

UNITED NATIONS DEVELOPMENT PROGRAMME

REPUBLIC OF YEMEN

PROTECTION OF THE MARINE ECOSYSTEM OF THE RED SEA COAST

YEM/92/G31

YEM/97/G32

Report of the Terminal Evaluation Mission

Mark Infield

Paul Nichols

Ibrahim Sharaf Al Deen

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Acronyms and Abbreviations

EIA	Environmental Impact Assessment
EPC	Environment Protection Council
GEF	Global Environment Facility
GIS	Geographical Information System
GoY	Government of Yemen
IFAD	International Fund for Agricultural Development
MFW	Ministry of Fish Wealth
MPD	Ministry of Planning and Development
MSRRC	Marine Sciences and Resources Research Centre
PERSGA	Programme for the Environment of the Red Sea and the Gulf of Aden
PMU	Project Management Unit
SWOT	Strengths, Weaknesses, Opportunities and Threats analysis
UNDP	United Nations Development Programme
UNOPS	United Nations Office for Project Services

I. Executive Summary

The evaluation mission reported on here is the formal Terminal Project Evaluation. The Project was designed during 1991 and 1992 and was to be initiated in 1993. Delays were experienced due to civil war in the Republic of Yemen and delays in the tendering and contracting process. The Project was finally initiated in December 1995 and scheduled to run until June 1999. In fact, following modifications resulting from a technical review, Project activities in Yemen ended in August 1998. Work continued in Australia into the first few months of 1999 on production of a book that summarises the results of the Project.

Delays in making final payments to the international consultants and in holding the final Tripartite Review Meeting led to delays in the commissioning of this terminal external evaluation, which was undertaken in April 2001. Approximately 31 months had elapsed, therefore, between the effective end of the Project in Yemen and this evaluation. During this period, most of the institutional memory of the Project within the Global Environment Facility and the United Nations Office for Project Services was lost.

The Project remains administratively open and has a balance of approximately US\$120,000 unexpended¹.

Project concept and planning

In reviewing the concept and planning of the Project the Evaluation Team considered the following questions:

- Was there a sound and adequate rationale for the Project?
- Were the assumptions made correct?
- Was the Project design appropriate and plausible?

Rationale

The stated main or long-term objective of the Project was to protect the marine ecosystems of the Yemen Red Sea coast and thereby both its fishery and its biodiversity. This was to be achieved by assisting the Republic of Yemen to develop and implement a monitoring system and through training of Yemeni counterparts in monitoring procedures.²

The Project's rationale was that developing the capacity of the Government of Yemen to monitor and report on its marine environment would enhance protection of the marine environment. This would support biodiversity conservation objectives and feedback into development interests by promoting the sustainable use of the marine resource. The capacity of the Government of Yemen to monitor the Red Sea marine environment was low, so a Project designed to strengthen this capacity appeared sound. In addition, a range of factors was negatively affecting the fish resource. Once again, this supported the proposal to put in place a national capacity to monitor the marine environment.

Assumptions and conditions

The logic of the Project made critical assumptions that were not rigorously examined. As a result the Project may have focused on issues that, though important, were not the primary causes of damage to Yemen's fishery or its biological diversity:

¹ UNOPS Memo: 04/05/2001.

² Project Document; Brief description, Page 1.

- The Project assumed that improved monitoring would lead to more sustainable use of the fishery resource. The links between marine habitats and fish production were not adequately examined to support this logic.
- The Project design did not take into account the impact of unregulated fishing on Yemen's Red Sea fishery but focused on issues that were not the primary threats to the fishery or biodiversity.

The Evaluation Team concludes that:

The rationale of the Project was appropriate to the situation in Yemen and the approach based on capacity building was sound. However, assumptions about the nature of the problem were not tested or examined closely enough.

Project design

Project design was poor in terms of both process and product. The Project design did not employ a rigorous or inclusive process. The absence of a logical framework raises concerns over the structure of the Project and the plausibility of its argumentation. The Project Document has significant shortcomings:

- Indicators of progress and achievement were not developed, making formal evaluation difficult³.
- The problems to be addressed were poorly identified, leading to a difficulty in relating the Project's suite of activities to a desired 'end of Project' position.
- The absence of a single, clearly defined purpose that the Project was committed to achieve meant that the Project's immediate objectives were not logically linked.
- The Project was over-ambitious both in terms of its expected impact and in the work to be undertaken.
- The design failed to take adequate account of other established projects in Yemen at the time, especially the Fourth Fisheries Development Project, in terms of related field activities, achievements and data relevant to the Red Sea marine environment.
- The analysis of stakeholders and Project partners was weak and resulted in an institutional framework that failed to deliver some results or promote the sustainability of those that were achieved.

As a Project's logic should be evident in the hierarchy of its objectives, the Evaluation Team generated one from the Project Document – **Exhibit 2**, and then re-examined the logic – **Exhibit 3**. A single Project purpose was evolved from the statement of the Project's main objective⁴. The four immediate objectives originally established were used as the basis for the establishment of four results. These suggest the logic of the design. Activities in the original design were located within them, demonstrating in several cases that the logic of their original inclusion in the Project Document was weak - refer **Exhibit 4**).

The logical framework demonstrates the core strategy of the Project's design. It was necessary to separate out a supra goal from the overall goal. Even then it can be

³ Though the Project Document contains sections titled "Success criteria" these were not specific with regard to quantity, quality, timing and location.

⁴ Project Document; Brief Description. Page 1.

seen that the relationship between the purpose and the supra goal is tenuous. There was little hope that a three-year, three million dollar Project could actually *achieve* the protection of the Red Sea marine ecosystems. But it was also unclear how the establishment of a monitoring facility was going to contribute directly towards the protection of the Red Sea marine ecosystems.

<i>Supra goal (Long term objective)</i> Marine ecosystems of the Red Sea including coral reefs and other critical habitats important to fisheries and to maintaining high biodiversity protected <i>Overall goal</i> National capacity to protect and manage the marine environment of the Yemen Red Sea coast strengthened.
<i>Project purpose (not indicated in Project document)</i> Sustainable Yemeni institution for monitoring, analysis and reporting on the Red Sea marine environment to advise policy and decision makers established and operational.
<i>Results (Immediate objectives)</i> 1. Data collection and monitoring systems designed and implemented. 2. Sustainable institution for monitoring the marine environment established. 3. Participation in regional initiatives and programmes concerning the Red Sea environment supported. 4. Protection of Marine Ecosystems of the Red Sea Coast Project implemented.
<i>Activities [see Exhibit 4]</i>

This framework provides the basic text for the evaluation. The Evaluation Team concluded that:

The logic of the design was not plausible. Several outputs were unrelated to the achievement of results. Though the results were sufficient to achieve the purpose proposed by the Evaluation Team, it was not clear how this would contribute towards the intended and desired impact of the Project; and

The Project was over-ambitious and unrealistic, both in its overall goal and in its activities.

The operating environment

The Project was implemented in difficult conditions. Civil war delayed the implementation of the Project and subsequent security problems cause difficulties in Project implementation.

The key role played by the Ministry of Fish Wealth as the Government Implementing Agency for the Project was highly problematic. Despite the evident environmental nature of the Project, the Ministry seemed determined to subvert this and turn the Project into a fisheries project. The ensuing strains between the Ministry, other Yemeni partners in the Project, and the project executors led to serious institutional problems which were never adequately resolved.

Implementation and achievements

In seeking to assess the Project's achievements, and the extent to which planned objectives were met, the Evaluation Team undertook a progress review and situation analysis. Implementation of Project results and activities was examined for strengths and weaknesses; opportunities and threats were identified; and implications or recommendations developed. This 'SWOT' analysis provides the basis for the report's findings and recommendations - see **Exhibit 1**.

Result 1. Data collection and monitoring systems designed and implemented

The Project collected large amounts of high quality data on the marine ecosystems of the Red Sea through field surveys at numerous sites. These data, along with other data and information from a number of sources, was stored in computer databases and formed the basis for the development of a Geographic Information System. However, the Evaluation Team concluded that the Project had not left in place on its completion anything that could be described as a workable system for the collection, analysis and interpretation of data for routine, ongoing monitoring of the marine environment. As such the data collected represents simply a 'snapshot' of the situation at the time of the Project, and is rapidly becoming outdated. The failure of the Project to establish and document a protocol for the regular monitoring of specific variables at specified sites means that this result was not achieved and therefore did not contribute towards the protection of Red Sea marine ecosystems.

Result 2. Sustainable institution for monitoring the marine environment established

The Project established a facility for monitoring the marine environment comprising a substantial building, a team of trained national experts and the necessary equipment and materials. This facility has since been established in law by decree as the Hodeidah Branch of the Marine Science and Resource Research Centre of the Ministry of Fish Wealth. The Evaluation Team found, however, that Government financial support is not sufficient for the centre to carry out surveys or undertaking monitoring of sites. Furthermore, the level of training was not sufficient for the skills imparted to be sustained by the majority of national counterparts.

Result 3. Participation in regional initiatives and programmes concerning the Red Sea environment supported

The Project contributed towards regional programmes concerning the Red Sea through its support to the Programme for the Environment of the Red Sea and Gulf of Aden (or 'PERSGA'). Suitable sites for Marine Protected Areas in Yemen, which would contribute to a regional conservation effort, were not adequately investigated by the Project, however, and no guidelines for their management were developed as specified in the Project document. The current involvement of Yemeni scientists in PERSGA's Strategic Action Plan does suggest that the Project improved and strengthened the capacity of Yemen to participate effectively in regional initiatives.

Result 4. Protection of Marine Ecosystems of the Red Sea Coast Project implemented

Many of the Project's activities were satisfactorily carried out. These included the provision of suitably qualified international technical advisors, national counterparts, and equipment. However, the Evaluation Team identified serious shortcomings in implementation of the Project, including the failure of the Ministry of Fish Wealth to play its role, the fact that neither the Steering Committee nor Technical Committee that were intended to oversee Project implementation met during the course of the Project, and the absence or poor quality of a number of the Project's deliverables and technical and evaluation reports.

Project purpose and long term objective

The fundamental question that the Evaluation Team attempted to answer is:

Has the Project been instrumental in protecting the marine ecosystems of the Red Sea?

In considering this the team reviewed the activities designed and implemented, and how these combined in order to achieve the Project goal.

The performance of the Project under each of the four results has been indicated above. The Evaluation Team found that despite the problems of implementation and the poor performance in several regards, a facility for monitoring the marine ecosystems has been established. The Evaluation Team visited Hodeidah and found the Centre to be still in place, staffed and equipped some 30 months after the effective end of the Project. It was evident, however, that without further external support the equipment is likely to fail in the future, the current staff levels will erode in terms of their number, enthusiasm, and ability, and the data collected will become out of date and therefore of reduced practical value. It was also clear that the facility is not influencing government decision-making or policy formulation. Indeed, staff could give only one example of the Centre being used during the past 30 months.

Sustainability of Project results

The sustainability of Project results was found to be low. The reasons for this been stem from:

- Poor Project design which did not adequately address institutional issues
- Failure of the Government to commit adequate funds for the operation of the Centre developed by the Project
- Failure of the Project to implement the suite of activities designed to address the sustainability of the Centre's post-Project monitoring activities
- The absence of technical reports and other 'technical deliverables' in the form of training aids, manuals to assist continued monitoring efforts and use of the GIS, etc. which would have greatly assisted ongoing activities

The team's overall conclusion is that:

The Project developed a platform for the monitoring of the marine ecosystems of Yemen's Red Sea coast but this has not contributed to the protection of the marine environment, and is unlikely to without stronger Government interest and further financial and technical support.

A look at the future

The Evaluation Team was requested to examine the desirability of further support by GEF in line with the original intentions of the Project. Considerable interest was expressed in this regard from all parties involved in the Project.

The poor performance of the Project in terms of achieving its purpose might suggest that there is little reason to commit further funds. The failure of the Government of Yemen, through the Ministry of Fish Wealth, to play its role in guiding the Project has also been noted. Three responses to this situation can be considered, each with different implications for GEF and the Government of Yemen.

Option 1. Project terminated with no further support: The failure of the Government of Yemen to support or promote the Project or demonstrate any apparent interest in it provides sufficient reason for GEF to terminate it at this point and re-programme the remaining funds. This would avoid the danger of 'throwing good money after bad.' The negative aspect of this option is that the considerable investment made to date would be effectively 'written off'. This would reflect poorly on the Government of Yemen, UNDP, UNOPS and GEF. It also ignores the possibility of enhancing the

sustainability of the Project's achievements.

Option 2. Expenditure of remaining balance on a no-cost extension – without additional resources: A no-cost extension could consolidate the achievements of the Project to date, focusing on strengthening them and improving their sustainability. This option has the advantage that funds are immediately available allowing a rapid response to be made. This is important given the fragility of the existing centre and its human resources, the main achievement of the Project. There are two dangers to this option. Firstly, the MFW may not improve its performance significantly and the funds will be expended without achieving any significant improvement in the overall Project performance. Secondly, the funds may not be sufficient to achieve the consolidation of the Project. A no-cost extension could, however, turn some of the Project's failures into partial successes, improving on the overall performance of the Project within the original budget.

Option 3. Mobilisation of additional funds for further support to Yemen's marine environment: This option recognises that remaining funds may not be sufficient to achieve the consolidation of the Project's achievements and are certainly not sufficient to achieve the original purpose of the Project. This option is desirable in the medium term if the mobilisation of significant further inputs by GEF into the conservation of Yemen's marine environment is viewed as feasible. This option would require careful design of the expected results, and would need to take account of ongoing or proposed activities in the region. The design process would have to deal with the concerns raised in this report and in the Burbridge report on the institutional aspects of the Project's implementation, and the role of the Government of Yemen and the Ministry of Fish Wealth in particular. The main problem with this option is that the time required to develop the proposal, ensure appropriate institutional arrangements with the Government of Yemen, and identify funding sources could cause the existing facility to decline, in the absence of ongoing support, to a point where any new project would need to begin work effectively from scratch.

The Evaluation Team feels that option 2 and 3 might be considered together. The development of a modest, locally based package of support for the Centre, administered by the UNDP Country Office would ensure that existing human capacity was retained and provide a framework and institutional support for the development of a more substantial project. The implementation of option 2, therefore, would give both time for and support for the pursuit of option 3.

Exhibit 5 presents a logical framework for an extension to the Project based on this concept. Consultations would be needed and a considerably more detailed planning process undertaken to finalise the structure and activities of the proposed no-cost extension.

The Evaluation Team recommends, however, that certain conditions based on the problems encountered in the implementation of the Project should be made explicit:

- The extension should be executed by UNOPS under the direct management of the UNDP Country Office.
- The institutional affiliation of the Centre should be reviewed. The Ministry of Education and Research or the new Ministry of the Environment would be appropriate institutions.
- Government of Yemen must demonstrate commitment to the Centre by increasing its funding for monitoring operations.
- Government of Yemen must ensure that PERSGA uses the Centre for

training and provides funds for at least three training workshops.

- The University of Hodeidah should have a key role.

Summarised recommendations of the evaluation

Immediate, general or specific recommendations

- The failure of the Steering and Technical Committees indicate serious deficiencies that should have been addressed directly and will need to be addressed in any future support.
- Close monitoring of the Project's progress against benchmarks or 'independently verifiable indicators' would have ensured that the Project remained on track. More careful reading of reports, checking of the quality of deliverables, and regular field visits were needed.
- Over-dependence on a multiplicity of reports and reporting structures did not lead to strong monitoring, as intended, but resulted in the opposite as both the writers and readers of reports became fatigued.

Recommendations for future Project development

-
- Three options for the future are presented; 1. no further support; 2. a 12 month no cost extension to consolidate Project achievements and enhance their sustainability; 3. a new project with significant additional to address the original project purpose

Sustainable human development

- Where biodiversity of international importance is also an economic resource of local and national importance, the relationship between the two and threats to them must be understood.
- Projects designed to support sustainable human development must identify the primary threats to the resource and target initiatives on these; peripheral activities that in themselves are of value but which do not address the primary concerns must be avoided.

Capacity building

- Where capacity building is specified as the primary means through which Project objectives are to be met, the structure of the Project, its budget and the selection of consultants must reflect this.

Sector development

- GEF and the Government of Yemen must be clear about the relationship between the Red Sea's biological diversity and Yemen's commercial and artisanal fisheries. Interventions in the conservation sector may not have the expected effects on the fisheries sector, and *vice versa*.

General lessons

- Failure to develop projects that have a single, clearly defined purpose increases the likelihood of implementation problems. A single purpose to which the project is committed provides guidance while allowing flexibility to modify activities to achieve this purpose.
- Without the logic imposed by a single project purpose, managers cannot easily make decisions about what activities to include or

exclude. A formal hierarchy of project results and objectives should always be established as part of the development process.

- Formal strategic planning should be undertaken during implementation to ensure that appropriate means for achieving the project's purpose are identified. The project document should not be viewed as a blue print for implementation but as a guide.
- Though there are costs associated with substantial modifications to project design, these should not be avoided when necessary.
- Organisational reporting requirements should be streamlined to reduce the reporting burden. Ideally, all parties should accept a single periodic progress report format.
- Where the lead Government agency is clearly deficient in meeting its obligations the executors must have the courage to suspend activities.

II. Introduction

The Red Sea coast of the Republic of Yemen is of international importance because of the richness of its marine ecosystem and its high biological diversity. It is important to the Government of Yemen both because of these factors and because the Red Sea fishery is important to the national economy. In more local terms, the Red Sea fishery is a significant employer, providing jobs on medium and large boats engaged in offshore fishing for pelagic fish and shrimps, and small boats engaged in the reef based artisanal fishery. Fish also provide an important source of protein locally and nationally.

Yemen's Red Sea fishery and its biological diversity were felt to be threatened by oil pollution, destruction of the marine environment by development and unsustainable fishing.

The combination of the importance of the marine environment and the perceived threats to it largely account for the decision of the Global Environment Facility (GEF) to fund this Project.

Since June 1993, GEF has provided US\$2,800,000 to fund the three-year Protection of the Marine Ecosystems of the Red Sea Coast Project (YEM/92/G31 – YEM/97/G32). In addition, UNDP provided a further US\$160,000 to support Project activities while the Government of Yemen committed US\$140,000 in kind through the purchase of a building to house the Project and YR 3,806,000 for Project operations.

UNDP GEF designed the Project between 1991 and 1992 during periodic visits to the Red Sea region. The Project document was signed in 1993 but the security situation in Yemen at the time prevented its implementation at that time. Implementation finally began in 1995. A number of problems perceived in its implementation led to an independent review of the Project being carried out in 1996. This led to the development of a revised Project document during 1996 and 1997. This was signed in July 1997 and implementation continued until 1999. The majority of operations ended by mid-1998 when the person-months of technical support provided by the Project were expended.

Though the Project had functionally ended by early 1999, the Project remains with a small balance of funds unexpended. The decision to undertake a terminal evaluation of the Project was taken to fulfil UNDP monitoring obligations and as a way of deciding the best use of the remaining funds.

The long delay in carrying out the terminal evaluation meant that little institutional memory of the Project remained within UNDP, GEF, UNOPS or the UNDP Country Office. None of the senior officers responsible for designing, supervising or managing the Project remained in place at the time of this evaluation, causing difficulties for the Evaluation Team.

