (HS): The project's achievement in this component has exceeded expectations. It has had an enormous development impact and plays an essential role in ensuring project sustainability. The Environment Department created under the project and all of its staff were fully integrated into ASEZA. It provided staff (including of: the project; ASEZA/former ARA; Port Authority; MSS; Ministries of Health, Agriculture, and Tourism; NGOs; local industries, fishermen, etc.) essential training and experience that enabled the set-up, running, and institutional mainstreaming of an exemplary Environment Commission- setting up a precedent for the country. Chief amongst the achievements is the fact that the Aqaba region, under ASEZA, is the only region in Jordan where a legalized Environmental Impact Assessment (EIA) system is enforced (EIAs have yet to be a requirement at the national level in Jordan). It also enabled the establishment and implementation of the Marine Park as well as other activities on the ground. Achievement of outputs of each of the four sub-components is described below:

- (i) **Definition of Overall Goals and Establishment of Collaborative Mechanisms.** Two directorates, established within the Environment Commission of ASEZA, are fully operational: the Directorate of Environmental Planning and the Directorate of Environmental Supervision and Enforcement. The Directorate of Environmental Planning incorporates, among others, the environmental impact assessment, environmental inspection and auditing, and industrial pollution prevention standard-setting functions of the Project. The Directorate of Environmental Supervision and Enforcement includes divisions addressing public awareness, coastal policing and enforcement, marine pollution prevention and response, and marine park management – all central elements of the GAEAP. With regard to regulatory capacity-building, key Project elements (e.g. environmental impact assessment and environmental auditing procedures) have been fully incorporated into binding ASEZA legislation. Other elements (e.g. coastal zone management, marine park management, marine vessel pollution prevention, industrial pollution prevention) are generally mandated, with specific implementing provisions to be adopted through

subsequent regulations. Regional Cooperation efforts are another exemplary result of the project, especially in the light of the political circumstances. Active participation in the Red Sea Marine Peace Park Steering Committee meetings continues. The project has catalyzed efforts by other donors, such as the USAID MERC project, which is based on operational capacity built by the project. A joint Jordanian and Israeli sea monitoring program is being devised under the USAID MERC project. ASEZA has been confirmed as Jordan's official representative to PERSGA and has already been recognized as a leader in carrying out the PERSGA agenda, having been instrumental in increasing regional cooperation and information exchange.

- (ii) **Management of Transboundary Pollution.** The ASEZA's Environmental Protection By-Law includes provisions regulating pollution from ships, substantially reflecting the Kingdom's commitment to implementing its obligations under the International Convention for the Prevention of Pollution from Ships (MARPOL). The financial liability provisions pertaining to ship-based pollution include specified penalties per incident, damage recovery, and an additional ASEZA surcharge amounting to 25% of all assessed penalties and damages (Art. 62). Of central importance is the assignment of enforcement authority regarding marine vessel pollution. A special coastal police is to be established within ASEZA's Commission on Environment, Regulation and Enforcement Affairs, in response to the limited powers of the Royal Jordanian Navy pertaining to civilian traffic under international law. Under a draft Memorandum of Understanding between ASEZA and the Public Security Forces (police), personnel from the Public Security Forces are delegated to ASEZA to enforce marine vessel pollution prevention measures.
- (iii) **Coastal Zone Management and Implementation of E I A Guidelines.** Under the Environmental Protection By-Law for the Aqaba Special Economic Zone, environmental impact assessment (EIA) procedures are set forth in detail (Arts. 8-24 plus annexes). These procedures closely follow the EIA Guidelines developed under the GAEAP Project Preparation Advance that were adopted by the ARA Board of Governors, reflecting significant, constructive continuity between different phases of the Project. Based on the new ASEZA Master Plan and legal regulations as well as draft CZM guidelines prepared under the GAEAP, ASEZA has prepared a revised framework for the CZM Guidelines to reflect changes from ARA to ASEZA. This revised framework is to be implemented in a potential consolidation phase project.
- (iv) **Transboundary Environmental Management, including Monitoring with a regional Focus.** Regular marine water quality monitoring by the Marine Science Station (MSS) is ongoing. All equipment purchased under the project is functioning and monthly reports of monitoring data are submitted to ASEZA. The 2001 Annual Synthesis Report, which addressed comments made by the Bank, has been finalized. The Industrial Pollution prevention activity has been successfully completed and provides an exemplary model for the rest of Jordan with its zero discharge strategy. The ASEZA law outlines how audits will be carried out and, defines a pollution charge system and fining regulations for violations. The law is being implemented and fines for violations have been issued. The Geographic Information Systems (GIS) activity has been completed beyond expectations. The GIS Division, formally assigned to the Environment Department, is now supporting all the Commissions of ASEZA and is heavily involved in the planning process, e.g. land use and infrastructure development. These efforts to integrate environmental data for both planning and environmental monitoring are outstanding, providing a model of integration which demonstrates the important role GIS applications can assume in planning and decision-making while ensuring environmental sustainability.

B. Emergency Assessment of Oil Pollution Hazards (S): oil spill risk minimization and waste oil recovery. This component has been successfully completed and is rated as satisfactory. The Memorandum of Understanding between the Ports Authority and ASEZA, defining responsibilities for oil spill response and legal measures as well as outlining preventive measures for chemical oil spill prevention, has been signed. The Port Authority has upgraded all its facilities into environmental compliance under the new ASEZA laws, a notable achievement. Solid waste for instance is the Port Authority's responsibility and is subject to environmental compliance. The oil spill contingency plan has been updated. The Jordan Petroleum Refinery, together with ASEZA, has completed a system for waste oil recovery from trucks and small garages to prevent the sale of this noxious product to fuel ovens. ASEZA and Ports Authority staff have been trained in state-of-the-art oil spill prevention operations and marine vessel pollution prevention procedures. The training program was designed to help establish in depth knowledge about oil spill preparedness and response, pollution prevention, emergency cases, wastes treatment and handling from ships in legal, technical and organization contexts.

C. Safeguarding Transboundary Groundwater Resources (S): This component has been completed satisfactorily in conjunction with the monitoring committee and within the project's limits and is catalyzing larger scale efforts based on operational capacity built by the project. As a result of the groundwater study's recommendation of need for further data collection for planning purpose, ASEZA has acquired the Visual MODFLOW software to model availability of groundwater resources and carry out short and long-term simulations using various water demand scenarios. A consultant assisted in the calibration of the model and with additional essential fieldwork and data collection on the groundwater aquifer. The data collection report and the modeling exercise was completed. The model will serve to assess the annual yield of the aquifer as well as to simulate the path lines of pollution into the Gulf. It will also assist in tracing the sources of pollution in the groundwater aquifers.

D. Development of an Integrated Marine and Land-Based Transboundary Solid Waste Management Strategy: During the February 2000 mission, this component was reassessed to take account of a ARA decision to take the solid waste management function back from the private sector and hand it to the municipality. Given GTZ's readiness to provide TA and equipment, it was agreed that the component would be carried out by GTZ with GTZ funding. The budget for the component (\$30,000 for equipment and \$90,000 for training) was reallocated to the Visitor Center.

E. Protection of Globally Important Coral Reefs - Development and Implementation of the Jordanian Marine Park (S): The mandate to protect the marine environment has been clearly established under the Environmental Protection By-Law (Arts. 52-64). On January 30, 2001, the Cabinet approved Marine Park By-Law No. 22 for the Year 2001. Art. 5 of this By-Law, calling for the establishment of an "Aqaba Marine Park Committee" (which includes representation of diverse stakeholder groups), has been implemented. The committee, which is responsible for administering the Park under the chairmanship of the Commissioner for Environmental Affairs, is fully operational. The annual Marine Park Management Plan is updated on a regular basis. The last update, under the project, was finalized and subsequently adopted by ASEZA Board, pursuant to Art. 5 of the Marine Park By-Law. The Marine Park By-Law gives general enforcement powers to Park employees, public security forces and coastal policemen, with delineation of specific powers and procedures to be set forth in an instruction that is to be approved by the ASEZA Board. Zoning and infrastructure of marine park facilities have been completed, including: 4 jetties (2 funded by the project), terrestrial demarcation, toilet and shower facilities, umbrellas, parking, camping grounds, ranger posts, and first-aid station. ASEZA has constructed one additional jetty in the El Morjan beach area to provide access to bathers without damaging coral reefs. Construction has also been completed of additional toilet facilities, camping and parking demarcation and sun shades south of the of the Visitor Center as an ASEZA contribution. The Visitor Center has been completed, including

multi-media equipment, interpretation and public awareness activities. The implementation of the landscaping of the surrounding area, funded by ASEZA, is to be completed by end 2002. Rangers training and hiring is completed. The Marine Park Management Plan has been updated and subsequently adopted by ASEZA's Board. The Arabic version has been updated accordingly and its fundamental principles and supporting regulations are disseminated widely through public relations materials. The Public Awareness Specialist has been recruited as an ASEZA staff. All Marine Park brochures have been finalized and printed in Arabic and English.

Social Aspects. Response of the Aqaba community to the Marine Park Beach has been very positive, as demonstrated by the exemplary usage of the beach, particularly on weekend days, and respect for the coral reef and fishes. Recommendations of the Project's CZM specialist regarding enhancement of the public beach front have been implemented with very positive results.