The evaluation was carried out by a team of three: Paul Nichols, marine specialist, Ibrahim Sharaf Al Deen, an independent national consultant though attached to the Ministry of Planning and Development, and Mark Infield, team leader. The evaluation mission took place over a two-week period. The 2nd and 3rd April 2001 were spent in the New York offices of UNOPS and UNDP GEF where the consultants were briefed on the Project and were able to examine the Project files. A further 10 days were spent in the Republic of Yemen during which time meetings were held with relevant government and UNDP officers, the field site was visited, and further documents were examined. Details of the itinerary, meetings held and documents reviewed are presented in **Annexes 2 to 5**.

In developing findings, conclusions and recommendations, the team used a project

progress review and situation analysis matrix. Each objective (overall goal and project purpose, and results) was examined in terms of the achievements or strengths, and setbacks or weaknesses of its implementation. Potential or opportunities, as well as problems or threats were also derived by the team through this SWOT (Strengths-Weaknesses-Opportunities-Threats) process. Conclusions were then drawn, generally expressed as implications of the findings of the analysis. These led in many cases to the identification of lessons to be learned from the Project and its implementation. Recommendations were generally not appropriate as the Project has been largely completed and the evaluation is a terminal evaluation. In some cases, though, recommendations were formulated to address issues identified through the analysis.

III. The Project and its development context

A. Context of the Project

The Project states its goal or main objective as being:

“... to protect the marine ecosystems of the Yemen Red Sea coast, including coral reefs and other critical habitats, which are important to fisheries and to maintaining high biodiversity.”¹

As such it is clear that the Project was attempting to meet two important and interrelated goals.

The first addresses the sustainability of Yemen’s Red Sea fishery, and is thus of direct relevance to the interests of the Government of Yemen in terms of the Project’s intended support to food security, local jobs, and the local and national economy.

The second addresses the global agenda of the conservation of biological diversity, and is thus directly within the remit of GEF.

The Government of Yemen is a signatory to several international agreements and conventions concerning the pollution of the marine environment and maritime issues. The Project document’s emphasis on pollution stemming from the country’s involvement in the oil industry was relevant. As a signatory to the Convention on Biological Diversity, the Project’s intention to support the protection of habitats important to and supporting high levels of biological diversity was also relevant. The importance of the Red Sea fishery to the national and local economy also provided a strong justification for the Project.

The Government of Yemen is a signatory of the Regional Convention for the Conservation of the Red Sea and Gulf of Aden. This convention provides a focus for efforts to conserve the Red Sea and its biological diversity through the Regional Organisation for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA), which was supported to act as the Secretariat of the convention. UNEP, UNDP, the World Bank and GEF all agreed to support PERSGA as a mechanism for enhancing the conservation of the Red Sea’s marine environment. This Project formed part of a suite of activities, which also included a Project to improve the management of the Red Sea coastal marine resources in Egypt also funded by GEF, and direct support to PERSGA.

The Project identified a lack of detailed knowledge of the Red Sea coast environment as constituting a threat in itself to the marine ecosystem. More information on the location of critically important habitats, and assessment and monitoring of threats to them, would therefore be necessary. A number of actual or potential threats to

¹ Project Document, title page.

Yemen's Red Sea fishery were identified. These were indicated in the Project Document as:

- Non-sustainable fishing effort resulting from a growing coastal population and poor management and control of the fishing effort
- Damage to the marine environment from coastal development
- Pollution from the oil industry and other sources associated with the development of the Red Sea coast

In summary, the Evaluation Team found the Project's goal to be highly relevant to the interests of both the Government of Yemen and GEF. The Project's emphasis and apparent purpose on building the capacity of the government to protect its marine environment was also found to be both relevant to the interest of Yemen and appropriate for GEF support.

B. Beneficiaries of the Project

Four intended groups of beneficiaries of the Project are listed in the Project Document:

- Agencies of the Republic of Yemen Government.
- Environmental societies and NGOs.
- Countries party to the Jeddah Convention (Regional Convention for the Conservation of the Red Sea and Gulf of Aden).
- The people of Yemen.

The Evaluation Team found little evidence of meaningful involvement of these groups in the original formulation of the Project. The Environmental Protection Council indicated to the Team that it had identified the need for a Project to support protection of the marine environment and liaised with GEF and UNDP officers during the early stages of mobilising interest in a Project. They were also responsible for proposing the Ministry of Fish Wealth as the executing agency. They did not, however, appear to play a role in the detailed development of the Project document. The Ministry of Fish Wealth was consulted during the design process, as were other government departments and regional partners. It is apparent, however, that no formal Project design process to ensure adequate participation of beneficiaries in the design of the Project was carried out.

Though the decision to carry out a re-formulation of the Project in 1996 was the result, in part, of concerns expressed by certain beneficiaries over the Project's implementation, the actual reformulation exercise did not seem to involve beneficiaries directly in a process of re-designing the Project as might have been expected.

Several of the agencies and societies named in the Project Document played key roles in the implementation of the Project. Others did not play the role that was expected of them. The degree and nature of the participation of individual agencies is discussed below in the order that they are listed in the Project Document².

- The Ministry of Planning and Development (MPD) – Specified as responsible for chairing the Project Steering Committee, MPD failed to meet its obligations as the committee did not meet during the period of its chairmanship. The implications of this for the Project will be discussed elsewhere.

² Project Document YEM/92/G31 – YEM/97/G32 pp10.

- Environmental Protection Council (EPC) – Specified in the original Project document as the chair of the Steering Committee, EPC was removed from this position in the re-designed Project, apparently in response to the objections of MFW to EPC’s involvement. Contracted by UNOPS as a Project partner, EPC provided counterparts for training and undertook the implementation of the public awareness component of the Project.
- Ministry of Fish Wealth (MFW) – Named as the Government’s Implementing Agency under UNOPS, the MFW was contracted to be “responsible for effective co-ordination of the Project”. The role of the MFW will be elaborated on elsewhere but the Evaluation Team found ample evidence that the MFW failed in its primary responsibilities to the Project. In particular, MFW did not provide the co-ordination and information flow critical to the success of the Project. Rather it seemed to have achieved the opposite, ignoring relevant information and hindering the participation of other beneficiaries.
- Marine Science and Resources Research Centre (MSRRC) – This institution, which is part of MFW, should have played an important role in the Project. Aside from contributing some counterparts for training in SCUBA diving (though there is evidence to suggest that some of these individuals had received SCUBA training under the Fourth Fisheries Development Project based in Aden) the Evaluation Team found no evidence of their participation.
- Public Corporation for Maritime Affairs (PCMA) – Contracted to provide short term experts and provide information and co-ordination concerning the Project’s activities relating to oil pollution of the marine environment, the Evaluation Team found that they had met their obligations and played their specified role in the Project’s implementation.
- Maritime Training Centre (MTC) – Identified in the Project Document as a source of training in EIA and monitoring and as an institution that would participate in the marine monitoring programme, the Evaluation Team found that MTC was dropped from the Project during implementation. Unlike the other participating agencies, MTC did not receive a contract to provide services or support to the Project from UNOPS.
- University of Sana’a – The University of Sana’a was contracted to provide a number of specific studies for the Project and to provide a number of technical staff on a full time or part time basis as national counterparts. The Evaluation Team found that the University had met its obligations and played a positive role in the implementation of the Project. It should be noted, however, that the University of Hodeidah undertook some of its anticipated functions, and a separate contract was signed with this university.

Though there was a degree of participation in the Project by PERSGA, largely through visits by the Chief Technical Advisor to PERSGA and joint planning of and participation in regional training workshops, the Evaluation Team found no real evidence of significant participation of neighbouring countries in the Project. To the extent, however, that the Project was supportive of or instrumental in the launching of the PERSGA Strategic Action Plan, there is currently considerable higher regional participation in initiatives to study, monitor and conserve the Red Sea marine environment.

Participation of the people of Yemen in the Project could be said to have been shown at all levels of the Project as 18 national counterparts received training through the Project and government officials were engaged in many of the Project’s activities. More meaningful participation of the general public was through the Public Awareness Component. Journalists, teachers and administrators took part in a

four-day workshop while school children and members of the public took part in exercises to clean up rubbish from the coastal strip and rehabilitate an area of mangrove. Passive participation of the public may be assumed from their exposure to education and awareness materials prepared and disseminated by the Project.

In summary the Evaluation Team found that there was very little participation of beneficiaries in the Project's formulation and development, but significant levels of participation in the Project by several groups of beneficiaries, though not all.

C. Modalities of execution

The Evaluation Team found that the Project's modalities of execution were a central issue. Several of the Project's problems, identified at different stages of its implementation and addressed in various ways, related directly to the modalities of execution that had been designed for the Project.

The initial Project design, detailed in the original Project Document (YEM/93/G31) specified the Ministry of Fish Wealth as the Project's Executing Agency. Through the MFW, several Yemeni institutions were to participate in the Project. The co-ordination of these was to be achieved through the operation of a Steering Committee that was to be chaired by the Environment Protection Council. On paper, these arrangements seemed appropriate.

The Ministry of Fish Wealth has within its structure the Marine Science and Resources Research Centre. Though located in Aden, this centre would have seemed to be a sound institutional location for the housing of a monitoring unit for the Red Sea coast. Furthermore, the Project was understood in general terms to be in support of the Red Sea fishery and thus could be sensibly established within MFW.

The Project identified several factors negatively impacting on the marine environment of the Red Sea³. These included:

- Pollution caused by the oil industry including the operation of drilling rigs and the cleaning of oil tanks by ships operating in the Red Sea.
- Pollution and environmental damage caused by on-land activities such as urban development and agriculture.
- Over-exploitation of the fishery and damage to the marine environment caused by fishing gear.
- Inadequate management of marine resources and insufficient protection of the marine environment.
- Insufficient official and public understanding of the relationship between the land and the sea in terms of environmental damage on the land leading to impacts on the marine environment.

The Project design recognised the importance of addressing the wide nature of the threats to the marine environment by involving a range of Yemeni institutions. This strategy provided the opportunity to draw on the resources and expertise of bodies responsible for different sectors that were related to the environment and marine resources of the Red Sea.

The selection of EPC to chair the Steering Committee was also appropriate. The Project was an environmental project, with strong emphasis on protection of biological diversity. The EPC is the national body responsible for the co-ordination of

³ Project Document; Section B1.1 to B1.3, pp 8-9.

environmental initiatives. It is not, however, expected or equipped to take on operational activities. By chairing the Steering Committee, therefore, the EPC was in a position to guide the implementation of the Project and ensure the appropriate participation of the various national organisations.

In practice it was quickly revealed that this modality of execution was not going to function. The main problem was that MFW, who as executing agency had control of the Project and its funds, seemed determined to prevent the involvement of the other organisations. MFW appears to have been intent on excluding other national bodies in order that MFW could then dominate the direction of the Project, changing it from an environmental project to a fisheries project. It also allowed MFW to dominate the training opportunities and to control the equipment and other resources provided through the Project.

It became evident that the MFW would not tolerate the overall co-ordinating role of EPC that was to be affected through the Steering Committee. MFW effectively neutralised EPC by refusing to participate in Steering Committee meetings. This meant that the committee was unable to operate. EPC was not institutionally or politically strong enough to meet its co-ordinating role or to influence the role of MFW.

Evidence of the problems resulting from these issues of execution led to the decision to undertake an external technical review of the Project. This review was carried out in November 1996. The report⁴ highlighted several concerns over the modalities of execution, and indicated that unless these problems were resolved, the Project would fail. Specifically, the report discussed the problems resulting from:

- The efforts of the Ministry of Fish Wealth to dominate the Project and its resources.
- The weakness of the Project Steering Committee.

Recommendations to modify the modality of Project execution led to a number of important changes being made:

- UNOPS took up the execution of the Project, while the Ministry of Fish Wealth became the implementing organisation within Yemen.
- The Steering Committee chairmanship was given to the Ministry of Planning and Development.
- A Technical Committee was to be established to provide for regular technical co-ordination of the Project's activities.
- A Project Co-ordination Unit, separately funded by UNDP was to be established.
- National partner agencies to the Project would be directly contracted to perform specified services for the Project.

These changes did resolve some of the problems and materially improved the execution of several elements of the Project.

The subcontracting of partner agencies led to the preparation of a number of technical reports and outputs. UNOPS undertook responsibility for developing contracts with clear terms of reference for the involvement of the Universities of Sana'a and Hodeidah, the Public Corporation of Maritime Affairs and the Environment Protection Council. These specified both the inputs that were required

⁴ Technical Evaluation of the GEF Funded Project on Protection of the Marine Ecosystems of the Red Sea Coast; Peter R. Burbridge, University of Newcastle, November 18, 1996.

from these partners in terms of the provision of national counterpart person-months, and in terms of outputs in terms of technical reports. Payments due to the participating national institutions were also defined, along with a payments schedule that was linked to the successful completion of their respective terms of reference.

Direct contracting also helped ensure that partner organisations supplied national counterparts to fill specific roles for the implementation of Project activities. It also ensured the provision of a wider range of suitable national counterparts for training through the Project. This was important since it prevented MFW from monopolising the training opportunities.

The hoped for improvements in co-ordination did not, however, materialise. Neither the Project Steering Committee nor the new Technical Committee met during the period of the Project's implementation. The proposed Project Co-ordination Unit did not materialise. The Project thus continued to be implemented in an institutional vacuum. This had serious consequences both for the quality of outputs of the Project and for the sustainability of its achievements.

A serious concern raised by the Burbridge report was the conflict between the Environment Project Council and the Ministry of Fish Wealth. Replacing the EPC as chair of the Steering Committee with the Ministry of Planning and Development failed to end MFW's domination of the Project. The Steering Committee, the Technical Committee and UNDP / UNOPS through the proposed co-ordination unit, the Country Office and the Tripartite Review Meetings were all unable to ensure that the MFW provided the support, guidance and participation expected of the Project's implementing agency.

The Evaluation Team concluded that the negative role of the MFW identified in the Burbridge review required a stronger response from GEF and UNOPS. The original Project design and purpose made the environmental nature of the Project clear. It might have been felt that EPC would have been the more suitable partner for the Project. This was recognised within the Project design, which gave the Steering Committee Chair to EPC. When it was evident that this was not sufficient to ensure that MFW played its required role in the Project, the opportunity to fundamentally redesign the Project should have been taken, and the partners should have been more forthright in their response to the role of MFW.

The Evaluation Team recognises the difficult line that external agencies must tread in providing support to sovereign governments, especially when the Project is conceived of as a capacity building Project. However, the shortcomings of the Project's execution and the role of the MFW in this were evident from an early stage. Documentary evidence seen by the Evaluation Team suggests that GEF felt it was "unlikely that in the future the Committee will become a strong 'steering' or 'guiding' force in the Project."⁵ It was suggested instead that the Steering Committee be downgraded and renamed the Project Co-ordinating Committee. The identified weakness of the government's role in the Project should have led to a stronger response, and probably more rather than less intervention and participation by UNOPS and UNDP were required. It is not evident that this came about. The Technical Committee and the Co-ordination Unit should have become important mechanisms for ensuring the Project made positive progress. Neither of these played any role at all. Nor is it evident that efforts were made to require a more positive participation by the MFW. This suggests to the Evaluation Team that the Project had insufficient external technical support. The international consultants were allowed to operate largely without national or international guidance and the

⁵ Communication from GEF Regional Co-ordinator to UNDP Resident Representative 'Review of Burbridge's report and TRP implications'. 19 November 1996.

institutional problems clearly identified in the external technical evaluation carried out by Burbridge were allowed to continue.

In summary, the Evaluation Team conclude that though, on paper, the modalities of execution seemed appropriate, when evidence of fundamental problems of implementation came to light, especially in the 1996 Technical Review Report, the response of UNOPS and GEF was inadequate.

IV. Project concept and design

A. Project document

1. The problem and the approach

The Project was originally conceived by officers of GEF between 1991 and 1992 during trips to the Red Sea region and discussion with officials in PERSGA and relevant government departments and agencies.

The Project identified threats to the Red Sea coastal marine environment and its resources as an issue of concern from both a conservation perspective (threats to biological diversity) and a production perspective (the rich Red Sea pelagic and inshore fisheries). The general approach of the Project to address these threats is based on the idea of enhancing the capacity of the Government of Yemen to respond to these threats.

The Evaluation Team has a number of reservations concerning the general approach to the problem. Firstly, it is not clear that threats to the coastal marine environment were the primary threats to Yemen's Red Sea fisheries. The general assumption made by the Project, that protecting the coastal environment would protect Yemen's Red Sea fisheries was not adequately tested. The Evaluation Team believes that there was evidence available at the time of the Project's development that unregulated fishing by both international and national fishing fleets was the primary threat. If this was the case, then either the Project should have been designed to address this threat, or its overall logic should have been modified.

The primary mechanism for achieving the Project's apparent purpose was the building of national capacity. While accepting the approach as both valid and appropriate, the Evaluation Team feels that the Project design did not adequately address this purpose. Training of national counterparts is not dealt with in sufficient detail in the document to ensure that appropriate training was provided or that it would be sufficiently rigorous and in sufficient depth.

Though the Project was to provide the Government of Yemen with the capacity to undertake ongoing monitoring of the marine environment, the insufficient consideration was paid during the Project's design phase to post-Project sustainability and effectiveness of monitoring the marine environment in either institutional or financial terms. Though the Project Document refers to "a cadre of staff within Government agencies and research institutions"⁶, there is no indication of how this will result in a dedicated operational facility – adequately staffed, equipped and funded - and in a position to undertake ongoing monitoring activities.

The Project Document also refers to the expectation that "marine environmental resource management issues will be dealt with more effectively in the national planning process."⁷ The Evaluation Team is concerned that this very important

⁶ Project Document; Section B2. Expected end of Project situation. Page 9.

⁷ Project Document; Section B2. Expected end of Project situation. Page 9.

expected achievement of the Project was not addressed in any way by Project activities. It is clear that initiatives to improve capacity to monitor and report on the marine environment must be linked to the creation or strengthening of mechanism to ensure that this information is actually integrated into decision making at policy levels of administration.

Finally, investigating and reporting on recurrent cost financing mechanisms⁸ was not viewed by the Evaluation Team as an adequate response to the critical issue of the sustainability of Project achievements.

In summary, the Evaluation Team believes that the process of Project development was not sufficiently rigorous. The identification of problems was in itself weak and the approach, therefore, was inevitably lacking in clarity⁹

2. Objectives, indicators, and major assumptions

The logic of Project objectives

Generally accepted best practice in project design calls for a process that will result in a project framework that clearly demonstrates the logic of the project. The flow of the logic shows how the results to be achieved by the project will contribute individually and in total towards the full achievement of the project's purpose, and how this purpose contributes towards the project's overall goal. A widely accepted mechanism for achieving this is the development of a logical framework. Ideally, this should be prepared during a workshop in which project stakeholders, including both beneficiaries and donors, come together and use the Logical Framework approach to identifying the problems that the project should address.

It is worth dwelling briefly on the way that a Logical Framework operates to guide a project's development and implementation as it indicates the way in which the Evaluation Team has attempted to review this Project. A few simple rules govern the nature of a Logical Framework and its structure is designed to ensure a clear logic is applied during the project design phase:

- There must be an expression of the project's overall goal (equivalent to the overall objective as given in the Project Document). ***This is what the project will contribute towards***, but cannot achieve by itself.
- There must be a precise expression of the project's purpose. This is what the project commits to completing by the end of the project. This is important as ***it states what the project will actually achieve***. The way that the purpose contributes towards the overall goal must also be clear.
- Once the purpose of the project has been agreed on, the results (equivalent to the intermediate objectives in the Project Document) are identified. These must be ***both necessary and sufficient to achieve the project purpose***. If a result cannot be shown to contribute directly to the purpose, it must be excluded. If it is not possible to design realistic results with logically sufficient activities, then the purpose will not be achieved and must be modified.