NGOs, especially the Jordan Royal Ecology Diving Society (JREDs), RSCN, the Hashemite Fund and Queen Alia Foundation have been collaborating closely with ASEZA in implementing the public awareness agenda. The diving community continues to play an important role in ensuring compliance throughout the marine area of the coast through education and awareness during diving classes and direct intervention when in the water. ASEZA works closely with the diving community and meets with them regularly to provide an update to the group on ASEZA activities and to hear concerns or problems from the diving centers. Following an issue raised by the divers, i.e. the lack of public access to some of the dive sites near the Royal Diving Center, ASEZA opened a new access point just north of the RDC. Similar efforts to meet with individual stakeholder groups such as hotels and small businesses are being pursued. Continued vigilance will be necessary to ensure that availability of public access is maintained, particularly in view of the large upmarket developments which are under construction in the vicinity of the marine park.

ASEZA's staff participate in radio shows to discuss environmental issues in Aqaba and the GEF project is well known in this context. The radio show entitled "Environment and People" highlights the Aqaba region. ASEZA's Commission for Environmental Regulation and Enforcement Affairs has an Environmental Library, which is open to all staff and the public.

4.3 Net Present Value/Economic rate of return:

N/A

4.4 Financial rate of return:

N/A

4.5 Institutional development impact:

The institutional development impact has exceeded expectations. The project has played an important role in developing ASEZA's capacity and hence Jordan's ability to enhance the sustainability of its CZM operations. In particular, Jordan is now equipped with financial and productive human resources to sustain sound CZM. The main institutional features of the ASEZA's Commission for Environmental Regulation and Enforcement Affairs (CEREA) incorporate the environmental impact assessment, environmental inspection and auditing, industrial pollution prevention and standard setting functions of the project, as well as public awareness, coastal policing and enforcement, marine pollution prevention and response, and marine park management – all central elements of the project.

5. Major Factors Affecting Implementation and Outcome

5.1 Factors outside the control of government or implementing agency:

Despite the disturbed regional political context, transboundary components have been satisfactorily

implemented.

5.2 Factors generally subject to government control:

The project was stalled on two occasions, between November 1997 and January 1999, during which there were seven changes in the senior management of the project. During this period of changes, the interim management teams did not have authority to make decisions. Despite this, Government commitment to the project was very high.

5.3 Factors generally subject to implementing agency control:

The implementing agency commitment to the project objectives was high. The commitment went beyond the project to transfer project lessons and achievements into the overall implementing agency methods of working. A key element of the success of the project was the caliber and continuity of personnel implementing the project and the productive working partnership between the implementing agency and the Bank staff. ARA/ASEZA contributions through the provision of staff and infrastructure were outstandingly higher than budgeted. Since the closing of the project, there is less attention on the protection of the marine resources due to the current void in the position of the marine park manager.

5.4 Costs and financing:

Total project costs were originally estimated at US\$3.5 million, financed through a GEF grant of US\$2.7 million and Government contribution of US\$0.80 million equivalent. Total cost of the project proved to be higher (US\$3.6 million) than the original plan and the Government contribution was higher (US\$0.90 million). The Government also contributed to related activities which were outside the project, e.g., the creation of ASEZA and additional park infrastructure. In addition, parallel financing was provided by Japan (\$5.60 million) and the EU (\$1.90 million) for oil pollution prevention, and by the EU (\$0.03 million) and USAID (\$0.24 million) for pollution monitoring. All projects funds have been disbursed (99.9%).

6. Sustainability

6.1 Rationale for sustainability rating:

Sustainability is rated as highly likely. Overall, there is an adequate institutional and legal framework to sustain project impacts over the long term. The institutional and legal framework of the ASEZA has successfully incorporated most of the project's environmental objectives and, in certain areas, has even exceeded expectations as far as exemplary legislation supporting the institutional framework is concerned. The functions developed under the project are fully incorporated into ASEZA, as are the project staff. The sustainability of the marine park will depend largely on the implementation of the overall management functions of the marine park and improved enforcement of the regulatory mechanisms developed by both the project and ASEZA. Cost recovery mechanisms put in place include marine park fees (diving fees, visitor fees, and beach facility fees); issuance of permits (air emission permits, cooling water discharge permits; resource user fees for import/export of all goods to be set at .05 piasters/ton, 25% surcharge on use of port reception facilities once they exist); and fines for environmental damages, including industrial pollution and oil spills. All revenue from these fees and fines will be earmarked for the Department of Environment, Regulation and Enforcement.

6.2 Transition arrangement to regular operations:

N/A

7. Bank and Borrower Performance

Bank

7.1 Lending:

Lending performance is rated satisfactory. At the project identification stage, the Bank, in conjunction with the Government and other major stakeholders, identified the need to develop a EAP for the Gulf of Aqaba, the primary environmental "hot spot" in the region, on a collaborative basis with the Red Sea littoral states. The project identified was consistent with the Government's development strategy and with the Bank's assistance strategy for Jordan. During project preparation, the project team prepared a detailed, well researched design for the project in close collaboration with the client. The Bank brought together a highly skilled team of experts to appraise the project. Subsequent implementation was facilitated by the careful preparation and no major revisions were necessary to project design. Throughout the lending process, harmonious relations with the Borrower helped to develop a strong sense of ownership of the project.

7.2 Supervision:

Supervision performance was satisfactory. Feedback from GOJ indicates that they highly valued the Bank supervision input and team compositions. Supervision was carried out frequently - at least every six months - by a consistent team which was proactive in detecting and resolving implementation problems. Missions were well prepared with appropriate terms of reference and aide memoires and follow-up letters were well organized, focusing on key issues and solutions. The supervision team consistently provided appropriate advice to the implementing agency and agreed on action plans with the project authorities to improve implementation. Reporting of project implementation progress and the realism of project performance ratings was highly satisfactory, as was the discussion of development impacts in PSRs. Supervision of financial management was excellent and the quality of audit reports was high. These findings are in line with the highly satisfactory ratings given in the QSA3 review of project supervision.

7.3 Overall Bank performance:

Overall, the Bank's performance was satisfactory during project identification, preparation, appraisal and implementation.

Borrower

7.4 Preparation:

The implementation agency performance in the project preparation was satisfactory. Staff from the implementing agency showed a high degree of ownership and worked closely with the Bank's project team with commitment and eagerness.

7.5 Government implementation performance:

Government Implementation Performance has been satisfactory. Government contributions to the project were timely and have exceeded planned contributions, with substantial investments being made in related activities. The project benefited from the continuity and the high caliber of staff both at the leadership and implementation levels.

7.6 Implementing Agency:

The performance of the implementing agency has been satisfactory, despite two hiatuses early in the project (see para 3.4), thanks partly to the Government policy of strengthening ASEZA. The high caliber staff made available to the project were evidence of the strong commitment to the project and were largely responsible for its successful implementation. The agency submitted meaningful quarterly reports on a regular basis and provided satisfactory financial management of the project. The implementation of cost recovery mechanisms has been successful. The project was able to leverage its contribution to have a major influence on the new implementing agency and attract other donors' funding.

7.7 Overall Borrower performance

Overall Borrower performance was satisfactory at all levels throughout the preparation and implementation process, with strong stakeholder commitment.

8. Lessons Learned

Project Design

- The intensive preparatory work on a CZM framework paid off. The goals and objectives agreed amongst the stakeholders were clearly defined using a participatory approach of all stakeholders, including the local population. The consensus obtained on the framework greatly facilitated the implementation of a sound coastal zone management plan.
- In the project design, the function of the project manager called for international expertise and experience in state-of-the-art coastal zone management to transfer knowledge to the country. The first two international managers had difficulties coping with the idle periods of decision making in ARA. The subsequent hiring of a national with top managerial experience and environmental expertise enabled adequate handling of local politics and delegation of authority to the project.

Project Implementation

- Strong stakeholder commitment and the realization that positive economic returns can flow from investment in environmentally sound projects promoted outstanding achievements.
- The project demonstrated how demand driven interventions based on an effective CZM framework with stakeholder participation, including involvement of the general public, can bring about effective management of the environment through the active involvement of all stakeholders
- The project showed that crossing institutional borders through having different ministries and organizations (Health, Port Corporation, private sector, NGOs, police) participate together in training and capacity building activities can enhance the overall effectiveness of implementation.
- On-the-job training and motivational tools contributed to the full integration of managerial and operational project staff and of the project's Environmental Department, created by the project, into ASEZA. This was an essential element towards sustaining the achievements of the project.
- Well designed cost recovery mechanisms with strong enforcement can help to ensure financial sustainability. The cost recovery mechanisms developed by the project and currently in force help to deter further environmental pollution as well as serving as revenue sources to assist sustainability.
- Initiating a dialogue with polluters can bring about a consensus and lead to solutions. During implementation, project staff initiated a dialogue with three major producers of waste oil to tackle the issue of land based oil recovery. Not only was the dialogue successful in leading to group consensus on the issue, but a national oil refinery agreed to accept and pay JD35/ton for the recovered waste oil, thereby eliminating a source of pollution.

9. Partner Comments

(a) Borrower/implementing agency:

Introduction

The GEF grant agreement became effective on June 27, 1996. Early stages of project implementation were very productive. However, they were interrupted by two periods of change in the management of the implementing agency, Aqaba Region Authority, the first in 1997 and the second in 1998. It was not until 1999 that the project resumed a rate of rapid and effective implementation. The delays incurred required a series of three extensions to the project, until June 30, 2002.

Project Objectives and Components

The project objectives' focus on transboundary cooperation reflected hopes for mutual cooperation in addressing the needs of the Gulf of Aqaba in the aftermath of signing the peace treaty between Jordan and Israel. The emphasis on a combination of institutional development and investment activities recognized the need for capacity building supported by practical sub-project activities. Choice of components was appropriate to the achievement of these objectives.