The Project Document did not contain a logical framework. In the view of the Evaluation Team there was little logic in the way that the problems identified were to be addressed by the activities specified. The apparent design logic of the

⁸ Project Document; Section B2. Expected end of Project situation. Page 9.

⁹ The Evaluation Team recognises that GEF was a relatively new organisation at the time the Project was being developed, had not yet built strong procedures for its work, but was under pressure to begin to perform its global role in support of biodiversity conservation. It is clear that the process of Project development and approval would be very different today.

Project is presented here, recast in a Logical Framework format.¹⁰ The statements of the **goal** (main objective) and **results** (intermediate objectives) are drawn from the Project Document. The wording has been modified slightly to enhance its meaning.

<i>Overall goal (Main objective)</i> To protect marine ecosystems of the Red Sea coast including coral reefs and other critical habitats which are important to fisheries and to maintaining high biodiversity.
<i>Project purpose (Not indicated in Project document)</i>
<i>Results (Immediate objectives)</i> 1. Survey, assessment and monitoring of the marine environment of the Yemen Red Sea carried out. 2. National capacity to manage the marine environment improved. 3. Environmental public awareness promoted. 4. Regional cooperation for sustainable management of the Red Sea environment enhanced.
<i>Activities [see Project Document]</i>

Expressed in this way, it can be seen immediately that the Project, by itself, could not hope to actually achieve the main objective. It could do no more than hope to contribute towards this important goal, and hope that other Projects, other governments and other factors would also contribute towards the protection of the marine ecosystem of the Red Sea.

Without an expression of a single, clearly defined purpose, it is hard to judge the logic of the Project's four results. Although they can all be seen to contribute towards the overall goal, they don't help us see what the Project was actually trying to achieve. Without a clear statement of purpose it is difficult to determine whether the results themselves make sense, and in the final analysis, whether or not the Project can be considered to have been a success.

To try and overcome this problem, the Evaluation Team has tried to clarify the logic of the Project, re-ordering the specific activities listed within the Project document under revised statements of the Project's results and purpose. The stated long-term objective of the Project has been re-phrased and separated into a **supra goal** and as an **overall goal** – the ultimate justifications of the Project, the achievement of which the Project sets out to contribute towards. A **Project purpose** – a single immediate objective or intended direct impact of the Project itself has been derived from the Project document. The four **results** – necessary for achieving the Project purpose – have been drawn from the immediate objectives specified in the Project document and the outputs and activities specified for them. The **activities** are what the Project must actually do in order to secure each of the results, and represent the Project outputs and associated activities specified in the Project document. **Annex 4** presents the full, modified Logical Framework on which the Evaluation Team bases its findings and on which the structure of this report is based. The logic of this framework is summarised here.

¹⁰ The Logical Framework is also referred to as a Project Planning Matrix by some donor agencies.

The Evaluation Team wishes to stress here that this Logical Framework **is** not itself an adequate representation of what the Project was intended to be or could have been. The development of a sound Logical Framework is a major undertaking and requires the involvement of a range of contributors with in-depth knowledge of the situation a Project is planning to address. It is presented here to assist the reader understand the approach taken by the Evaluation Team to the assessment of the achievements of this Project.

<p><i>Supra goal (Long term objective)</i></p> <p>Marine ecosystems of the Red Sea including coral reefs and other critical habitats important to fisheries and to maintaining high biodiversity protected.</p> <p><i>Overall goal</i></p> <p>National capacity to protect and manage the marine environment of the Yemen Red Sea coast strengthened.</p>
<p><i>Project purpose (Not indicated in Project document)</i></p> <p>Sustainable Yemeni institution for monitoring, analysis and reporting on the Red Sea marine environment to advise policy and decision makers established and operational</p>
<p><i>Results (Immediate objectives)</i></p> <ol style="list-style-type: none"> 1. Data collection and monitoring systems designed and implemented. 2. Sustainable institution for monitoring the marine environment established. 3. Participation in regional initiatives and programmes concerning the Red Sea environment supported. 4. Protection of Marine Ecosystems of the Red Sea Coast Project implemented.
<p><i>Activities [see Exhibit 4]</i></p>

Presented in this way, both the logic of the Project and its shortcomings are illuminated. The Project contributes to the overall goal of protecting the marine environment and strengthening national capacity to do so. It specifically undertakes to establish an institution for the monitoring of the marine ecosystem and advising policy makers. The Project, then, can be seen to be a capacity building Project.

Clarification of the logic reveals a number of problems with the original design that were not initially apparent. It is immediately evident that carrying out a public awareness programme does not easily fit into the logic. Important as raising public awareness may be to protecting the marine environment, it does not contribute directly to the building of national capacity to protect the marine environment. Placed further down the chain of logic, as an activity to be carried out as part of a training exercise to build national capacity in public awareness, this work might have found a function in the Project. Expressed at the level of a Project result, its inclusion could only be damaging to the probability of Project success. Similarly, the inclusion of activities to identify Marine Protected Areas and design guidelines for their management only makes sense in the context of a training activity or in terms of strengthening regional initiatives for the conservation and management of the Red Sea.

The revised logic specifies the establishment of an institution that will be responsible for the long-term monitoring of the marine environment as the Project purpose. It is

against this purpose that the Evaluation Team will assess the Project's overall performance.

Assumptions and risks

There are a number of assumptions implicit in the Project design, though these are not clearly stated. Three important assumptions are examined here:

- It was assumed that improving the protection of the marine coastal environment would protect the fisheries that are so important to the Yemeni economy and national food security. This assumption does not appear to have been closely examined. Over the course of the Project's implementation there appear to have been serious declines in the stocks of both pelagic and demersal fishes and shrimps. This appears to have been largely the result of unregulated fishing by international and national fishing fleets.¹¹ As such, the work of the Project on issues relating to protection of the coastal marine environment from pollution did not seem to be addressing the real threats to the Red Sea fishery.
- It was assumed that providing a mechanism for monitoring the marine coastal environment would lead to issues concerning the protection of this environment to be incorporated into policy development and planning decisions. There is no evidence that this has been the case. This assumption meant that activities designed specifically to address the nature of policy development and decision making in the context of marine conservation were not included as part of the Project's design.
- It was assumed that the development of a national capacity to monitor the marine coastal environment through the provision of equipment and the training of national experts would lead to ongoing monitoring. Failure of the Project design to address adequately issues of financial and institutional sustainability meant that this assumption was unlikely to hold true.

General and specific risks to the successful conclusion of the Project were listed in Sections F and G of the Project Document¹². These were thoughtful and comprehensive and attempts were made to design in advance, possible corrective measures. Major problems actually encountered by the Project in relations to the risks identified are discussed here.

Delays in recruiting counterparts

The Project Document identifies a risk that delays in recruiting local specialists and national counterparts would delay the implementation of field surveys and disrupt training. This proved to be a major problem for the Project. There were serious delays in the provision of counterparts, a number of those provided were not suitable and were not able to either contribute towards or benefit significantly from the Project. Many were not able or willing to commit sufficient time to Project activities or to training. This had serious implications for the Project.

- Survey work and data collection and the quality of training were constrained. Fewer sites were surveyed than would have been desirable and the quality of data collection was not as high as might have been expected.
- The level of training received by many of the national counterparts was not of sufficient duration or depth meaning that national experts were not sufficiently

¹¹ This information represents the subjective and informal view of the FAO Fish Stock Assessment Specialist working with the Ministry of Fish Wealth.

¹² Project Document, Section F, Risks and Section G, Prior Obligations and Pre-requisites. Pages 25-26.

well trained by the end of the Project to be able to continue with the monitoring programme.

- Much of the time of the external consultants was spent trying to “catch up” meaning that training and survey work were undertaken simultaneously, to the detriment of both. Consultants were also unable to adequately plan their work or ensure that proper technical reports were prepared. This had serious implications for the sustainability of the Project.

Internal constraints within Yemen

Unforeseen constraints in the Republic of Yemen were identified as a risk. In the event the Evaluation Team understood that there were security problems that prevented survey work being carried out around some of Yemen’s Red Sea islands. Furthermore, it was indicated by the international consultants¹³ that security problems in Hodeidah in 1998 led to the precipitate removal of their Chief Technical Advisor, though it was not apparent what these problems were. Though civil war in Yemen led to delays in the implementation of the Project between 1993 and 1994, this had no effect on the Project once it was initiated in 1995.

Problems associated with international consultants

The Project Document identifies delays in the selection of international consultants and the fielding of inappropriate short-term technical assistance as risks. There were delays in the selection of the international consultants and the tendering process was complex and rather clumsy.¹⁴ This did not however constitute a serious problem for the Project. The short-term technical assistance fielded by the international consultants was generally viewed as having been of high quality. The Evaluation Team has strong reservations, however, concerning the appropriateness of short-term technical assistance on a project of this nature. Long-term technical assistance would have been more effective, especially if linked to the provision of permanent national counterparts. The short-term nature of inputs by both the international and national consultants and their national counterparts was a severe constraint on the effectiveness of the Project.

It is also important to note that the Chief Technical Advisor provided by the international consultants changed four times during the course of the Project. This had a serious negative impact on the Project. By and large, however, such changes cannot be predicted nor completely avoided. One CTA had to resign his position when his wife became seriously ill, while another became seriously ill himself. The first CTA was removed at the demand of the then Minister for Fish Wealth.

Delays in procurement of equipment

The Evaluation Team found that equipment provision by the international consultants had been very well achieved and its importation had been well supported by the MFW. One serious shortcoming was noted, however, and is reported on here as it had a considerable impact on the Project. This was the identification and hiring of a suitable research vessel to allow for the coastal marine surveys. Despite the considerable experience of the experts involved in the development of the Project, this was not adequately planned for. Only a very substandard boat could be hired, the working budget was insufficient and the terms and conditions under which the vessel was chartered did not allow it to steam to all the areas where surveys were planned. As a result the survey work was seriously constrained. Many sites were not

¹³ The international consultants were Hassall and Associates, an international consulting company based in Sydney, Australia.

¹⁴ The internal audit of the Project carried out by UNDP is highly critical of the process.

visited and on at least one occasion the national counterparts refused to continue with the survey work due to the poor working conditions.

Lack of Project impact at policy level

This very serious threat was recognised within the Project, even if the risk was scored as being only 'low to medium'. The Evaluation Team believes, however, that this was not a risk but a probability, if it was not adequately considered during the Project design phase. The proposed corrective measures were not properly thought out; had they been they would have led to a significant re-design of the Project.

Indicators, work plans and evaluation

Verifiable indicators of progress and impact

The Project Document included brief statements under the heading of "Success criteria" under the description of each of the four Immediate Objectives (or results). These statements cannot be construed as indicators against which the Project could be evaluated. They were not specific with respect to timing, location, quantity or quality, necessary characteristics for what are referred to as 'objectively verifiable indicators' using the Logical Framework approach. In their absence the Evaluation Team can only make qualitative and somewhat subjective assessments of the Project's achievements. Though indicators should have been established as part of the process of Project planning, it would have been reasonable for the Project implementers (UNOPS, the international consultants and MFW) to undertake a process to develop indicators once the Project was being implemented.

Work plans, milestones and budgets

The Inception Report prepared by the international consultants after the first three months of the Project's implementation included a three-year work plan. The contractual requirement for the preparation of six monthly work plans was not met, however. Budgets that would normally be associated with such work plans were also not prepared. The absence of such work plans made it difficult for the Evaluation Team to follow the incremental progress of the Project, as meaningful "milestones" of achievement were not established. More importantly, however, it indicates that there was a lack of internal monitoring of the Project's implementation and a failure to undertake the kind of strategic planning which might have proved valuable in the Project's implementation.

Internal and external evaluation

The international consultants met their contractual obligations to provide periodic progress reports. In addition, the Project was subjected to a mid-term review in 1996, two internal audit reports, annual Project implementation reviews (PIRs), annual progress reports (APRs), a terminal Project report (TPR) and other internal reviews and periodic reports. The evaluation reported on here represents the terminal external evaluation of the Project.

The relevance of these reviews and reports, and how they contributed towards the monitoring of the Project, are discussed below in Section V. D.

In summary, the Evaluation Team believes that the design of the Project was badly flawed and that this placed severe constraints on the Project's operations and significantly reduced the probability of success.

V. Project implementation

A. Activities

The Project Document specifies and describes 44 activities spread between 10 outputs that feed into the four results (immediate objectives) defined for the Project. It will not be helpful to discuss each of these specific activities here. The degree to which they were implemented links directly to the achievement of the Project's 10 outputs and these are discussed below in detail in Section VI. C. It is helpful to discuss specific issues of implementation here, however, especially with respect to any effects on the implementation of the Project as a whole.

The Project Evaluation found that a great deal of high quality work had been carried out by the majority of partners involved in the implementation of the Project. Especially noteworthy is the expertise, energy and hard work of the short-term experts fielded by the international consultants and the enthusiasm and commitment of several of the national experts and counterparts. The combination of the external experts and the national counterparts led to the building of the Project's most notable achievement: a team of enthusiastic and committed Yemenis with a solid base of core skills in marine monitoring. Though vulnerable, as will be discussed later, this team represents a potentially important asset for the Government of Yemen's management of the Red Sea marine environment.

Much of this work was reported on in technical reports prepared by the contracted partner organisations. These are listed in Annex 5 and represent important Project outputs.

The Evaluation Team found that certain activities were not carried out. It is recognised that a Project may fail to carry out specific activities for a range of legitimate reasons. These will usually be acknowledged in reports and explanations provided. Activities specified in a Project document may be abandoned as a result of a strategic planning exercise that recognises new priorities for the Project and develops new activities to address its objectives. In other cases, a Project may be constrained by problems of implementation on the ground. In the case of this Project, a considerable number of specific activities were not carried out but no documentation exists to adequately explain why. Certainly, the Evaluation Team found no evidence of any formal re-planning of the Project that led to their being removed. Key Project activities that were not implemented are listed and briefly discussed:

- Design and planning of an environmental monitoring system – this activity was central to the Project and was a core 'deliverable'. The failure to undertake this activity in a meaningful way represents a fundamental failure of the Project.
- Develop general guidelines for the management of Marine Protected Areas¹⁵ - this activity was designed as one of the primary mechanisms through which the Project was to support the protection of the Red Sea marine coast. Though it was an activity under a poorly conceived Project output, the Project's failure to address it without explanation constitutes a significant weakness.
- Identify possible sources of funding for post-Project activities – this activity

¹⁵ The international consultants stated that they believed that this component had been removed from the Project proposal, as had been recommended in the Technical Review of 1996. The revised Project Document makes it clear, however, that MPA activities were to be scaled down, not removed. Project Document, Preamble, page 3.

was to have been undertaken by an international expert, who was not fielded by the international consultants. A report prepared by a national consultant did not represent a meaningful implementation of this activity.

- Explore and negotiate with potential funding sources – no evidence at all was found of this activity. The failure to secure sources of funding for the ongoing recurrent expenditure of monitoring had profound implications for the sustainability of the Project's achievements.
- Preparation of evaluation and technical reports – each of the 10 Project outputs was to have been concluded with the preparation of evaluation and technical reports. No such reports worth the name were prepared as stand-alone documents – some technical material such as the results of survey work, development of the GIS etc. was incorporated into the body of some of the regular progress reports. Consequently much of the useful work undertaken was not easy to translate into ongoing activities by the participating counterpart national institutions.

In summary, the Evaluation Team concludes that though the international consultants and the national counterparts carried out a large amount of high quality work, the failure to produce adequate reports and to implement certain key activities severely weakened the Project's impact on its goal of protecting the marine environment of the Red Sea.

B. Modifications to timing and budgets

The Project was subject to several modifications to both timing and budgets. Major events in the implementation of the Project are summarised in Table 1 below which aims to provide an overview of the Project during the course of its operational life.

The Project was initially scheduled to run for three years from June 1993 to May 1996. Delays in implementation, primarily due to civil war in Yemen, meant that progress towards contracting and initiation of the Project did not begin until 1995. The Project finally began operations in Yemen when the international consultants field a CTA in December 1995. Initial problems experienced during the first several months of the Project led to a technical evaluation being carried out in November 1996, after less than one year of operations.

Modifications were made to the Project following a limited process of re-design based on recommendations made in the evaluation. A new Project document was drafted which the Government of Yemen signed in June 1997 and by UNDP in July 1997. The new Project (now recoded as YEM/97/G32) was scheduled to end in June 1999.

Further modifications to the timing of the Project were experienced during the implementation of the new Project. External technical support ended in August 1998 when the CTA was withdrawn suddenly, apparently in response to concerns about security. Field operations of the Project effectively ended at this point¹⁶. The international consultants submitted a proposal for a contract revision for the period August to November 1998. It was proposed that their contractual reporting obligations for a fifth progress report and a final report should be met by the production of a book detailing the findings of the Project. UNOPS and UNDP GEF accepted this proposal. The book was finally submitted in March 1999. The book was forwarded to various parties for review. Feedback from these parties was mixed. The EPC were positive about the book/final report and requested additional copies.

¹⁶ Individual national counterparts continued to work and carried out four surveys after this date. It is not apparent, however, that the results of this work were included in the final report of the Project.

This was apparently taken by UNOPS to indicate that the Government of Yemen had formally accepted the book/final report as meeting the contractual obligations of the international consultants who were finally paid off towards the end of 2000. The MFW, the implementing agency in Yemen denied that they had accepted the report and the Evaluation Team could find no evidence in writing that they had.

Despite the submission of this final report, the Project has remained operational in administrative terms. The Project had unexpended funds in the region of approximately US\$120,000¹⁷ and a decision was required on how to deal with these funds. A Tripartite Review Meeting was convened in December 1999 and discussed the Project in on-going operational terms. In 2000, the Ministry of Fish Wealth began to motivate for the release of remaining Project funds and discuss the possibility of an extension of the Project. In late 2000, UNOPS began the process of organising the terminal external evaluation of the Project.

Table 1: overview of the Project during the course of its operational life

Timing	Action	Comment
1991-1992	Project development	
June 1993	Project Document signed	
1993	Project suspended	Civil war in Yemen
1994 - 1995	Tendering process	Tendering process protracted
March 1995	Contract with consultants signed	
May 1995	MFW approves Project start	Delays in fielding consultants
December 1995	Project initiated on the ground; CTA fielded	Problems on the ground
October 1996	External technical evaluation	
November 1996	1 st Tripartite Review Meeting	
Jan-May 1997	Project revision	Limited revision in New York
June 1997	Revised Project Document signed	
March 1998	2 nd Tripartite Review Meeting	
July 1998	CTA and international experts leave	Most work and training ends
March 1999	Book in lieu of report published	Prepared in Australia
December 1999	3 rd Tripartite Review Meeting	
End 2000	Hassall and Associates final payment made	MFW did not accept report
April 2001	Terminal External Evaluation	

A number of revisions to the budget were made during the course of the Project's history. Not all of these could be traced by the Evaluation Team through formal budget revision documents. The most important were:

- The addition of US \$160,000 to the original budget by UNDP, drawn from YEM/97/100 Sustainable Environmental Management Project. This sum was used to fund local sub-contracts and the purchase of some equipment.
- The reduction in the total of the Hassall and Associates contract by US\$ 137,371 to US\$ 1,173,237. The sum withdrawn from the international consultants was used to contract the services of the several national

¹⁷ Confirmed by UNOPS by memo; 04/05/2001.

partners¹⁸.