Achievement of Project Objectives

In the area of transboundary cooperation, objectives were fully achieved despite the political circumstances. This is because of the practical necessity for cooperation in the confined spaces of the gulf and also due to the determination of project teams on both sides not to allow politics to enter into the field of environmental cooperation. In the field of institution building, achievement has surpassed expectations. The project's developments of the regulatory and institutional framework have been incorporated into the environmental regulations and execution capabilities of ASEZA.

Implementation Results by Component

A. Developing the Regulatory and Institutional Framework: has been extremely successful. All of its sub-components have been realized in the legal basis of ASEZA.

B. Oil Pollution Hazards: has been successful. Particularly noteworthy is the fact that the strict laws are being enforced: two ships have been successfully prosecuted to date. Jordan is a signatory to MARPOL.

C. Safeguarding Transboundary Groundwater Resources: ASEZA completed the assessment and is monitoring the state of the aquifers using a computer model and is sharing the results with its neighbor. Due to careful environmental management, the state of the aquifers is not an issue.

D. Solid Waste Management: has been successfully undertaken with GTZ financing and the municipal service is now excellent, although there are still problems with collection of plastic bags.

E. Marine Park Management: is the most important physical output of the project. The preservation of 8 kilometers of shoreline is legally assured and physically enforced by a team of rangers with two patrol boats. Reef fishing has been stopped and recreational fishermen have been compensated through training and other activities. Professional fishermen have been assisted by the gift of two boats from the King to enable them to fish off the coast of Yemen. The Visitor Center financed under the project has been completed; concessions for its cafeteria and gift shop are being bid for by the private sector. Collaboration with NGOs, i.e. JREDS, has contributed to Marine Park management.

Experience Related to Implementation

Implementation has been satisfactory. Sustainability has been assured by the absorption of the GEF project components and staff into ASEZA. Implementation was facilitated by the special status of the Aqaba region which gives it a certain independence in decision making.

Implementing Agency Performance

The performance of the implementing agency has been excellent, thanks partly to the Government policy of strengthening ASEZA. Government contributions to the project have exceeded planned contributions. The GEF project has been able to leverage its contribution to have a major influence on the new implementing agency and attract other donors' funding.

World Bank Performance

Preparation: the project team produced a well designed project document. It prepared a project which built up capacities and did not create dependencies. No revisions were necessary to project design.

Supervision: was very good. The external presence of the Bank helped to influence project implementation; good, action oriented aide-memoires helped ensure follow-up. The Bank provided support when needed. The integration into the supervision teams of CZM legal and other experts responded to our needs.

Lessons Learned

The continuity of the relationship with the World Bank is important. With the creation of ASEZA and the integration of the project components, the Bank was able to call upon the same external coastal zone management experts to develop the detailed steps to integration. The support of the GEF and the World Bank was instrumental to GOJ in addressing conservation issues. The prolongation of this relationship through the preparation and implementation of a second phase project, which would include updating of the CZM plan and focus on conservation of the waterfront and the carrying capacity of competing uses, would be highly desirable.

(b) Cofinanciers

(c) Other partners (NGOs/private sector):

10. Additional Information

N/A

Annex 1. Key Performance Indicators/Log Frame Matrix

Outcome / Impact Indicators:

| Indicator/Matrix | Projected in last PSR | Actual/Latest Estimate |
|---|--|---|
| (A) Institutional and Regulatory Framework. | Enforcement and Policing Actions and transboundary cooperation | Environmental unit staffed and trained, performance standards adopted Enforcement regulations adopted and policing actions undertaken; active transboundary cooperation with staff training exchanges as well as monitoring techniques shared. |
| (B) Oil Spill measures and Waste oil recovery | Demonstration actions for waste oil recovery | Demonstration actions underway |
| (C) transboundary groundwater protection. | First phase groundwater assessment, including definition of shallow groundwater contamination. | Given the political circumstances, sound progress. Transboundary groundwater assessment completed |
| (D) Transboundary solid-waste management. | Demonstration actions for litter control, collection and landfill management. | N/A |
| (E) Protection of coral reefs | Fully operating marine park. | Staff in place, boundaries defined, management plan completed, policing and enforcement actions in place |

Projected in last PSR = Projected Outcome in Appraisal Document of May 1996

Output Indicators:

| Indicator/Matrix | Projected in last PSR | Actual/Latest Estimate |
|------------------|-----------------------|------------------------|
| | | |