The Evaluation Team recognises the complexity of the Project and the difficulties experienced in implementation leading to modifications throughout the course of the Project. However, the opportunity to make the necessary changes to the Project structure was not taken.

C. General strategy of implementation

The Project Document reveals a somewhat confused implementation strategy. As indicated above, this was primarily caused by the lack of a clearly expressed purpose of the Project. The Evaluation Team has put forward a proposed structure of the Project's logic. In this the purpose of the Project was to contribute towards the *supra goal* of protection of the Red Sea marine environment. The *overall goal* of the Project was to strengthen the capacity of the Yemeni authorities to monitor threats to the environment and this was to be achieved by establishing a sustainable Yemeni institution capable of monitoring the marine environment and advising policy and decision makers. With regard to this structure, the Evaluation Team has examined the various elements of the Project's implementation strategy.

The Logical Framework developed by the Evaluation Team to represent the Project, presented in **Exhibit 3**, suggests three primary planks or results to the Project's general strategy.

- National experts would be trained to monitor, assess and report on threats to the marine environment.
- A monitoring plan and the necessary infrastructure for implementing it would be developed which would be appropriate to the Yemeni situation in both ecological terms and institutional terms.
- Regional structures would be supported and integrated.

Each of these planks is supported by activities and outputs that were specified in the Project Document. These are presented in **Exhibit 4**. At the level of activities, the Evaluation Team carried out a situation review and analysis of the strengths and weakness of the Project's implementation. A fourth result dealing with the implementation, management and reporting and monitoring of the Project is also described.

Data collection and monitoring systems designed and implemented

The activities reported on here conform largely to those presented within Intermediate Objectives 1 and 2 of the Project¹⁹. The several activities that related to the collection of data, the carrying out of surveys, the design and initial implementation of a monitoring system and protocols, and the development and supply of databases and a Geographical Information System are collected together under this result.

The Evaluation Team found that a great deal of work had been carried out under this result. A large number of surveys were under taken, and great deal of information was collected. This work was carried out by both the technical assistants fielded by the international consultants, the national counterparts, and the Yemeni institutions and agencies contracted by the Project.

The Evaluation Team also found in place a GIS and associated database of high

¹⁸ Contract amendment no. 2; dated 1st November 1997.

¹⁹ Project Document; Section D, pages 14 –19.

quality, which represents a powerful potential tool for the Yemeni authorities to monitor the marine environment.

In terms of the Project strategy of building an institution responsible for monitoring, however, there was a fundamental shortcoming under this result. A key Project deliverable and one critical to the strategy was the establishment of a monitoring system to allow identification of resource use conflicts and compatibility. The Evaluation Team believes that such a system should have comprised:

- Identification/location of specific monitoring sites including all of the main habitat types.
- A monitoring schedule/work-plan.
- A clear manual of methods to be employed.
- Standardised data recording forms and associated notes for their completion.
- Computerised databases linked to data forms for systematic input of data and the GIS for analysis and reporting.
- Standardised analysis procedures and reporting formats.

These would have been collected together into a single, user-friendly manual, ideally translated into Arabic. Multiple copies of this manual and the associated computer databases would have formed the basis for on-going monitoring after completion of the Project.

The Evaluation Team found no such manual and it is clear that the Project did not design nor establish a monitoring programme. At the end of the Project, the national counterparts were not left with a well-designed, fully integrated monitoring programme that they could follow once the technical assistants had left. The Evaluation Team could not even find copies of any of the standard texts²⁰ used by the international consultants to train the national counterparts and from which they had drawn survey procedures and data forms.

Sustainable institution for monitoring the marine environment established

Activities reported on under this heading comprise the various activities listed in the Project Document that related to training of national counterparts and the activities related to examining sources of funding for ongoing post-Project activities of the institution. In addition, activities related to the public awareness programme are included here. The Evaluation Team proposes that enhancing public awareness of concerns over the marine environment amongst both the general public, the private sector and government agencies can be viewed as an important part of developing a sustainable institution. Support for such an institution is more likely to be forthcoming if there is an understanding of the role it plays in preventing damage to the marine environment which would translate directly into negative effects on the local and national economy.

The Evaluation Team learned that a considerable amount of training had been carried out as specified within the Project Document. Much of this was of high quality and the core group of national counterparts that remain associated with the facility in Hodeidah were very positive about the training they received and the technical experts that trained them. The Evaluation Team were surprised, however, to find that the training programme seemed to have been rather *ad hoc* in nature and showed little evidence of systematic planning. The trainees seem to have been

²⁰ Standard methodologies developed and published by, for example, the Australian Great Barrier Reef Maritime Park Authority were apparently used in training.

provided with little formal training materials, textbooks or manuals with which to strengthen lectures and practicals. As a result, once training had finished, there was little opportunity for trainees to continue and build on their experience in their day-to-day work.

A significant omission under this result was the failure of the Project to undertake the activities specified concerning the identification of funding sources for post-Project monitoring and support of the institution. In terms of strategy, the Evaluation Team believes that these activities and Output 3.3²¹ in general were not adequate to make the sustainable funding of the institution likely. Greater emphasis needed to be laid on the institutional arrangements for the facility that the Project was to create. The Project Documents makes no reference to this. Examination of sources of recurrent funds needed to be more actively pursued, not only by an international consultant, and within the context of a sound discussion of institutional arrangements and the role of government.

Participation in regional initiatives and programmes concerning the Red Sea environment supported

The Project provided US\$500,000 to support regional initiatives. Specifically, the Project provided support to PERSGA, funding a CTA for a period of one year, an Assistant Co-ordinator, and three regional training workshops²². The Evaluation Team was able to determine only that the CTA was fielded and that one of the three regional workshops was carried out. Little information on the regional component was available to the Evaluation Team and there was no evidence that the reports specified in the inter-agency agreement between UNEP and UNOPS were produced.

The Evaluation Team felt that this result provided the strongest logic for the suite of activities related to the identification and management of marine protected areas. None of these were implemented, however.

Protection of Marine Ecosystems of the Red Sea Coast Project implemented

This result was added by the Evaluation Team to collect together all those activities related to implementation of the Project in practical terms. These were spread throughout the four Immediate Objectives in the Project Document. They include the purchase and importation of equipment and materials, the provision of short-term and long-term technical assistance, and the preparation of technical and evaluation reports. Though not specified clearly in the Project Document, the holding of Steering Committee meetings, Technical Committee meetings and Tripartite Review meetings, as well as carrying out the external evaluations required by GEF are included here.

As indicated elsewhere, the Evaluation Team found that there were no meetings of the Steering Committee or the Technical Committee. Prior to the re-design of the Project, there was an attempt to hold a meeting of the Steering Committee in 1996. The meeting was rendered ineffective by the refusal of the MFW representative to participate, and the refusal of the Chairman, the EPC representative, to proceed without the participation of MFW.

There were three Tripartite Review meetings. The first of these, held in November 1996 primarily discussed the results of the external technical evaluation and made recommendations on how the Project's implementation could be improved. The second was held in March 1998 and noted general Project progress. The third was

²¹ Project Document, pp 21. Output 3.3 states "Identification of potential recurrent cost financing by an International Expert for post-Project activities".

²² Project Document, Annex IV. Regional Component. Annex pages 6-12.

in December 1999 and provided a brief summary of the Project's successes and failures.

In summary the Evaluation Team found that the strategy of Project implementation was not well structured. The flow of logic from activities to results to purpose was not strong and as a result, major flaws in the implementation of activities were not recognised or the implications of these for the Project's achievements noted or addressed.

D. Quality of backstopping and monitoring

The Project Document and the contract of the international consultants made provision for monitoring and backstopping. The range of institutions involved in the Project and the complexity of the Project design itself made monitoring and backstopping particularly important. The roles and performance of the different players and bodies will be discussed separately.

Backstopping

The international consultants

The international consultants provided the periodic progress reports that they were required to under their contract. Careful reading of these reports suggests, however, that they concealed many of the problems being encountered by the Project rather than revealing them to open scrutiny and comment. This meant that the severity of the problems were not always recognised by Project partners and therefore not addressed.

The consultants did not provide in full the specified list of technical products listed in the Project Document including many of the technical evaluation reports specified.

It is also apparent that several of the major tangible outputs of the Project were not achieved. Guidelines for the selection and management of MPAs were not, for example, produced. The progress reports do not make these omissions clear, and in some cases, statements in progress reports and in the formal annual Project Implementation Reports prepared for GEF are misleading.

The handling of the preparation of technical reports by the international consultants was poor. There was no list of reports, papers and publications produced by the Project and those that were prepared were not properly numbered. Many reports were buried within progress reports rather than being prepared and bound as stand alone reports, and were therefore often difficult to locate.

The Ministry of Fish Wealth

The Ministry of Fish Wealth seemed to fulfil its requirements in terms of facilitating the importation of equipment and the arrangement of visas and other requirements for the international advisors and CTAs. In other respects, however, MFW failed spectacularly in the role expected of the national executing agency. In particular there was no communication or liaison and sharing of information with other Projects supporting the Ministry, most notably the Fourth Fisheries Development Project that was specifically referred to in the terms of reference developed in the Project Document for MFW²³. The Evaluation Team has discussed this issue of poor communication with technical experts who undertook the coastal habitat surveys along the Gulf of Aden coast under the auspices of the Fourth Fisheries Development Project. It seems that meetings were held at different times between at least two of the Fourth Fisheries environmental scientists and two of the CTAs

²³ Project Document. Annex VII, pp 15.

(Chiffings and DouAbel), and copies of the habitat survey's conducted were given at the time to the CTA. However, there is no evidence that the environmental habitat survey work conducted along the Gulf of Aden coast was considered in any way by the consultants when planning surveys of the Red Sea coast. Similarly, the wealth of fisheries data developed by the Fourth Fisheries Development Project was not used in any way by the Project.

The blocking of the Project Steering Committee by MFW had a serious negative effect on the Project.

UNOPS

UNOPS played a very positive role in the execution of the Project. The very complex relationships between the Project, the Ministry of Fish Wealth, the several national partners, and the regional partners were very well managed by UNOPS. Despite some complaints that UNOPS had been slow to approve certain purchases or blocked others, the Evaluation Team found that the quality of Project administration had been high²⁴.

The Evaluation Team was less satisfied, however, with UNOPS's performance with respect to interventions in project implementation. As Project executor, UNOPS was ultimately responsible for determining whether the conditions of contractors had been met. The Evaluation Team believes that the international contractors failed to meet a number of their contractual obligations in terms of the deliverables specified in the Project Document that formed a part of the contract. UNOPS failed to identify these contractual failures or respond to them.

Part of the problem seems to have been that there was not sufficient linking of progress reports and evidence of the completion of activities or production of products referred to in them. There was insufficient attention paid to the development of verifiable indicators and inadequate attention to their verification.

UNDP GEF

UNDP GEF, as funders of the Project, had a responsibility to ensure that the Project was achieving its objectives. It is evident that there was a great deal of concern over this within GEF, but the Evaluation Team was not convinced that this concern led to effective action. The Evaluation Team believes that no GEF officers visited the Project in the field. Travelling down to Hodeidah to see the operational end of the Project and meet with Yemeni counterparts and partners in the field would have been a valuable exercise and might have encouraged GEF to push for more effective responses by the executor and implementer of the Project in addressing the problems.

As funders, it was also incumbent on GEF to respond to the problems raised by the external technical review report prepared by Burbridge. This was a comprehensive report that clearly identified serious problems with the Project and made a number of clear recommendations, including one for "a design mission to undertake a thorough review of the current Project design, funding and implementation and execution arrangements" of the Project²⁵. Instead of the recommended thorough review, a "small-scale design and improvement exercise" was carried out²⁶. A comparison between the original proposal and the re-designed proposal carried out by the Evaluation Team reveals that the Project was fundamentally unaltered. The only

²⁴ This statement generally holds good though the Evaluation Team found the filing system complex and has been unable to properly understand the financial aspects of the Project.

²⁵ Technical Evaluation Report. P. Burbridge, 1996. page 3.

²⁶ Project Document. Preamble, page 3.

significant modification was to the mode of implementation of the Project to allow for direct contracting of Yemeni partner institutions. It is evident that this change was made in order to 'side-step' the problems being caused by the Ministry of Fish Wealth. It did not, therefore, attempt to address these problems directly. Furthermore, the weaknesses of the Project design were evident by this time. The opportunity to address them through a sound process was not taken by GEF. The Evaluation Team believes that this was a grave error.

The responsibility for ensuring that technical reports and deliverables were of adequate quality also lay with GEF. The Evaluation Team felt that there was inadequate vetting of the quality of technical reports and that there were several examples where reports were of such poor quality that it is difficult to see how the payment of contractors was agreed to. The three page technical report provided by the Environment Protection Council is a good example of a very weak technical report that was allowed to pass without comment.

UNDP Country Office

The UNDP Country Office played a very important role in backstopping the Project, getting closely involved in the operations of the Project, and taking steps to address day-to-day problems thrown up by the often-difficult operating environment. It is clear that the Resident Representative at the time was involved closely and the Contact Officer within the Country Office kept channels of communication open and played an important facilitatory role.

The Evaluation Team felt, however, that the serious nature of the problems evident in the implementation of the Project, and most notably in the failure of the Steering Committee to meet, should have met with a stronger response at the highest levels within UNDP.

Monitoring

Two primary mechanisms were established for the monitoring of the Project. These were the Steering Committee and the Tripartite Review Meetings. In addition, there was a reporting schedule.

As mentioned elsewhere, the Project Steering Committee did not meet though it is specified that there would be six monthly meetings. This meant that the institution that represented most directly the interests of the Government of Yemen in the Project failed to operate. The failure of this institution meant that the primary tool for the regular monitoring of the Project was removed. The consequences of this for the Project were serious. Perhaps the most important consequence was that there was no vehicle for regular, direct review of the progress being made by the Project.

The Tripartite Review Meetings provided the opportunity for periodic external review of the Project by the interested parties. These meetings represented the primary mechanism for GEF to ensure that the objectives of the Project are being met. The value of these meetings was demonstrated during the first TRP meeting in November 1996. The external technical review report was discussed and the serious nature of the problems being experienced by the Project voiced by all parties. The second TRP meeting seems to have accomplished nothing, however. Though it must have been clear to all concerned with the Project that there were severe problems in the achievement of results, there is no indication that these issues were discussed at the meeting. The fact that the Project was to effectively end four months after the meeting is not raised as a concern at all. The final TRP meeting seems to have failed to note that the Project had stopped operations nearly a year and a half earlier. The participants seemed to have discussed the Project as if it were a going concern rather than trying to look at the lessons that could have been learned from its failures.

The Evaluation Team was struck by the number of periodic reports produced by or associated with the Project.

- Bi-annual progress reports prepared by the international consultants.
- Annual Project Implementation Reports (PIRs).
- Annual Progress Reports (APRs).
- Ongoing Project briefs.
- Preliminary Progress reports.
- Terminal Program Report (TRP).

The result of the large number of reports was not improved monitoring of the Project, as was clearly the intention. Instead 'report fatigue' is evident, both amongst those preparing them and those reading them.

Many of the reports produced were uninformative and difficult to read. Rather than providing information about the real situation regarding the Project these reports tended to obscure it. There seems to have been a tendency for monitoring reports to be read without sufficient attention to their contents or follow-up action where problems were evident, where it was clear that activities had not been adequately performed or where major deliverables had failed to materialise.

In summary, the Evaluation Team feels that despite the high quality of much of the work carried out during the implementation of the Project, insufficient attention was paid to the evident problems being encountered by the Project and inadequate efforts were made to improve the situation. Insufficient hands-on monitoring and an over-reliance on written reports, often of dubious value, compounded this situation.

VI. Project result

The following discussion on the results of the Project has been based directly on the findings of the Evaluation Team structured through the 'Project review and situation analysis' carried out by the team and presented in **Exhibit 1**.

A. Relevance

The stated main or long-term objective of the Project was to protect the marine ecosystems of the Yemen Red Sea coast and thereby both its fishery and its biodiversity. This was to be achieved by assisting the Republic of Yemen to develop and implement a monitoring system and through training of Yemeni counterparts in monitoring procedures.²⁷

Developing the capacity of the Government of Yemen to monitor and report on its marine environment would enhance protection of the marine environment. This would support the conservation of biodiversity and promote the sustainable use of marine resource. The capacity of the Government of Yemen to monitor the Red Sea marine environment was low, so a Project designed to strengthen this capacity was sound. In addition, there was reason to suspect that a range of factors was negatively affecting the fish resource. Once again, this supported the proposal to put in place a national capacity to monitor the marine environment.

The regional component of the Project ensured a wide relevance for the Project's objectives. Links were established with PERSGA, which unites the interests of

²⁷ Project Document; Brief description, Page 1.

governments that border the Red Sea. Through PERSGA it was also possible for GEF to establish relations with its parallel activities in Egypt.

The Project Document made critical assumptions that were not rigorously examined. As a result the Project may have focused on issues that, though important, were not the primary causes of damage to Yemen's fishery or its biological diversity. The Project assumed that improved monitoring would lead to more sustainable use of the fishery resource. The links between the marine habitat and fish production were not adequately examined to support this logic. The Project design did not take into account the impact of unregulated fishing on Yemen's Red Sea fishery but focused on a set of issues that were not the primary threats to the fishery or biodiversity.

B. Efficiency

The Evaluation Team found that the Project suffered from inadequate internal and external management. Although financial control of the Project appears to have been rigorous – much of the material inspected on file in UNOPS, GEF and the Country Office was concerned with finances - the monitoring reporting requirements did not help increase efficiency. Administration of the Project by the national implementing agency, MFW, was particularly weak. Reporting lines and general lines of communication and division of administrative responsibilities between the consultants, implementing agency, executing agency and UNDP GEF were poorly defined in Project documentation. Although a National Project Co-ordinator was appointed, his role in the management of the Project was not clearly specified.

The efficiency of Project implementation would have been greatly improved had the technical and steering committees been effective. The failure of these committees to meet and conduct their work was the single largest factor resulting in poor efficiency of implementation.

The entrenched stance adopted by the MFW in regard to its perception that the Project was a fisheries Project, despite evidence to the contrary was highly damaging to the Project. The Minister's apparent reluctance to allow his ministry to undertake the role of implementing agency was also a major impediment to efficiency. On a more positive note, procurement and importation of field and laboratory equipment was undertaken successfully. Much of the original equipment appears to be still in good condition, despite the harshness of operating conditions and lack of use since the Project effectively terminated. The national staff at the Project building in Hodeidah appear keen to ensure that the equipment is kept secure, hopeful as they are that funding will eventually become available for them to use it. Some items are in need of maintenance or repair, e.g. the SCUBA tank compressors, and the staff have recorded what is required to be done.

C. Outputs

Project activities are grouped under 10 discrete outputs. A brief analysis of the degree to which they have been achieved is provided below. Although 'success criteria' are given for three of the Project's four Immediate Objectives, precise objective indicators by which to assess the success of implementation and the impact of outputs are not provided in the Project document. The Evaluation Team therefore was forced to use an informal and somewhat subjective approach to assess the degree to which the Project's outputs were achieved.

The discussion of the Project's achievements at output level is drawn directly from the SWOT analysis presented in **Exhibit 1**.

Output 1.1 *Baseline data on the Red Sea coastal and marine ecosystems, key species groups, human uses and consequential environmental pressures.*

This output was partially achieved. National and international specialists were recruited in accordance with the Consultant's contract and duly fielded. The timing of inputs by international technical experts was tailored to in-country circumstances, especially in regard to the availability of national counterparts from the participating national institutions and funding to meet recurrent costs associated with fieldwork.

The Consultants identified appropriate technical specifications for the expendable and non-expendable equipment required for the Project. This was successfully procured through a UK supplier in accordance with UNOPS Financial Rules and Regulations. The consultants also successfully procured satellite imagery, aerial photographs and other remotely sensed sources of data.

During the Inception Phase (December 1995 – February 1996), Sana'a University successfully completed an impressive literature review, as well as undertaking a preliminary reconnaissance survey of coastal habitats to identify 'environmental hot-spots' and to collect tissue and sediment samples for analysis of contaminants. The literature survey and rapid reconnaissance work provided the basis for planning the succeeding habitat survey work. The literature review is given as Annex 5 in the Second Progress Report, rather than a stand-alone reference report. It seems logical that such work should ideally have been undertaken prior to the formulation of the Project, since the information gathered should have guided the design of the Project. The preliminary reconnaissance survey is well reported and clearly sets out the work undertaken and results and is given as Annex 4 to the First Progress Report.

Despite problems in obtaining a suitable survey vessel, delays in identification of counterparts and an absence of recurrent funding to support field work, field surveys were undertaken on at least 57 sites during 1996, 1997 and 1998. Assessment of near-shore and off-shore habitats was undertaken by the international consultants along with national consultants and counterparts. However, the number of sites that were surveyed during the Project was certainly less than might have been the case, due to a number of persistent problems. Also the geographical spread of the sites was reduced with a disproportionate number of sites being located north of Hodeidah. Great emphasis was placed on recording data on the biological and physical characteristics of coral reefs. Relatively little survey work was conducted on mangrove and seagrass habitats. Virtually no baseline data was collected on human use and consequential environmental pressure.

Unfortunately, reporting for this essential part of the Project work plan is not well presented. Survey methodologies and results (habitat classification, species occurrence, maps etc) are presented within the Progress Reports and a 'Project book' that was produced in place of Progress Report no.5 and the Project Final Report. The survey methodologies that were employed are not well described. Although based on standard survey texts, references are not cited in the reference lists provided.

The survey data recording sheets that were completed for each site are not given in the reports, as might reasonably be expected for long-term monitoring of specific sites. Some examples of data sheets are given as Annex 3 to the First Progress Report, however these do not have notes attached to assist in their completion, none of the sheets are titled and it is not clear how the 10 different types of data sheet relate to one another. Codes are used in data entry fields but there is no legend defining the codes. Consequently, it is not easy to see how these were used or might be used by the national counterparts in post-Project surveys and monitoring activities.

A practical manual for conducting surveys was not prepared. Had such documentation been produced and translated to Arabic, this would have been most valuable for continued use by the participating counterparts and institutions. The main body of Progress Report no.3 presents results of survey work conducted during the first half of 1997.

The GIS was developed in Australia and successfully transferred to and installed on a Project computer at Hodeidah. A demonstration version of the GIS was produced on CD-ROM, which also contained the Project book. The CD-ROM is structured like a World Wide Web site, designed to be read using Netscape software. The book is presented in the form of a series of HTML pages with text and linked images, animations and links to other applications (i.e. ArcExplorer and Netscape), which allows users to browse the datasets. Although client copies of Netscape and ArcExplorer are provided on the CD-ROM along with installation instructions, the Evaluation Team had considerable difficulty in getting ArcView to run properly under Netscape.

The full GIS, as established on the Project computer at Hodeidah, is well designed and forms a major deliverable successfully produced by the Project. However, again no stand-alone documentation (e.g. user's manual) was developed to assist counterparts in using the GIS to maximum benefit.

No environmental trend analysis for the determination of geographical variations in the environment over time was undertaken. Environmental data was not collected over a sufficiently long period of time to allow this. However the Evaluation Team considers that it is not feasible to expect a Project of short duration to undertake such trend analysis.

Training was successfully provided both in Australia and Hodeidah for national counterparts in the design and use of GIS. Unfortunately, the skills learned have since eroded due to the lack of use of the GIS by the trained nationals.

Participating national institutions undertook their respective tasks and obligations under their direct contracts with UNOPS.

The GIS is capable of producing high-resolution maps showing the information contained within the database that was procured through remote-sensed sources, as well as information obtained as a result of the field surveys.

The Project Document calls for a 'technical report' to be produced as part of this Output 1.1. Again, documentation describing activities and results for this Output is limited to the Progress Reports and the final book. A general comment for this and other outputs is that stand-alone technical reports for each major output would have been of much greater value to the national participating institutions. Indeed, the Consultant's Terms of Reference as given in Annex III of the Project Document specifies certain 'technical products', including such stand-alone technical reports.

Output 1.2 Design and establish a marine environmental monitoring system for the Red Sea. This includes identification of the most important sources and types of marine and coastal impacts, and design of a cost-effective monitoring protocol.

This output was not achieved. The most important sources and types of marine and coastal impacts were successfully identified, but primarily as a result of the literature review undertaken under Output 1.1 rather than through the Project's surveys.

A specific, detailed and cost-effective monitoring programme has not been established because no such programme was designed. The failure of the national implementing agency, MFW, to provide adequate funding and institutional support for

field monitoring activities has meant that even *ad hoc* monitoring activities have not been possible after the departure of the international consultants. A brief outline design for a coral reef monitoring programme is given in the Final Book. However, this focuses solely on monitoring dead and live coral cover at two specific reefs. It does not contain sufficient information on the logistical and technical aspects to be of practical value. The outline monitoring plan does not include other key habitats (i.e. mangroves, sea-grass beds).

The reports reviewed by the Evaluation Team did not clearly address how national institutions might build on the Project to instigate effective monitoring of marine impacts from various potential threats. The GIS provides an oil pollution simulator, which in theory could assist in modelling the behaviour of oil spills under varying conditions. A report produced by Danish consultants under the Project provides recommendations for the national Port Authorities to improve their oil terminal management capacity and also recommends action on oily waste, garbage and chemical wastes. However, no oil spill contingency plan has been drafted.

A technical evaluation report is called for in the Project Document. Again, no stand-alone technical document other than the Progress Reports and Final Book were produced.

Output 1.3 Development of a database and analyses of information

This output was well achieved. It is apparent that highly skilled international expertise was utilised in the development of the database and its associated GIS. Equipment was procured in accordance with contractual obligations. However, the choice of computer hardware and peripherals was based on quoted price and not, it seems, on the availability and quality of after-sales services within Yemen. The Evaluation Team was heartened to find that the computer systems purchased are all still in place and fully functional, although the system would benefit if the memory and screen were upgraded. Examples of marine maps produced by the installed GIS and database are given as annexes to Progress Reports 1, 2 and 3 and also in the final book.

Unfortunately, no technical report was produced, as called for in the Project Document. In addition, a practical users manual for the GIS/database should have been provided to make ongoing post-Project use of the GIS feasible. The omission of such documentation detracts from the potential value of the system developed. For guidance in the use of the GIS, national counterpart staff are currently using photocopied pages of a general manual developed by the Australian company that wrote the GIS software.

Output 2.1 Training in environmental information collection and interpretation, through on-the-job training of national specialists and trainees, training workshops and tropical coastal management, data collection and analysis, computer application, instrumentation, diving and cartography.

This output was partially achieved. Available reports provide conflicting and confusing information regarding the actual numbers of counterparts provided by the various national partner institutions. According to Progress Report no.4, eighteen persons were seconded as full-time national counterparts by participating national institutions as follows: MFW (6 counterparts), EPC (6), Sana'a University (4), PCMA (4) and Hodeidah University (3). However, later in the same report the names of only 18 counterparts are listed as having received training, three of whom are stated as being employed by the Hodeidah Ports Authority and three by MSRRC.

A national consultant was contracted to identify the types of training that the Project should provide through an assessment of national skills and requirements in the participating institutions in regard to marine environmental data collection and analysis. The report produced failed to identify specific needs and was of little use for planning the training programme. This failure was compounded by the failure of the international consultants to design an in-service training programme and short-term courses that would respond to needs. Thus the types of training given were rather ad hoc in nature and designed to fit in with the availability of the consultants, available funding and logistical considerations.

Nevertheless, training was successfully provided in most of the range of skills identified in the Project Document through a combination of on-the-job skills transfer, formal workshops and overseas courses/fellowships. Participants in the training courses interviewed by the Evaluation Team expressed satisfaction at the standard of practical and theoretical tuition given by the international consultants.

Training in instrumentation was limited to the use of hand-held GIS and in the use of water temperature loggers. The collection of environmental data through surveys and inputting this to the computer software developed was one of the strongest features of this output. Trainees interviewed appeared familiar with word processing, spreadsheet and database software installed on the Project computers. However, analytical skills, especially in regard to how to use the information collected in support of the Project's overall objective, did not appear to be as well developed. No evidence of training in cartography was seen.

No evaluation or technical reports on this training component was produced. Participants on the various training exercises were not requested to complete evaluation questionnaires at the conclusion of the training, thus making it difficult to evaluate the perceptions of the participants on the training received. The four progress reports and Final Book provide some details of the training elements of the Project, but the way this information is given makes it difficult to evaluate either the quality of the training provided or the impact of training in terms of national skills development.

It would have been most useful if stand-alone manuals for environmental data collection had been developed, specific to the circumstances in Yemen, for subsequent translation into Arabic.

Output 2.2 Training in environmental impact assessment (EIA) and monitoring, through on-the-job training of counterparts, in-service training programs, short-term courses, equipment operation/maintenance, technical training and analytical work.

This component was not achieved. Training was not given in EIA or the design and implementation of a monitoring programme. The same comments apply as made above in regard to the lack of clearly defined training needs.

Instruction in the use of equipment was limited to field survey gear (quadrates, transects etc), underwater cameras and SCUBA gear. No instruction was given in the use of laboratory equipment, or in the maintenance of either field or laboratory equipment. The absence of training in EIA and the conduct of a continuous environmental monitoring programme are matters for concern, since this severely undermines the longer-term impact that the Project might have had in building national capacity in these key areas.

As in the case of output 2.1 above, no specific evaluation/technical reports or training manuals as aids for future training were produced and the same comments apply.

Output 2.3 *Training in public awareness enhancement through in-service training of programmes and short-term courses.*

This output was partially achieved. A national EPC consultant through consultation with eight national government and non-governmental organisations assessed training needs in public awareness. These consultations highlighted the need to focus on providing information on (a) the Red Sea marine environment (b) the role of communities in protecting the marine environment, and (c) ways and means to increase public awareness of environmental issues. A workshop was held on 2-4 June 1998 to provide participants with this information and to improve their skills to disseminate such information. Thirty participants attended including teachers, other government workers and journalists.

The media were successfully enlisted to raise environmental awareness, especially along the Red Sea coast. Leaflets, posters, newsletters, newspaper and radio articles were successfully utilised. Public participation events included a beach sweep at Al Khawkhah and the rehabilitation of a mangrove forest near Hodeidah.

As in the case of output 2.1 above, no specific evaluation/technical reports were produced and the same comments apply. However, the Public Awareness component is well documented in Progress report no.4 and chapter 7 of the book. The Evaluation Team believes, however, that the degree of training provided through the three-day workshop was insufficient to materially improve national capacity in public awareness.

Output 3.1 *Identification of sites for MPA management, development of management guidelines and provision of on-the-job training.*

This output was partially achieved. On-the-job training was provided in MPA management. Training in MPA management was provided to one counterpart in Egypt. Three other counterparts attended courses in coastal management in Australia (one of these also received GIS training in Australia).

Selection of potential sites suitable for consideration as MPAs was based on the earlier work of IUCN rather than through original findings from the survey work conducted under the Project. It is not clear whether any specific sites have been suggested for consideration as MPAs. No guidelines for management of proposed MPAs were developed e.g. defined area, level of protection, monitoring criteria, public participation and financial mechanisms to support management.

Exchange and review of marine resource data with other national regional and global programmes occurred to varying degrees. Interaction with the Egypt GEF Project certainly occurred mainly through the conduct of joint workshops. The Project interacted well with the PERSGA Strategic Action Plan (discussed more fully under Output 4 below).

However, there is no evidence of tangible interaction with the Fourth Fisheries Development Project, funded by EU/WB/IFAD and based at MFW in Aden. This is regrettable, since two marine habitat surveys of the south Yemen coast, and also one specific habitat survey of the Island of Socotra, were undertaken under this Project. The sampling and analytical methodologies, techniques and data recording sheets that were developed should have been considered in the design of the Red Sea coastal surveys in the interests of consistency. In addition, a GIS was established at the MSRRC branch in Aden. Information on fisheries of Yemen, including the Red Sea fisheries, was comprehensively documented under the Fourth Fisheries Development Project. However, the Project made no use of this wealth of

information, despite the fact that international staff engaged on the Fourth Project did contact the CTA (a meeting was held with Chiffings and e-mail communication was established with Dou Abel) and copies of the habitat survey reports for the Gulf of Aden coast were provided. In addition, the Coastal Marine Pollution Centre, which is part of MSRRC and located at Little Aden and in theory is the national centre charged with monitoring marine pollution, is not mentioned in the Project Document and there seems to have been no dialogue between the Project and the staff at this facility.

Again, no technical or evaluation reports were produced, other than the material contained within the progress reports and book.

Output 3.2 Increased public (including private sector) awareness of marine environmental issues and sustainable use.

This output was partially achieved. A national Public Awareness specialist held discussions with eight national public and private sector bodies had the result that this component was relatively well planned. Specific programmes were designed for raising public awareness through secondary schools and also through radio media. Leaflets and posters were designed, produced and distributed. A video was also prepared on marine environmental matters along the Red Sea coast. EPC reported that much of this material is still in use today.

However, again no specific evaluation or technical reports were produced. The failure to provide such stand-alone documentation on specific Project outputs makes it difficult for the participating institutions to build on the results of the work conducted. Furthermore, it is also evident that the duration of the public awareness enhancement activities, limited to a six-month period, was too short to have a significant or sustainable impact on public awareness.

Output 3.3 Identification of potential recurrent cost financing by an international expert for post-Project activities.

This output was not achieved. An international expert was not fielded to undertake activities envisaged under this output. A national consultant was contracted to address this component, but the report produced was of little value in identifying potential funding sources from users of the marine environment. There was no follow-up on this report, either to strengthen it or to initiate discussions with potential funders of post-Project activities.

This output was a crucial element for the sustainability of the Project and failure to achieve the desired output has certainly been detrimental to the sustainability of Project activities.

Output 4.1 Co-ordination with Egyptian GEF and other regional activities (e.g. the Red Sea Strategic Action Plan).

This output was achieved. Although the Evaluation Team did not see evidence of close co-ordination with the Egyptian GEF Project, other than one reference to a training course that was held in Egypt under the auspices of the GEF Project there, which was attended by Yemeni national counterparts, it is clear that the Project co-ordinated very closely with the Red Sea Strategic Action Plan being implemented by PERSGA. Indeed, a number of the national counterparts in MFW, EPC and MSRRC are actively involved in the implementation of various components of the SAP as part of Yemen's national involvement to this regional initiative.

The PERSGA CTA was funded under the Project and was involved in co-ordination meetings during 1996. PERSGA assisted in arranging a Saudi dive instructor who successfully trained six nationals in SCUBA diving. The Project and PERSGA successfully collaborated in a regional workshop on environmental surveying and monitoring, held in Hodeidah during 6-11 December 1997. Twenty-one specialists from six of the PERSGA member states attended. Increased exposure of Yemeni scientists to regional environmental and fisheries initiatives such as those being implemented through PERSGA's SAP, and the greater regional co-operation such exposure engenders, is one of the tangible achievements of the Project.

The level of implementation of Project outputs is summarised in the table below.

Output	Achieved (complete or partial)	Comment
1.1	Partially achieved	Survey activities and results not presented as stand-alone reports
1.2	Not achieved	No workable monitoring programme designed
1.3	Achieved	High quality database and GIS in place and still operational
2.1	Partially achieved	Ad hoc training due to inadequate planning and needs assessment
2.2	Not achieved	No training in EIA and continuous monitoring techniques
2.3	Partially achieved	Good use of media and workshops increased public awareness
3.1	Partially achieved	Possible MPAs not identified as a result of Project surveys
3.2	Partially achieved	High quality public awareness material developed and still in use
3.3	Not achieved	Potential sources for meeting recurrent costs not identified
4.1	Achieved	Real progress has been made in increasing regional co-operation

Total number of outputs:	10
Outputs successfully achieved:	2
Outputs partially achieved:	5
Outputs not achieved:	3

D. Immediate objectives

Four immediate objectives are defined in the Project Document. These are equivalent to the four results given in the Logical Framework (**Exhibit 3**). Expressed as intended end of Project situations these are discussed below, with analysis based on the 'Project review and situation analysis' presented in **Exhibit 1**.

1. Resource inventory and assessment carried out and monitoring system established

The Project has made a significant contribution to increasing the information base on species occurrence and status of coral reefs at specific locations. Far less quantitative and qualitative information was obtained for other marine habitats, such as mangroves and seagrass beds. The surveys that were conducted focused mainly on training in survey techniques and data collection on species assemblages.

Information on human use of resources, threats and impacts was not a major focus of the surveys and the Project relied heavily on the findings of other workers in this regard. The coral reef resource inventory developed is more comprehensive for the areas around and to the north of Hodeidah, mainly as a result of logistics and security factors discussed previously. In consequence, the resulting resource inventory and assessment of the status of the habitats of the Red Sea coast is 'patchy' and much more survey work is required for a coast-wide overview of the situation.

Survey data was successfully entered into the databases developed, along with information from numerous other sources (such as the work conducted by IUCN). The GIS developed is capable of generating user-defined maps showing various features revealed by the collection data and also based on other survey work data.

The Evaluation Team however found little evidence that the Project has enhanced the ability of the government to avoid or reconcile coastal conflicts, or to identify future opportunities for sustainable resource use. The staff at the Hodeidah facility cited only one occasion that a request has been made to utilise the GIS for practical purposes²⁸.

In summary, despite the useful survey work undertaken, no on-going monitoring programme was designed or implemented. The GIS and database are consequently 'frozen in time' and outputs from the GIS merely provide an historic 'snapshot' of the situation. This is a major failure of the Project.

2. National capacity for marine environmental management improved

Although a degree of institutional development was achieved, inadequate consideration was afforded to the sustainability of Project achievements. This result may be divided into two parts; the strengthening of institutions responsible for the protection of marine ecosystems of the Red Sea coast; and the strengthening of human resources. Together, these two components would comprise national capacity.

Institutional strengthening

The Evaluation Team found the most significant aspect of institutional strengthening to lie in the establishment, by Prime Ministerial decree dated 10/12/1999, of the Centre for Marine Science. This Centre provides an institutional location for the facility put in place by the Project. However, the facility is administratively part of MSRRC, an institution that itself lacks the financial and administrative guidance needed to perform its role adequately. MFW has two other facilities in Hodeidah: a branch of NCSFM concerned with providing support services to fishermen, and also a further branch, the functions of which did not become clear during the evaluation. The chain of command and respective responsibilities between MFW/Sana'a, MFW/Hodeidah and MSRRC/Aden appears ill defined. It was clear at the time of the evaluation that there is still a significant institutional divide between Yemeni institutions concerned with the marine environment, especially between MFW and EPC. Inter-institutional co-operation in marine environmental matters must improve and respective responsibilities must be better defined if the government is to capitalise on the progress made by the Project. This, however, is an internal matter and beyond the scope of the Project.