End of project

Annex 2. Project Costs and Financing

Project Cost by Component (in US\$ million equivalent)

| Project Cost By Component | Appraisal Estimate US\$ million | Actual/Latest Estimate US\$ million | Percentage of Appraisal |
|--|--|--|--------------------------------|
| A. Development of Regulatory and Institutional Framework | 1.95 | 2.08 | 107 |
| B. Oil Pollution Hazards | 0.10 | 0.09 | 90 |
| C. Transboundary Groundwater resources | 0.10 | 0.10 | 100 |
| D. Solid Waste management | 0.15 | 0.00 | 0 |
| E Marine Park | 0.95 | 1.33 | 140 |
| Total Baseline Cost | 3.25 | 3.60 | |
| Physical Contingencies | 0.25 | 0.00 | 0 |
| Total Project Costs | 3.50 | 3.60 | |
| Total Financing Required | 3.50 | 3.60 | |

Project Costs by Procurement Arrangements (Appraisal Estimate) (US\$ million equivalent)

| Expenditure Category | Procurement Method | | | N.B.F. | Total Cost |
|-----------------------------|---------------------------|------------------------|--------------------------|------------------------|------------------------|
| | ICB | NCB | Other² | | |
| 1. Works | 0.00 (0.00) | 0.48 (0.48) | 0.00 (0.00) | 0.14 (0.00) | 0.62 (0.48) |
| 2. Goods | 0.22 (0.22) | 0.31 (0.31) | 0.14 (0.14) | 0.05 (0.00) | 0.72 (0.67) |
| 3. Services | 0.00 (0.00) | 0.00 (0.00) | 1.50 (1.50) | 0.42 (0.00) | 1.92 (1.50) |
| 4. Miscellaneous | 0.00 (0.00) | 0.00 (0.00) | 0.05 (0.05) | 0.19 (0.00) | 0.24 (0.05) |
| 5. Miscellaneous | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) |
| 6. Miscellaneous | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) |
| Total | 0.22 (0.22) | 0.79 (0.79) | 1.69 (1.69) | 0.80 (0.00) | 3.50 (2.70) |

Project Costs by Procurement Arrangements (Actual/Latest Estimate) (US\$ million equivalent)

| Expenditure Category | Procurement Method | | | N.B.F. | Total Cost |
|----------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| | ICB | NCB | Other ² | | |
| 1. Works | 0.00 (0.00) | 0.71 (0.66) | 0.00 (0.00) | 0.00 (0.00) | 0.71 (0.66) |
| 2. Goods | 0.05 (0.05) | 0.30 (0.27) | 0.00 (0.00) | 0.00 (0.00) | 0.35 (0.32) |
| 3. Services | 0.00 (0.00) | 0.00 (0.00) | 0.60 (0.53) | 0.00 (0.00) | 0.60 (0.53) |
| 4. Miscellaneous | 0.00 (0.00) | 0.00 (0.00) | 1.94 (1.19) | 0.00 (0.00) | 1.94 (1.19) |
| 5. Miscellaneous | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) |
| 6. Miscellaneous | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) |
| Total | 0.05 (0.05) | 1.01 (0.93) | 2.54 (1.72) | 0.00 (0.00) | 3.60 (2.70) |

^{1/} Figures in parenthesis are the amounts to be financed by the Bank Loan. All costs include contingencies.

^{2/} Includes civil works and goods to be procured through national shopping, consulting services, services of contracted staff of the project management office, training, technical assistance services, and incremental operating costs related to: (i) managing the project; and (ii) re-lending project funds to local government units.

Project Financing by Component (in US\$ million equivalent)

| Component | Appraisal Estimate | | | Actual/Latest Estimate | | | Percentage of Appraisal | | |
|--|--------------------|-------------|------|------------------------|-------------|------|-------------------------|--------------|------|
| | Bank | Govt. | CoF. | Bank | Govt. | CoF. | Bank | Govt. | CoF. |
| A. Development of Reg. and Inst. Framework | 1.44 | 0.65 | | 1.38 | 0.70 | | 95.8 | 107.7 | |
| B. Oil Pollution Hazards | 0.10 | 0.00 | | 0.09 | 0.00 | | 90.0 | 0.0 | |
| C. Transboundary Groundwater Resources | 0.10 | 0.00 | | 0.10 | 0.00 | | 100.0 | 0.0 | |
| D. Solid Waste Mgt. | 0.15 | 0.00 | | 0.00 | 0.00 | | 0.0 | 0.0 | |
| E. Marine Park | 0.91 | 0.15 | | 1.13 | 0.20 | | 124.2 | 133.3 | |
| Total | 2.70 | 0.80 | | 2.70 | 0.90 | | 100.0 | 112.5 | |

Annex 3. Economic Costs and Benefits

N/A

Annex 4. Bank Inputs

(a) Missions.