Although the Project had a strong environmental focus, the EPC remains weak as an institution at the national level. EPC's involvement in the Project was severely

²⁸ A request from the local tourism authorities for information on the location of coral reefs that might support dive tourism. A report and maps were apparently produced, although a copy was not sighted.

reduced by the stance adopted and maintained by the then Minister for Fish Wealth, who appeared intent on limiting any institutional building benefits to the Ministry of Fish Wealth alone.

Human resources development

Human resource development was to be achieved through a mixture of formal training courses (national regional and international) and on-the-job training. The training aspect was severely constrained by the failure of a national consultant to adequately identify the abilities, strengths and weaknesses of the human resources in the participating institutions at the beginning of the Project. It is unclear how counterparts were chosen for attachment to the Project in accordance with the specified qualifications and role identified under each of the contracts between UNOPS and the national participating institutions. Training courses were not well designed, but were rather driven by circumstances. The Evaluation Team found it difficult to determine exactly how much training was imparted to counterparts, given the confused structure of the reports presented (the numbers trained by topic indicated in exhibit 1 are a best estimate). Failure to ensure that the trainees provided feedback on training courses also makes evaluation of this result difficult, although the counterparts interviewed appeared satisfied with what they learned.

The training component successfully imparted technical skills in survey techniques, species identification, GIS/database construction and data entry. It failed, however, to provide training in a number of other key areas specified in the Project Document. Omitted training subjects or areas were environmental impact assessment; analysis and interpretation of data; research based management; cartography; and basic project management (i.e. guidance for the National Project Co-ordinator).

The Evaluation Team views the failure of the Project to enhance national skills in the incorporation of marine issues into the national decision making process and formulating policy for the marine environment as a major omission.

Although only 2.5% of total Project budget was allocated to training, this potential constraint did not appear to impact on the training component and maximum use of the funds available appears to have been made.

The National Project Co-ordinator also reported that no training was imparted in Project administration and financial management, which left him without the skills to continue in his role.

The Evaluation Team found no evidence that the Project had resulted in an increase in the number of marine conservation courses in national universities and schools that was specified as an indicator of achievement in the Project Document.

In summary, the Project succeeded in developing human resource skills in the participating institutions and in establishing and equipping a functioning facility. The personnel still attached to the facility constitute the strongest institutional structure for allowing Yemen to protect the Red Sea marine ecosystem. The Evaluation Team believes that though the existing cadre of personnel would benefit from further training they are already well placed to assist in the monitoring of threats to the marine environment should adequate financial and institutional support be provided.

3. Red Sea environment and resources sustainably used

This immediate objective aimed to assist government to select sites of high conservation value for designation as marine protected areas and in developing guidelines for their management. The phrasing of this objective makes evaluation difficult particularly in the absence of indicators. However, the Evaluation Team considers that this objective was not achieved, despite its high degree of relevance

and appropriateness. Three outputs were included under this result covering work on marine protected areas, public awareness and post Project financing.

Fifteen potential sites for MPA designation were identified through the work conducted by IUCN in 1987, as described by Banoubi (1997a). The Project results did not indicate any additional sites for MPA consideration, nor was the potential of these sites re-considered by the Project. Interestingly, Banoubi's paper calls for the formulation of a national coastal zone management plan. The Project could certainly have assisted in this but it appears the call went unheeded.

None of the candidate sites for MPA designation was advanced to this status as a result of the Project and no guidelines were produced to assist national institutions to manage such sites, should any be established. Although fellowship training was provided to one counterpart in MPA management, any skills imparted must necessarily have been wasted since no MPAs have been established.

The public awareness aspect included under this immediate objective was accomplished. Increased public awareness was the major task of EPC's Memorandum of Agreement (MoA) with UNOPS. The consultations conducted by the Public Awareness Specialist, contracted as per the MoA, appear to have been thorough and well thought out. As a result, a public awareness campaign was devised and implemented, appropriate in scale and content to the time and financial resources available. The Evaluation Team was impressed with the material developed to increase public awareness (posters, videos, brochures, etc), much of which is still being used by EPC as part of their on-going national environmental public awareness campaign. Despite the obvious strength of this component, EPC failed to highlight the success of this result through a very inadequate 3-page 'Final Technical Report' (Environmental Protection Council, 1999).

No useful work on possible sources for financing post-Project recurrent costs was achieved, despite the recruitment of a national consultant to undertake this. The report produced was of no value (Banoubi, 1997b). The Evaluation Team considers that this element was crucial to the longer-term sustainability of the Project. Failure to adequately consider longer-term financing of Project activities has led largely to the cessation of Project activities from the time of completion of contract by the international consultants.

In summary, this result has not been achieved, and the Project made little contribution towards it.

4. Regional co-operation for the management of the Red Sea environment enhanced

This output aimed at regional co-operation in the planning and implementation of environmental activities in the Red Sea region. No success criteria are indicated in the Project Document, making evaluation difficult. However, it is evident from discussions that this output was largely achieved. The Project provided direct funding to support the key positions of the CTA of PERSGA and Assistant Co-ordinator within PERSGA headquarters in Jeddah during the early stages of formulation of the regional Strategic Action Plan. Regional co-operation was also enhanced through the successful conduct of several regional workshops, although it seems that the planned regional workshops in EIA and PMA management did not occur.

Many national experts interviewed by the Evaluation Team expressed considerable support for the now well-established and ongoing activities of the PERSGA Strategic Action Plan that directly support those activities undertaken by the Project. Yemen has a long history of institutional and scientific 'isolationism'; personal, professional and institutional linkages between Yemen and opposite numbers in the immediate region have never been strong. One of the successes of the Project has been to

break this tradition. Continued involvement of the Yemeni participating institutions in SAP activities may offer the single most viable mechanism by which this success can be built upon and expanded.

In summary, the Evaluation Team concluded that this result seems to have been adequately achieved, but the lack of documentation and reports that were to have been produced by UNEP, contractors to the Project, made evaluation difficult.

E. Development objectives

The stated development objective of the Project is:

“To enhance sustainable development and use of natural resources, to strike a balance between economic growth and environmental considerations, and to strengthen human, institutional, technical and scientific capabilities and capacities to protect and manage the marine environment.”²⁹

These development objectives were to be achieved through:

“The elaboration and application of appropriate planning and management strategies for controlling and reducing the degradation of its marine ecosystems and resources.”

Secondary objectives were to:

- “Support and reinforce regional efforts to manage the marine resources of the Red Sea”;
- “Develop procedures for combating major oil spills, including access to oil spill control equipment”; and finally to
- “Contribute to the protection of a body of water of considerable importance for global biodiversity and for artisanal and commercial fisheries and tourism in the region”.

The Project design did not make the mechanism through which these would be achieved entirely clear. In addition, the Evaluation Team felt that these development objectives were over ambitious for a Project of such short-duration and modest financial size and were not sufficiently focussed on what is achievable.

In order for the Evaluation Team to comment on the degree to which the achievement of the Project’s immediate objectives or results led to the achievement of the Project’s development objective, it was felt to be important to modify the Project’s logic by proposing a single, clearly defined Project purpose – see **Exhibit 3**. For the purposes of this evaluation, the Evaluation Team suggests that this purpose was:

- *“Sustainable Yemeni institution for monitoring, analysis and reporting on the Red Sea marine environment to advise policy and decision makers established and operational.”* The achievements of the Project in the immediate objectives discussed above leads the Evaluation Team to conclude that significant steps were made towards the achievement of this purpose. The Centre for Marine Science (i.e. the Project building and its staff and equipment) has been established in law.
- A cadre of trained and motivated nationals has been built.

²⁹ Project Document, section C, page 14.

- Awareness of the uniqueness and importance of the Red Sea marine environment has been raised amongst coastal communities, the wider public and government circles, and amongst the international community.

The Project has successfully established a base, therefore, from which greater protection of the Red Sea marine ecosystems might be launched. The Evaluation Team feels that this constitutes a remarkable achievement given the problems that were faced, and represents a significant contribution towards the stated long-term development objectives of the Project.

It is clear, however, that the institution developed through the Project is not sustainable, nor is it currently operational. In this light the Project must be considered to have failed in the achievement of its purpose. It is now incumbent upon the government of Yemen and supporting international agencies to recognise the achievements of the Project in building a capacity for the monitoring and analysis of the Red Sea marine environment and to put in place adequate institutional and financial support if they are to build upon and not entirely wasted.

F. Effectiveness

Hindsight is always a powerful tool for project development. There is, however, an expectation that project evaluations will employ it. Despite the finding that the Project achieved a great deal, the Evaluation Team felt that using a modified approach would have increased its effectiveness. In particular, the Evaluation Team feels that the Project would have been enhanced by:

- Better identification of problems to be addressed at the design phase;
- Greater consideration of the results of other work conducted on the Red Sea marine environment at the inception of the Project;
- Greater involvement of stakeholders in the design of the Project,
- Greater consideration of the well-reported results of the Fourth Fisheries Development Project in regard to marine habitat surveys and fisheries surveys undertaken and the GIS established at Aden; and
- More proactive involvement of the donor agencies to correct the obvious problems in implementation modalities as they became apparent.

Greater consideration should have been made on exactly how the essentially technical results of the Project would effectively flow into the decision making process for policy and management formulation of the Red Sea marine environment.

In terms of the overall cost of the Project, the Evaluation Team feels that the Project achieved a considerable amount of high quality work for the investment of nearly \$3 million, but that it would be difficult to say that this work represented an adequate or meaningful return on the investment.

G. Capacity building

The Evaluation Team feels that one of the most important achievements of the Project has been its contribution to the development of human resources in the participating national institutions. The Centre for Marine Science has a number of trained and motivated local people with significant skills and the necessary interest to continue the work started under the Project. Other personnel who benefited from involvement under the Project are presumably still in post in their various institutions throughout Yemen.

The opportunity for sustaining this potential needs to be urgently considered by

government if the skills base is not to erode further and the achievements made lost. In particular, the institutional arrangements that should be put in place regarding the management and operation of the Centre need to be rationalised and implemented soon.

EPC is not sufficiently strong to achieve its mandate. Largely due to institutional, structural and leadership issues pertaining to EPC, the Government of Yemen has apparently taken the need to re-examine the roles, functions and structure of EPC seriously that should strengthen their participation in similar projects in the future³⁰. Environmental policies in general and especially as they pertain to the future development of Red Sea marine resources need to be reviewed. The respective roles of government represented by EPC, MFW, MSRRC, local government, and the supporting roles of institutions such as the Universities of Hodeidah and Sana'a must be determined, and appropriate legal and institutional structures developed for them.

H. Impact

The Evaluation Team did not identify any significant unexpected effects of the Project. The results of increased contact with the wider political and scientific community have already fostered considerable benefits, although these are hard to quantify.

I. Sustainability

The sustainability of achievements made by the Project is of concern to all involved institutions. The Evaluation Team is concerned that the achievements made have not been sustained since the Project ended, in either administrative or operational terms. The current situation is that the Project's achievements will continue to erode if adequate financial and administrative support is not provided to the Centre that has been established in Hodeidah. This is a major issue for urgent consideration by the Government of Yemen. It is clear that in order to ensure a real return on the investment made to date, further investment is needed. It is also recognised that halting support for the protection of the Red Sea's marine ecosystems and biodiversity will send the wrong messages to the people of Yemen and might actually result in a negative response to conservation initiatives.

The greatest achievements of the Project are considered to be the development of the GIS, the establishment of the Centre for Marine Science with its cadre of trained and enthusiastic nationals and the progress made in raising awareness of marine environmental affairs. However, these achievements are vulnerable.

The GIS and associated databases remain largely unused to date. The data contained has already become outdated due to the failure to implement an appropriate ongoing monitoring programme. Improved protection and management of Red Sea marine natural resources will not occur unless the need for continual data collection through monitoring is recognised.

The staff and equipment at the Centre are currently under-employed. No use is being made of their capabilities. In any case, the current level of funding is totally inadequate to maintain anything more than staff salaries. If this situation is not addressed, staff skills will erode and interest will wane in marine environmental matters. Some of the staff now possess a number of highly saleable skills, including proficiency in the English language and the use of computers, and are likely to find jobs in the private sector or in other projects. Though not necessarily a loss to

³⁰ During the course of the evaluation mission it was announced that the Government of Yemen had established a Ministry of the Environment.

Yemen, as their skills will benefit the country wherever they are employed, this will be a loss in terms of the stated overall goal of the Project.

The reasons for the general lack of sustainability of Project achievements have been discussed elsewhere.

J. Follow-up

The Evaluation Team was requested to examine the desirability of further support by GEF in line with the original intentions of the Project. Considerable interest was expressed in this regard from all parties involved in the Project.

The poor performance of the Project in terms of achieving its goal might suggest that there is little reason to commit further funds. The failure of the Government of Yemen, through the Ministry of Fish Wealth, to play its role in guiding the Project has also been noted. The Evaluation Team believes, however, that the Project has established a potentially valuable asset for the protection of the Red Sea marine environment that will rapidly erode without further investment.

The Evaluation Team was informed that a balance of approximately US\$ 120,000 remains on the Project account and could, in theory, be made available by GEF for continuing support to the Government of Yemen in pursuit of the original Project purpose. The Team is not, however, minded to provide a recommendation on the use of these funds, as a narrow proposal with an attached budget would not necessarily be helpful at this stage. Instead, three options and a discussion of their respective implications are presented. It is hoped that these will assist GEF decide how best to proceed.

Option 1. Project terminated with no further support

The failure of the Government of Yemen to support or promote the Project or demonstrate any apparent interest in it provides sufficient reason for GEF to terminate it at this point and re-programme the remaining funds. This would avoid the danger of 'throwing good money after bad.' Without substantial changes in the attitude of Government, especially with respect to the role played by the Ministry of Fish Wealth and the oversight provided by the Steering Committee, there is little guarantee that expenditure of the remaining Project funds will achieve anything at all.

The negative aspect of this option is that the considerable investment made to date would be effectively 'written off'. This would reflect poorly on the Government of Yemen and GEF. It also ignores the possibility of enhancing the sustainability of the Project's few achievements to date. Though almost US\$ 3,000,000 has been spent with little effect, risking what amounts to no more than a further 4% of this amount could achieve important results, modifying what stands as a significant failure to a modest success.

Option 2. Expenditure of remaining balance on a no-cost extension – without additional resources:

A no-cost extension could consolidate the achievements of the Project to date, focusing on strengthening them and improving their sustainability. This option has the advantage that funds are immediately available allowing a rapid response to be made. This is important given the fragility of the existing centre and its human resources, the main achievement of the Project. There are two dangers to this option. Firstly, the MFW may not improve its performance significantly and the funds will be expended without achieving any significant improvement in the overall Project performance. Secondly, the funds may not be sufficient to achieve the consolidation of the Project. A no-cost extension could, however, turn some of the Project's failures into partial successes, improving on the overall performance of the Project

within the original budget.

In this option, the Evaluation Team suggests that the remaining Project funds should be utilised in order to provide recurrent funding for the Centre as a second phase or a no-cost extension of the original Project. Whatever form the follow-up assumes, it should be designed to ensure that the achievements of the Project to date form the basis for further support.

The Evaluation Team suggests three priority actions for a Project extension:

- Establish the Centre as a regional training centre for training PERSGA member country staff in environmental assessment and monitoring. This would utilise the capacity already built at the Centre, allowing it to be strengthened by ongoing technical and financial support for a limited period as well as achieving added value through enhancing its regional impact. This would further integrate Yemen in the regional initiatives currently underway to promote national capacities and enhance regional co-operation as well as allowing an environmental monitoring programme to be established.
- Promote the Centre's national role as a source of data and technical advice for decision-making and policy development on issues concerning the marine environment. This would be achieved by employing the Centre to train middle and senior level government officers in the use of monitoring, data analysis and reporting in decision-making and policy development.
- Through these activities, establish an institutional and financial structure based on the provision of national and regional services that will promote the operational and institutional sustainability of the Centre.

These three proposed focal areas for a no-cost extension can be regarded as the basis for a logical framework. In this, the purpose can be expressed as the establishment of a sustainable institutional and financial structure that would contribute towards the goal of protecting the marine environment of the Red Sea. **Exhibit 5** presents a truncated logical framework developed by the Evaluation Team for the proposed no-cost extension. It is based on discussions held during the evaluation mission. Further consultations would be needed and a considerably more detailed planning process undertaken to finalise the activities and format of the proposed Project extension.

The Evaluation Team recommends, however, that certain conditions should be laid with regard to the proposed Project extension:

- The extension should be executed by UNOPS under the direct management of the UNDP Country Office.
- Institutional arrangements for the extension should be reviewed. As an environmental project it is misplaced within the MFW, while the Ministry of Education and Research or the new Ministry of the Environment might be more appropriate affiliations. The institutional affiliation of the Centre might need to be reviewed by Government in this light.
- Government of Yemen must demonstrate commitment to the Centre by provision of increasing the subvention to the Centre to cover annual costs of some degree of monitoring of the Red Sea marine environment.
- Government of Yemen must secure PERSGA's commitment to use the Centre for training and a commitment to provide funds to the Centre to organise at least three training workshops.
- Close relations between the Centre and the University of Hodeidah should be

developed. The University should probably have a key role within the Project extension.

Despite the risks, there is reason to believe that with appropriate oversight and support, a no-cost extension could be successful. It would probably be desirable to reduce international technical support to a minimum and depend on proven local expertise. In this way, the sum available could be expected to achieve a considerable amount of work. Selection of a suitable Yemeni expert to play a leading role in the extension will be crucial. An officer of the calibre of, for example, Hashim Al Sakaf, who has a wealth of local experience as a Research Scientist with MSRRC, and as PERSGA Country Representative is well connected regionally, would be appropriate. It may be desirable for UNDP to be proactive in ensuring recruitment of a suitable Yemeni, and might wish to specify secondment of selected individuals as a condition of agreeing to the extension.

Option 3. Mobilisation of additional funds for further support to Yemen's marine environment:

This option recognises that the funds remaining on the Project account may not be sufficient to achieve the consolidation of the Project's achievements and are certainly not sufficient to achieve the original purpose of the Project. This option is desirable in the medium term if the mobilisation of significant further inputs by GEF into the conservation of Yemen's marine environment is viewed as feasible.

If GEF were to pursue this option, a thorough process to design the expected results of a second phase project would be necessary. This would need to take account of ongoing or proposed activities in the region, most notably the proposed intention of PERSGA to make the MSRRC in Aden a regional training hub for fish stock assessments under the SAP. The IFAD agreement to provide regional funding for fisheries assessment activities and support for the marine environment should also be considered in the project design, especially as the MFW is already identified as a likely beneficiary of this support.

The design process would also have to deal with the concerns raised in this report and in the Burbridge report on institutional aspects of any future project's implementation, and the role of the Government of Yemen and the Ministry of Fish Wealth in particular. Without a significantly more positive approach by Government the Evaluation Team can see little purpose in committing more funds to support the monitoring of Yemen's Red Sea marine environment.

The primary difficulty envisaged in pursuing this option is the time required to develop a sound proposal, ensure appropriate institutional arrangements with the Government of Yemen, and identifying funding sources. The delays that are likely to be caused by the process could cause the existing facility to decline, in the absence of ongoing support, to a point where any new project would need to begin work effectively from scratch.

The Evaluation Team feels that options 2 and 3 might be considered together and presented to the Government of Yemen in this light. The development of a modest, locally based package of support for the Centre, administered by the UNDP Country Office would ensure that existing human capacity was retained and provide a framework and institutional support for the development of a more substantial project. It would also act as a measure of the commitment of the Government of Yemen to the monitoring of the Red Sea marine environment and begin the process of establishing a demand for the products of this monitoring. The implementation of option 2 would also give both time for and support to the development of a fully-fledged second phase project proposal as envisaged under option 3.

VII. Conclusions

The conclusions that are presented here are all prefigured in the detailed discussions presented above and are drawn directly from the SWOT presented in **Exhibit 1**.

A. Findings

Project design

Project design was poor in terms of both process and product. The Project design was not undertaken using a sufficiently rigorous or inclusive process. Though the Project was originally formulated in 1991/92, a range of formal design processes already existed but it is clear that none were used. The absence of a logical framework as part of the proposal confirms this. The Evaluation Team also recognises that GEF was in its infancy and had not established its procedures for either design or review of projects. The failure to employ a formal design process had several important consequences both in terms of the quality of the proposal and in terms of the participation of stakeholders in the Project:

- Realistic outputs and indicators were not developed, making formal evaluation difficult.
- The identification of the problem to be addressed by the Project was hazy, leading to a difficulty in relating the Project's suite of activities to a desired 'end of Project' position. This meant that the Project document could not provide the necessary guidance for the implementation of the Project.
- The logic of the Project was weak. The absence of a single, clearly defined purpose that the Project was committed to achieving meant that the Project's immediate objectives or results were not logically linked.
- The Project was over ambitious both in terms of its expected impact and in the work to be undertaken.
- The design failed to take adequate account of existing Projects and their achievements and the wealth of existing data on the Red Sea marine environment. The Project therefore included the replication of existing work.
- The confusion in the Project's results made it possible for the Ministry of Fish Wealth to divert what was intended to be an environmental Project into a fisheries production Project.
- The weak analysis of stakeholders and Project partners in the Project design resulted in the development of an institutional framework for the Project that could neither adequately deliver results nor ensure the sustainability of those that were achieved.

Project implementation

The quality of Project implementation was mixed. On the positive side:

- Administration of and accounting for the Project by the international consultants were generally adequate.
- Basic implementation of the Project was solidly carried out. The majority of expatriate and national staff and national consultants performed to a high standard and were conscientious, hard working and enthusiastic.

- High quality work was achieved in difficult circumstances. The credit for this must be equally apportioned between the international consultants, the national counterparts and the contracted national institutions.
- UNOPS and the UNDP Country Office performed well in terms of administration and backstopping.

On the negative side:

- The Ministry of Fish Wealth did not play its role in the implementation of the Project and seemed to have actively frustrated important elements of its implementation.
- All parties in the Project's implementation allowed the failure of both the Steering Committee and the Technical Committee to meet to go unresolved.
- Insufficient attention was paid to strategic planning. The opportunity to address problems created by the Project's weak design provided by the Technical Review of 1996 was not taken.
- Formal contractual requirements of the international consultants, national consultants and Yemeni institutions were not always provided and UNOPS did not appear to monitor Project progress sufficiently closely to note and address these failings.
- Some very poor reports and inadequate Project deliverables were accepted by GEF when they should have been rejected and payment withheld by UNOPS until shortcomings had been addressed.

Sustainability of Project results

The sustainability of Project results has been found to be generally low. The reasons for this have been identified as stemming from:

- Poor Project design that did not adequately address institutional elements of the Project.
- Failure of the Government to commit adequate funds for the operation of the Centre developed by the Project.
- Failure of the Project to implement the suite of activities designed to address the issue of sustainability by identifying and tying in appropriate institutions for the funding of post-Project monitoring activities.
- Weakness in elements of implementation, particularly with regard to the preparation of technical reports in the form of training manuals and monitoring protocols which would have provided a resource for ongoing activities.

B. Assessment

1. Relevance

Purpose

The purpose of the Project, as suggested by the Evaluation Team, has a high degree of relevance to the main stakeholders in the Project:

- The Government of Yemen has current and future interests in the marine environment of the Red Sea. Current interests centre around the influence of the marine environment on the important Red Sea fishery and the contribution this makes to the national and local economy. Future interests may include

the development of a marine based tourism industry.

- The protection of the marine environment of the Red Sea is relevant to the region and in particular, those countries with Red Sea coastlines. The interests of these countries are represented by PERSGA, which was a prominent partner of the Project.
- The rich biological diversity of the Red Sea and the threats to it presented by the development of the coastal zone in Yemen and the unregulated and unsustainable fishing effort provided the Project with a high degree of relevance to GEF.

Whether the Project can be regarded as affordable is difficult to assess. The investment of approximately US\$ 3 million on a resource of the value of the Red Sea's biodiversity and its fish stocks is not excessive. Neither, it is suggested, would the cost of continued monitoring of the marine environment to the Government of Yemen. Given, however, the financial constraints known to exist within Yemen, it is questionable whether the Centre that was established by the Project was likely to be considered affordable. There are sufficient examples in Yemen of investment in infrastructure and institutional development without subsequent operation to put this in doubt.

Approach

The general approach adopted by the Project, to focus on training and institutional development was appropriate both to the needs of the Government of Yemen and the interests of both UNDP and GEF. There is reason to question, however, the way the general approach was translated into activities on the ground.

2. Performance

Overall performance of the Project cannot easily be evaluated. This is partly because of the lack of clear objectively verifiable indicators by which to judge progress or impact and partly because of the mixed nature of the performance found by the Evaluation Team. Some activities were very well carried out while others were not implemented at all. The following assessment of performance is therefore highly subjective. The lack of quantifiable performance indicators should not, however, prevent a meaningful assessment and the generalised conclusions that follow do provide a reasonable assessment of performance.

Personnel

The majority of Project personnel are believed to have performed to a high standard in often-difficult circumstances. Inevitably there were exceptions and it is apparent that some Project personnel did not perform well and were replaced, either by the Ministry of Fish Wealth or the international consultants. It is also apparent that the selection of national counterparts was not always carried out with regard to their suitability in terms of existing skills or interest and commitment. It was suggested to the Evaluation Team that several of the national counterparts selected by the MFW were totally inappropriate and gained little from the training opportunities provided by the Project. In these cases, the Government of Yemen lost the potential development of its technical officer cadre.

Training

Training provided by the Project was of mixed quality. Insufficient attention was paid to planning the training component or to providing training materials or evaluation of the training component. However, recipients of the training told the Evaluation Team that the trainers themselves were enthusiastic, skilled, knowledgeable and hard working.

Equipment

Suitable equipment was purchased and imported. Provisions for maintenance were not adequate, however, and insufficient attention to this concern was made while selecting suppliers.

Major contractors

The major contractor to the Project was Hassall and Associates. By and large the Evaluation Team believes that they performed well in difficult circumstances. It is clear, however, that they did not meet all the terms of their contract with respect to specified deliverables and technical and evaluation reports. It is regrettable that rather than be open about the shortcomings of Project implementation it appears that efforts were made to conceal them. In this regard, the Project progress reports are not always transparent and needed careful reading and a wide familiarity with the Project to interpret. In some cases there were statements of achievements or activities carried out that the Evaluation Team could not confirm.

3. Success

The logic of Project design requires that the results (immediate objectives) should be necessary and sufficient to achieve the Project purpose, and that the purpose should make a significant contribution to the long-term objective or goal. Therefore, if the results are achieved, the purpose should be achieved, and if the purpose is achieved, it should contribute towards the achievement of the overall goal.

The fundamental question that the Evaluation Team attempts to answer is therefore:

Has the Project been instrumental in protecting the marine ecosystems of Yemen's Red Sea coast?

In considering this question the Evaluation Team has reviewed the range of activities designed and implemented and the degree to which these have contributed towards achieving the Project results. How have these combined to achieve the Project purpose and goal? The Evaluation Team proposed a purpose for the Project as the Project document did not clearly state one:

Sustainable Yemeni institution for monitoring, analysis and reporting on the Red Sea marine environment to advise policy and decision makers established and operational.

With respect to this the Evaluation Team notes that a Yemeni institution for the monitoring, analysis and reporting on the Red Sea marine environment was established. The Evaluation Team was able to observe the Centre's existence on the ground and interview members of its core staff. Furthermore, its institutional location within government structures was demonstrated, evidenced by the provision of operational funds and staff salaries (albeit inadequate) through the Ministry of Fish Wealth and the formal legal establishment of the Centre by decree.

However the Evaluation Team found little evidence that the Centre was operational in a meaningful sense. No collection of data from monitoring sites had been carried out once Project funds were finished. Therefore no updating of the databases or construction of time-sequence data had been achieved.

Furthermore, it was evident that the capacity of the Centre to support decision-making and policy development was neither recognised nor made use of by the Government of Yemen.

The Evaluation Team's overall conclusion, therefore, is that:

Despite the establishment of the Centre and the development of a cadre

of staff trained and equipped to monitor the Red Sea marine environment, the Project has not made a significant contribution to the protection of the marine ecosystems of Yemen's Red Sea coast, though the potential for such a contribution has been created.

VIII. Recommendations

The recommendations detailed below are drawn from the 'Project review and situation analysis' SWOT, the results of which are presented in **Exhibit 1**.

Immediate, general or specific recommendations

- Where the lead Government agency is clearly deficient in meeting its obligations and appears to be actively obstructive, as was the case in this Project, the donors and executors must have the courage to suspend Project activities.
- The failure of monitoring and guiding structures such as the Steering Committee and Technical Committee designed for this Project indicate serious deficiencies in implementation that must be addressed by all partners in the Project directly and transparently.
- Closer monitoring by project executors of project progress in relation to established benchmarks and reporting structures is essential to ensure that projects 'remain on the tracks'. This requires careful reading of reports, checking of the provision and quality of deliverables, and a working familiarity with the project based on field visits.
- Over-dependence on a multiplicity of reports and reporting structures as observed by the Evaluation Team in the case of this Project does not lead to strong monitoring, as intended, but may result in the opposite as both the writers and readers of reports fall prone to 'report-fatigue'.

Recommendations for future Project development

- A 12-month no-cost extension to the Project is proposed (details are provided above).
- The no-cost extension must be designed to further the achievement of the original Project purpose and not attempt to develop a new purpose.
- A small scale but inclusive process to develop this no-cost extension must be undertaken.

IX. Lessons learned

Sustainable human development

- Where a biodiversity resource of international importance such as the Red Sea marine ecosystems is also an economic resource of local and national importance, the relationship between the two and threats to them must be clearly understood through a sound process of problem identification.
- Though it may be tempting to undertake activities which in themselves are of value, such as environmental awareness raising amongst local communities, the targeting of initiatives designed to support sustainable human development must clearly identify those groups within the communities that

constitute the primary threats to the resource and target initiatives on these groups.

Capacity building

- Where capacity building is specified as the primary means through which Project objectives are to be met, the structure of the Project, its budget and the selection of consultants and national counterpart institutions and individuals must clearly reflect this.

Sector development



- GEF and the Government of Yemen must be very clear about the relationship between the Red Sea's biological diversity and Yemen's industrial and artisanal fisheries. Interventions in the conservation sector may not have the expected effects on the fisheries sector, and *vice versa*.




General lessons

- Failure to develop projects that have a single, clearly defined purpose increases the likelihood of implementation problems. A single purpose to which the project is committed provides the guidance needed for a project while allowing flexibility to modify activities to achieve this purpose.
- Without the logic imposed by a single project purpose, managers cannot make sensible decisions about what activities to include and what to exclude from the project. A formal hierarchy of project results and objectives should always be established as part of the project development process.
- A formal process of strategic planning should be undertaken at an early stage in the implementation of a project to ensure that the most appropriate means for achieving the project's purpose and immediate objectives are identified and selected. The project document should not be viewed as a blue print for implementation, but as a guide.
- Though there are costs associated with substantial modifications to project design, these should not be avoided when necessary. Sound development of project objectives in the first place should, however, largely preclude the need for this.
- Project managers, under the supervision of steering committees, should carry out strategic planning to make decisions on the inclusion of new activities and dropping of old ones in relation to the achievement of project objectives. Project design and implementation should be sufficiently flexible to allow this.

Exhibit 1. Progress review and situation analysis SWOT

The following table presents the results of the SWOT analysis (strengths, weaknesses, opportunities, threats) carried out by the Evaluation Team, examining the implementation of the Project. In addition to the four results (Immediate Objectives) established in the Project documents, the Evaluation Team established a result for 'Project design and implementation' against which to assess the Project. Analysis of the achievement of the overall goal and the purpose of the Project was also carried out.

Result 1: Resource inventory and assessment carried out and monitoring system established	
INDICATORS <ul style="list-style-type: none"> • Improved understanding of the marine and coastal systems • Environmental and ecological surveys carried out • Resource maps and databases produced • Resource use maps and databases produced • Enhanced ability of Government agencies to avoid or reconcile coastal conflicts • Opportunities for sustainable marine resource use identified 	
<p style="text-align: center;">ACHIEVEMENTS or STRENGTHS</p> <div style="text-align: center; margin-top: 20px;">  </div>	<ul style="list-style-type: none"> • A detailed literature review was carried out and a report prepared • Visual, aerial, coral, mangrove and sea grass surveys were carried out • Habitat type classification, physical characteristics and indicator species occurrence and biological and environmental data (species occurrence, abundance and distribution) were collected at 10 sites in 1996, 37 sites in 1997, at least 10 sites in 1998, and at least 4 sites in 1999. • Additional data was collected on: <ul style="list-style-type: none"> oil pollution indicated by occurrence of tar balls sea temperature recorded using temperature loggers shore line pollution • Technical reports were prepared on: <ul style="list-style-type: none"> Harbour management International conventions signed by GOY Marine Protected Areas in the Red Sea Identification of fish nursery grounds Distribution of phytoplankton and zooplankton Oil spills in the Red Sea Distribution of micro-nutrients • The major impacts on marine environment were partially identified • A fully functional GIS was designed and established in Project office • A small reference collection was established at Project office (including fish, coral and crustacea) • Maps based on survey results and data drawn from other sources were produced • A computer database was established and data was entered • High quality short-term technical assistance was fielded by the international consultants (Hassall and Associates)
<p style="text-align: center;">SETBACKS or WEAKNESSES</p> <div style="text-align: center; margin-top: 20px;">  </div>	<ul style="list-style-type: none"> • The habitat classification used was not suitable or relevant to tropical, in-shore marine habitats • Underwater Visual Census (UVC) was the only survey method employed to undertake the fish species inventories • The specified environmental trend analysis was not completed • Identification of threats to the environment was based more on other researchers than on Project field survey work • Technical products specified in the contract of the international consultants were not completed • Technical reports were incorporated within progress reports making it difficult

	<p>to determine activities completed – stand-alone technical reports were not generally prepared</p> <ul style="list-style-type: none"> • The final Project report depends to heavily on the results of other researchers rather than presenting analysis of the results of the Project's surveys • An environmental monitoring system was not designed or put in place by the end of the Project • Insufficient funds were allocated for the purchase or hiring of a suitable survey vessel
<p>POTENTIAL or OPPORTUNITIES</p> 	<ul style="list-style-type: none"> • The capacity exists to prepare maps and reports using the GIS and database put in place by the Project • A well equipped facility with trained staff exists and can undertake the monitoring of Yemen's Red Sea coast marine environment • The installed capacity allows for participation in regional initiatives such as the PERSGA Strategic Action Plan for the Red Sea
<p>PROBLEMS or THREATS</p> 	<ul style="list-style-type: none"> • The skills and knowledge base of the trained staff of the facility will rapidly erode unless they are used • Trained staff may leave the facility unless they are supported and used • Equipment provided through the Project may be removed by other Yemeni institutions with similar interests and areas of responsibility • Without an operational monitoring programme, data collected during the Project will become rapidly out-dated • The security situation restricted access to certain areas, thus limiting the survey coverage • The late appointment of Counterparts restricted the degree to which they could take part in surveys, data collection and analysis
<p>IMPLICATIONS or RECOMMENDATIONS</p> 	<ul style="list-style-type: none"> • A practical and implementable monitoring plan, based on work carried out by the Project, should be developed (HU with support from GEF/UNDP) • A Yemen specific technical manual for coastal marine monitoring should be developed from materials produced by the Project, and translated into Arabic (HU with support of GEF/UNDP) • Up-grade existing computer equipment for the continued operation of the GIS (UNDP/GEF)

Result 2:

National capacity for marine environment management improved





INDICATORS

- A range of courses designed
- On-the-job training carried out
- Increased prevalence of marine conservation courses in universities, colleges and schools
- Counterparts and trainees better equipped to undertake marine environmental assessments and conflict resolution
- Marine issues incorporated into national decision-making process
- Improved understanding of the contribution of the marine environment to national economic development

ACHIEVEMENTS or STRENGTHS



- A training needs assessment was carried out and a report prepared
- Overseas "fellowship" training was provided in:
 - Coastal management – 3 Counterparts
 - GIS – 1 Counterpart
 - Marine Protected Areas – 1 Counterpart
- In-service training was provided in:
 - GIS – 2 Counterparts
 - Diving / Underwater photography – 6 Counterparts
 - Marine survey methods – 18 Counterparts
 - Environmental analysis – 18 Counterparts





	<p>Public awareness methods – 30 persons Equipment operation – 18 Counterparts Computer software – 18 Counterparts</p> <ul style="list-style-type: none"> • Counterparts participated in a PERSGA regional marine survey and monitoring workshop • EPC and the universities of Sana'a and Hodeidah were strengthened through their participation as contracted parties to produce technical reports
<p>SETBACKS or WEAKNESSES</p> 	<ul style="list-style-type: none"> • In-service training courses were not well designed or planned • No Technical / Evaluation Report on the training programme was prepared • No documentation of training courses, in the form of manuals, field method guides, course components, etc. were produced • No training in Environmental Impact Assessment was carried out • Only 2.5% of the total Project budget was directly allocated to the training programme
<p>POTENTIAL or OPPORTUNITIES</p> 	<ul style="list-style-type: none"> • A cadre of National Experts is available for further training • The National Experts trained under the Project are in a position to undertake survey work and marine monitoring if provided with the funding to do so • The existing facility and staff could provide the basis for a regional training venue • 7 out of 18 Counterparts are known to be still active in the field of marine environmental management in Yemen • 42 recent graduates are currently receiving training under the National Experts at the facility, demonstrating the utility of the training of trainers strategy • The facility has been declared a branch of the Marine Science and Resources Research Centre (MSRRC) of MFW by Cabinet Decree
<p>PROBLEMS or THREATS</p> 	<ul style="list-style-type: none"> • Late selection of Counterparts reduced the amount of time for practical training in the field under the supervision of the Technical Advisors • Attempts by the MFW to control access to training opportunities reduced the suitability of some candidates for training and excluded others • Failure of the MFW to release government counterpart funding for incentives and DSA reduced the involvement of Counterparts in training and survey activities • The failure of institutions to make use of the National Experts is leading to the loss of their skills • The MSRRC is unable to provide financial and administrative support to the new Branch in Al-Hodeidah
<p>IMPLICATIONS or RECOMMENDATIONS</p> 	<ul style="list-style-type: none"> • Manuals, training guides and relevant training materials should be produced and translated into Arabic where appropriate (UH with support of GEF/UNDP) • Training in EIA should be provided (GEF/UNDP) • Additional training in MPAs should be provided (GEF/UNDP) • Government of Yemen should consider transferring the existing facility from MFW to the Ministry of Education and Research (GOY) • Ties between the existing facility and the University of Hodeidah should be strengthened and formalised (GOY) • The existing facility, if strengthened, provides the potential for Yemen to offer to PERSGA a training centre in marine and coastal survey and monitoring to the region