| Stage of Project Cycle | No. of Persons and Specialty (e.g. 2 Economists, 1 FMS, etc.) | | Performance Rating | |
|--|--|-------|--|--|
| | Month/Year | Count | Specialty | Implementation Progress Development Objective |
| Identification/Preparation 08/1992 Appraisal/Negotiation 02/1996 Supervision | 12/1996 | 2 | Task Manager (1), Environmental/Cons. (1) | S |
| | 06/1997 | 2 | Task Manager (1); Environmental/Cons. (1) | S |
| | 10/1997 | 2 | Task Manager (1); Environmental/Cons. (1) | S |
| | 07/1998 | 2 | Task Manager (1); Environmental/Cons. (1) | S |
| | 01/2000 | 1 | Task Team Leader (1) | U |
| | 06/2000 | 2 | Environmental Lawyer (1); Environmental Consultant (1) | S |
| | 06/2000 | 2 | Task Team Leader (1); Environmental Lawyer (1) | S |
| | 05/2001 | 1 | Task Team Leader (1) | S |
| | 06/2001 | 5 | Task Team Leader (1); UNEP Consultant (1); Legal Consultant (1); CZM Consultant (1); Infrastructure Spec. (1) | S |
| | ICR | | | |
| | 11/2002 | 2 | Sr. Environmental Spec/TTL (1); Fin Mgt Spec/Consultant (1). | S |

(b) Staff:

| Stage of Project Cycle | Actual/Latest Estimate | |
|----------------------------|------------------------|-------------|
| | No. Staff weeks | US\$ ('000) |
| Identification/Preparation | | 70.0 |
| Appraisal/Negotiation | | 90.6 |
| Supervision | | 242.1 |
| ICR | | 14.5 |
| Total | | 417.2 |

Annex 5. Ratings for Achievement of Objectives/Outputs of Components

(H=High, SU=Substantial, M=Modest, N=Negligible, NA=Not Applicable)

| | <i>Rating</i> |
|---|---|
| <input checked="" type="checkbox"/> <i>Macro policies</i> | <input type="radio"/> H <input type="radio"/> SU <input type="radio"/> M <input type="radio"/> N <input type="radio"/> NA |
| <input checked="" type="checkbox"/> <i>Sector Policies</i> | <input type="radio"/> H <input type="radio"/> SU <input type="radio"/> M <input type="radio"/> N <input type="radio"/> NA |
| <input checked="" type="checkbox"/> <i>Physical</i> | <input type="radio"/> H <input type="radio"/> SU <input type="radio"/> M <input type="radio"/> N <input type="radio"/> NA |
| <input checked="" type="checkbox"/> <i>Financial</i> | <input type="radio"/> H <input type="radio"/> SU <input type="radio"/> M <input type="radio"/> N <input type="radio"/> NA |
| <input checked="" type="checkbox"/> <i>Institutional Development</i> | <input type="radio"/> H <input type="radio"/> SU <input type="radio"/> M <input type="radio"/> N <input type="radio"/> NA |
| <input checked="" type="checkbox"/> <i>Environmental</i> | <input type="radio"/> H <input type="radio"/> SU <input type="radio"/> M <input type="radio"/> N <input type="radio"/> NA |
| <i>Social</i> | |
| <input checked="" type="checkbox"/> <i>Poverty Reduction</i> | <input type="radio"/> H <input type="radio"/> SU <input type="radio"/> M <input type="radio"/> N <input type="radio"/> NA |
| <input checked="" type="checkbox"/> <i>Gender</i> | <input type="radio"/> H <input type="radio"/> SU <input type="radio"/> M <input type="radio"/> N <input type="radio"/> NA |
| <input type="checkbox"/> <i>Other (Please specify)</i> | <input type="radio"/> H <input type="radio"/> SU <input type="radio"/> M <input type="radio"/> N <input type="radio"/> NA |
| <input checked="" type="checkbox"/> <i>Private sector development</i> | <input type="radio"/> H <input type="radio"/> SU <input type="radio"/> M <input type="radio"/> N <input type="radio"/> NA |
| <input checked="" type="checkbox"/> <i>Public sector management</i> | <input type="radio"/> H <input type="radio"/> SU <input type="radio"/> M <input type="radio"/> N <input type="radio"/> NA |
| <input type="checkbox"/> <i>Other (Please specify)</i> | <input type="radio"/> H <input type="radio"/> SU <input type="radio"/> M <input type="radio"/> N <input type="radio"/> NA |

Annex 6. Ratings of Bank and Borrower Performance

(HS=Highly Satisfactory, S=Satisfactory, U=Unsatisfactory, HU=Highly Unsatisfactory)

6.1 Bank performance

Rating

| | | | | |
|---|--------------------------|------------------------------------|-------------------------|--------------------------|
| <input checked="" type="checkbox"/> Lending | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input checked="" type="checkbox"/> Supervision | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input checked="" type="checkbox"/> Overall | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |

6.2 Borrower performance

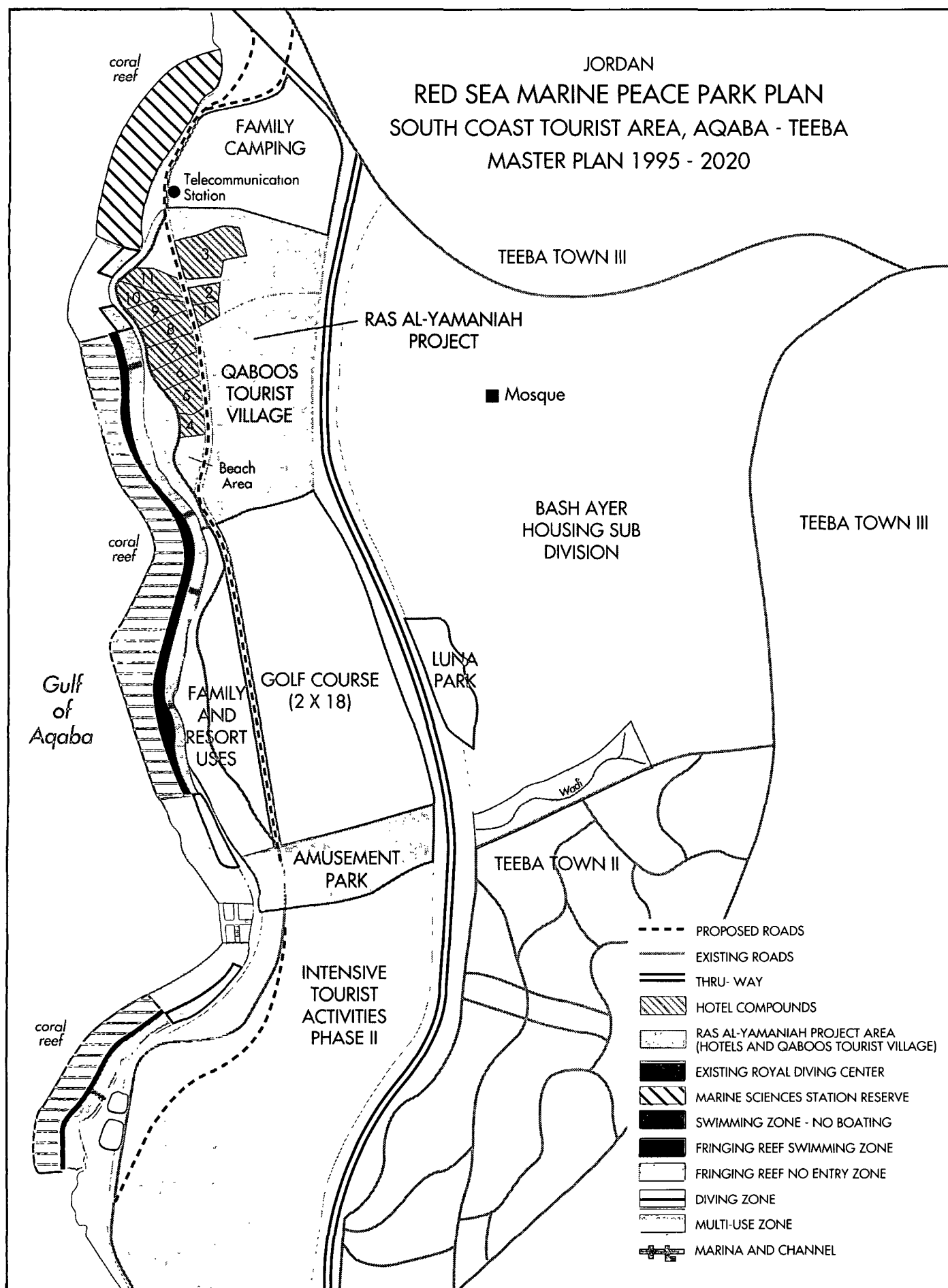
Rating

| | | | | |
|---|-------------------------------------|------------------------------------|-------------------------|--------------------------|
| <input checked="" type="checkbox"/> Preparation | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input checked="" type="checkbox"/> Government implementation performance | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input checked="" type="checkbox"/> Implementation agency performance | <input checked="" type="radio"/> HS | <input type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input checked="" type="checkbox"/> Overall | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |

Annex 7. List of Supporting Documents

1. Aide Memoires, Back-to-Office Reports and Project Status Reports.
2. Project Progress Reports.
3. Consultant Study reports financed under the project.
4. Project Document of the Gulf of Aqaba Environmental Action Plan, May 1996, Report No. 15290 JO.
5. Quality of Supervision Assessment, QSA3, QAG, 1999.

MAP SECTION



JORDAN
THE GULF OF AQABA

Aqaba
Town

JORDAN

ARAB REPUBLIC
OF EGYPT

SAUDI ARABIA

0 10 20 30
KILOMETERS

The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of The World Bank Group, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries

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