Result 3:

Red Sea environment and resources sustainably used

INDICATORS

- List of proposed Marine Protected Areas
- Guidelines for the management of Marine Protected Areas
- Improved public awareness of the social and economic values of sustainable management of the Red Sea environment and natural resources
- Recommendations for possible sources of financial resources for sustained environmental management

<p>ACHIEVEMENTS or STRENGTHS</p> 	<ul style="list-style-type: none"> • A public awareness programme was designed and carried out • Materials for the public awareness programme were designed including: <ul style="list-style-type: none"> Television programmes Radio programmes Posters A newsletter Public participation in rehabilitation of a mangrove forest and beach cleaning • Possible sources of funding for post-Project recurrent costs were identified by a National Consultant • Additional funding for women's groups was requested by the MFW and provided through the Project by the UNDP Sustainable Environment Management Programme
<p>SETBACKS or WEAKNESSES</p> 	<ul style="list-style-type: none"> • The three-page technical report on the Public Awareness Programme prepared by EPC provided insufficient information to assess this component • A six month public awareness component is too short to have any long-lasting effects • The public awareness programme was too general in scope and did not appear to focus sufficiently on issues of direct importance to the protection of the marine coastal environment • Guidelines for the management of Marine Protected Areas were not developed as specified • A Technical / Evaluation report on MPA activities was not prepared • Communications with the Egypt GEF Project and PERSGA on MPAs were limited • There was no communication with the Fisheries IV Project or use of its data or field experience • The specified international expert to identify sources of funding for post-Project recurrent costs was not fielded by the international consultants • No Technical / Evaluation report on the financing of post-Project recurrent cost was prepared
<p>POTENTIAL or OPPORTUNITIES</p> 	<ul style="list-style-type: none"> • The opportunity exists to build on any public awareness created by the Project on the value of the marine environment • MPAs were identified by previous interventions (IUCN 1987) and provide the potential for the development of MPAs
<p>PROBLEMS or THREATS</p> 	<ul style="list-style-type: none"> • Failure to identify funding for post-Project recurrent costs threatens the sustainability of Project achievements

<p>IMPLICATIONS or RECOMMENDATIONS</p> <p>? ☹ ?</p>	<ul style="list-style-type: none"> • The Government of Yemen should recognise that it needs to investment in monitoring and research as well as effective regulation, if the fisheries sector is to remain viable and continue to generate significant revenues in the future • Negative environmental impacts on the marine environment will negatively effect the future of tourism development on the Yemen Red Sea coast • UNDP/GEF should recognise that wider and larger issues are negatively impacting the Red Sea environment and the sustainable use of its resources than those that this Project attempted to address
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Result 4:

Regional co-operation for the management of the Red Sea environment enhanced

<p>INDICATORS</p> <ul style="list-style-type: none"> • Improved regional co-operation in the planning and implementation of environmental activities in the Red Sea region 	
<p>ACHIEVEMENTS or STRENGTHS</p> <p>😊</p>	<ul style="list-style-type: none"> • A regional workshop on marine survey and monitoring design was held in Al-Hodeidah during December 1997 and attended by 21 regional participants • The CTA, NPD and 4 Counterparts attended a PERSGA workshop in Jeddah in January 1996 (subject not indicated in Progress Report) • The CTA and NPD attended a GEF workshop in Egypt during 1996 (subject not indicated in Progress Report) • The CTA and NPD contributed to the formulation of the PERSGA Strategic Action Plan • Funding through the Project for the PERSGA CTA (12 months) and Assistant Co-ordinator (36 months) helped build institutional capacity • The CTA and NPD collaborated with PERSGA CTA on regional issues and programmes • PERSGA CTA attended November 1996 TPR meeting
<p>SETBACKS or WEAKNESSES</p> <p>☹</p>	<ul style="list-style-type: none"> • No evidence was found that the regional EIA and MPA workshops to be undertaken by PERSGA took place
<p>POTENTIAL or OPPORTUNITIES</p> <p>😊</p>	<ul style="list-style-type: none"> • The Project enabled the ongoing involvement of National Specialists in the PERSGA Strategic Action Plan • The possibility of taking part in future training opportunities through PERSGA programmes • The opportunity to integrate national and regional marine environment Projects and programmes
<p>PROBLEMS or THREATS</p> <p>☹</p>	<ul style="list-style-type: none"> • Reports specified in the UNEP – UNDP/GEF inter-agency agreement on the regional component of the Project were not available to the Evaluation Team
<p>IMPLICATIONS or</p>	<ul style="list-style-type: none"> • UNEP and PERSGA should be requested to provide full reporting on the results of this Project component (UNOPS)

<p>RECOMMENDATIONS</p> <p>? ☹ ?</p>	
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Result x: Project design and implementation (not in original Project document)	
<p>INDICATORS</p> <ul style="list-style-type: none"> None specified 	
<p>ACHIEVEMENTS or STRENGTHS</p> <p>☺</p>	<ul style="list-style-type: none"> Periodic progress reports were prepared by the international consultants Qualified and experienced CTAs and TAs were fielded by the international consultants in a timely manner Appropriate equipment was purchased and delivered in a timely manner and the equipment was properly used and maintained The UNDP Country Office was actively involved in the implementation of the Project, helped to resolve problems of implementation and made periodic site visits An early independent technical evaluation of the Project was carried out in response to identified problems of the Project's implementation
<p>SETBACKS or WEAKNESSES</p> <p>☹</p>	<p>DESIGN ISSUES</p> <ul style="list-style-type: none"> The Project Document contains no verifiable indicators of implementation and results The Project failed to take account of existing sources of data and thus included several largely redundant activities The 1996 TPR and subsequent Project revision failed to address key elements of the Burbridge Report and the revised Project Document was not a significant improvement on the original The Project's logic was unclear and links between immediate objectives and Project goal are not evident The Project's scope was too wide and lacked a clear focus or statement of Project purpose The expected achievements of the Project were too ambitious Although institutional strengthening was a key element of the Project, only 2.5% of total budget was allocated for training The Project was designed to work only at the technical level and did not influence higher policy levels of government No provisions were made for the translation of key documents and technical outputs into Arabic No overview of the legal and institutional framework relevant to the coastal and marine environment was called for in the Project Document Inadequate activities were specified for the need identified in the Project Document to examine human uses of the marine coastal environment and consequential pressures The way that the Project's purpose and immediate objectives (results) were to influence the management of the fisheries sector is unclear The Project did not adequately consider stated national policy on areas influencing the marine and coastal environment (i.e. fisheries, tourism, oil, environment) The Project did not indicate the potential implications of Yemen's membership of international agreements and conventions (Section A2 of the Project Document) <p>IMPLEMENTATION ISSUES</p> <ul style="list-style-type: none"> Both the Project Steering Committee and Technical Committee failed to provide guidance and oversight to the Project and failed to resolve problems

	<p>of implementation</p> <ul style="list-style-type: none"> • Prolonged institutional disagreement between Project partners, principally between MFW and EPC hindered Project implementation • The technical and evaluation reporting schedule was not adhered to • Not all technical products specified in contracts were produced and some were of poor quality • Bi-annual work plans and budgets were not prepared by the international consultants • Some consultants were paid despite their failure to adequately meet the terms of their contracts • Evaluation reports were not always linked to evidence of Project deliverables • UNOPS and UNDP/GEF failed to adequately monitor Project implementation and address evident shortcomings • No field site visits were undertaken by UNOPS or UNDP/GEF staff after the Project revision in 1996 • The chain of communications between donors, national institutions, Project implementers and the international consultants (offices in New York / Sana'a / Hodeidah / Sidney) was unclear leading to problems of implementation
<p>POTENTIAL or OPPORTUNITIES</p> 	<ul style="list-style-type: none"> • The effective use of remaining Project funds • To ensure in the future, sound Project development based on participation of interested parties through a logical design process
<p>PROBLEMS or THREATS</p> 	<ul style="list-style-type: none"> • Failure to address issues of financial and institutional sustainability threaten Project achievements • Equipment was selected by the Project with regard to cost only, without consideration of after-sales service in Yemen • Too many 'implementation reports' were required leading to over-burdening of Project staff and ineffective monitoring (i.e. bi-annual progress reports, Project Implementation Reports, Annual Progress Reports, and others) • The CTA changed four times during the Project • Periods of uncertain security during the period of Project implementation
<p>IMPLICATIONS or RECOMMENDATIONS</p> 	<p>DESIGN ISSUES</p> <ul style="list-style-type: none"> • Existing sources of information should be fully considered during the design of the Project and inform the selection of Project activities to prevent replication (UNDP GEF) • Verifiable indicators of Project progress and impact should be established to guide management of the Project and allow meaningful evaluation of its achievements (UNDP GEF) • An inclusive Project design process should be undertaken, ideally employing a logical framework approach, or similar tool, to develop Projects in the future (UNDP GEF) • Care must be taken to avoid Project's being over-ambitious and loaded with unachievable objectives in an effort to make them appear attractive (UNDP GEF) • A national capacity building Project of this type should allocate a much larger proportion of its budget to training activities (UNDP GEF) <p>IMPLEMENTATION</p> <ul style="list-style-type: none"> • In the event of a non-function Steering Committee, Project implementation should be halted until this requirement for sound management is met (UNOPS/GOY) • Implementation reporting should follow a clearly established protocol (UNOPS) • Payments made to contractors should be strictly on the basis of adequate adherence to contractual obligations (UNOPS) • Regular site visits should be made to ensure sound management of Projects (UNOPS/UNDP/GEF)

	<ul style="list-style-type: none"> • Communication and reporting protocols between parties should be clearly laid out and adhered (UNOPS) • The need for the plethora of different progress and monitoring reports found in this Project should be reviewed as they seem to have led to poor over-sight of the Project, rather than the reverse as was intended (UNOPS/UNDP GEF)
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Supra Goal:

To protect marine ecosystems of the Red Sea coast including coral reefs and other critical habitats which are important to fisheries and to maintaining high biodiversity (drawn from the Project Document)

Overall goal:

National capacity to protect and manage the marine environment of the Yemen Red Sea coast strengthened (drawn from the Project Document)

Purpose:

Sustainable Yemeni institution for monitoring, analysis and reporting on the Red Sea marine environment to advise policy and decision makers established and operational (not in Project Document. Generated by the Evaluation Team)

INDICATORS

	<ul style="list-style-type: none"> •
<p>ACHIEVEMENTS or STRENGTHS</p>	<ul style="list-style-type: none"> • MSRRC Hodeidah Branch is in place and equipped and staffed to monitor the marine coastal environment • Capacity has been built in the University of Sana'a, University of Hodeidah and the Environment Protection Council to support protection of the marine coastal environment • Some capacity and materials were developed for increasing public awareness of the importance of the marine coastal environment • Financial and technical support to PERSGA contributed towards the establishment of the SAP • Formal linkages between Yemeni institutions and PERSGA and ROPME were supported • Professional and individual relations between Yemeni and regional scientists have been fostered
<p>SETBACKS or WEAKNESSES</p>	<ul style="list-style-type: none"> • During the course of the Project, there appears to have been a dramatic decline in the reef fish resource due to unregulated use • The national capacity to protect the marine environment built by the Project is not sustainable since inadequate post-Project financial provisions have been made • No evidence was found of significant public awareness of the importance of self-generated threats to the marine environment and its resources • The facility and its staff appears to play no role in the policy environment or the decision making process
<p>POTENTIAL or OPPORTUNITIES</p>	<ul style="list-style-type: none"> • Policy makers have the opportunity to make use of the existing facility in support of planning and policy formulation • The involvement with regional initiatives provides the opportunity to build on Project achievements • To identify a source of funds to allow the facility and its staff to monitor the marine and coastal environment
<p>PROBLEMS or</p>	<ul style="list-style-type: none"> • Marine resource use will continue in an unregulated way, resulting in further erosion of the resource base

THREATS	<ul style="list-style-type: none">• The facility will not be funded or used and the achievements of the Project will be lost• Yemen may fail to meet its regional obligations under the Red Sea and Gulf of Aden Convention and the PERSGA SAP
IMPLICATIONS or RECOMMENDATIONS	<ul style="list-style-type: none">• The Project purpose cannot be met unless a mechanism is established to allow information generated by the technical level at which the Project operated into higher policy and planning levels (GOY)• The sustainability of Project results will be made more likely if the process of Project generation and development is requested by governments rather than instigated by donor institutions (UNDP/GEF)• Unless the GOY addresses the primary factors causing non-sustainable use of the marine resource, protection of the marine coastal environment will do little to positively influence the future of the Yemen Red Sea fishery• Despite the considerable achievements of the Project and the commitment of both Yemeni and international staff, little progress was made towards contributing towards the goal of protecting Yemen's Red Sea coastal marine environment

Exhibit 2. Project objectives framework generated from Project document by the Evaluation Team

Overall goal

To protect marine ecosystems of the Red Sea coast including coral reefs and other critical habitats which are important to fisheries and to maintaining high biodiversity

Project purpose

No statement of Project purpose in Project Document

Results

1. Survey, assessment and monitoring of the marine environment of the Yemen Red Sea carried out

2. National capacity to manage the marine environment improved

3. Environmental public awareness promoted

4. Regional cooperation for sustainable management of the Red Sea environment enhanced

Outputs

1.1 Baseline data on marine ecosystem, key species and human uses collected
1.2 Monitoring system designed and established
1.3 Database developed and information analysed

2.1 Training in environmental data collection and interpretation
2.2 Training in EIA and monitoring
2.3 Training in public awareness

3.1 Potential MPA sites identified and management guidelines developed
3.2 Public awareness increased
3.3 Sources of potential recurrent costs identified

4.1 Co-ordination with Egyptian GEF and PERSGA SAP carried out

Exhibit 3. Project objectives framework re-drafted by the Evaluation Team to clarify Project logic

Supra goal

Marine ecosystems of the Red Sea including coral reefs and other critical habitats important to fisheries and to maintaining high biodiversity protected

Overall goal

National capacity to protect and manage the marine environment of the Yemen Red Sea coast strengthened

Project purpose

Sustainable Yemeni institution for monitoring, analysis and reporting on the Red Sea marine environment to advise policy and decision makers established and operational

Results

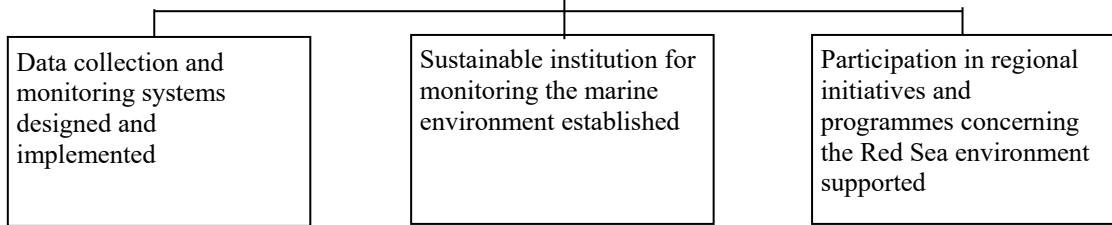


Exhibit 4. Project planning matrix derived from scheduled outputs and activities

<p><i>Supra goal (Long term objective)</i></p> <p>Marine ecosystems of the Red Sea including coral reefs and other critical habitats important to fisheries and to maintaining high biodiversity protected.</p> <p><i>Overall goal</i></p> <p>National capacity to protect and manage the marine environment of the Yemen Red Sea coast strengthened.</p>
<p><i>Project purpose (Not indicated in Project document)</i></p> <p>Sustainable Yemeni institution for monitoring, analysis and reporting on the Red Sea marine environment to advise policy and decision makers established and operational.</p>
<p><i>Results (Immediate objectives re-phrased to demonstrate Project logic)</i></p> <p>R1 Data collection and monitoring systems designed and implemented.</p> <p>R2 Sustainable institution for monitoring the marine environment established.</p> <p>R3 Participation in regional initiatives and programmes concerning the Red Sea environment supported.</p> <p>R4 Protection of Marine Ecosystems of the Red Sea Coast Project implemented.</p>
<p>Output 1.1 Baseline data on the Red Sea coastal and marine ecosystems, key species groups, human uses and consequential environmental pressures.</p> <p>Activity 1.1.1 Literature review, preliminary reconnaissance survey, sample analyses for contaminants</p> <p>Activity 1.1.2 Examination of satellite imagery, aerial photographs, and survey preparation</p> <p>Activity 1.1.3 Shore line survey, mapping, assessment and classification</p> <p>Activity 1.1.4 Establish GIS</p> <p>Activity 1.1.5 Assessment of offshore reefs and associated biota based on rapid and semi-quantitative survey methods</p> <p>Activity 1.1.6 Environmental trend analysis to determine geographical variations and changes over time</p> <p>Activity 1.1.7 Production of maps based on environmental assessments of shoreline and offshore reefs</p> <p>Output 1.2 Design and establish a marine environmental monitoring system for the Red Sea. This includes identification of the most important sources and types of marine and coastal impacts, and design of a cost effective monitoring protocol.</p> <p>Activity 1.2.1 Identification of major impacts on marine environment from data obtained</p> <p>Activity 1.2.2 Design and planning of environmental monitoring system. The main component is for marine impacts (municipal, industrial, etc.), while the second component concerns appraisal of oil pollution protection capability and harbour management</p> <p>Activity 1.2.3 Initiate and conduct environmental monitoring following the system designed and develop a monitoring protocol for subsequent implementation by local institutions</p> <p>Output 1.3 Development of databases and analysis of information.</p>

Activity 1.3.1 Data entry
Activity 1.3.2 Production of marine resource maps using the computer database and additional information

Output 2.1 Training in environmental information collection and interpretation.

Activity 2.1.1 Training of nationals in GIS (in Australia and then Hodeidah)
Activity 2.1.2 Identify training needs (institutional and individual) through assessment of national skills and requirements in marine environmental data collection and analysis
Activity 2.1.3 Design of in-service training programmes and short-term courses according to the needs identified
Activity 2.1.4 Provide the in-service training and short-term courses according to the design developed

Output 2.2 Training in EIA and monitoring.

Activity 2.2.1 Identify training needs (institutional and individual) through assessment of national skills and requirements in EIA and monitoring
Activity 2.2.2 Design of in-service training programmes and short courses
Activity 2.2.3 Provide the in-service training and short-term courses according to the design developed

Output 2.3 Training in public awareness enhancement.

Activity 2.3.1 Identify training needs (institutional and individual) through assessment of national skills and requirements in EIA and monitoring
Activity 2.3.2 Design of in-service training programmes and short courses
Activity 2.3.3 Provide the in-service training and short-term courses according to the design developed

Output 2.4 Training in MPAs.

Activity 2.4.1 Provide training to national specialists who are/will be directly involved in MPA management

Output 2.5 Identification of potential recurrent cost financing for post-Project activities.

Activity 2.5.1 Identify possible sources of funding from marine resource users such as the oil and shipping industry and the tourism industry
Activity 2.5.2 Explore and negotiate with potential funding sources identified

Output 2.6 Increased public (including private sector) awareness of marine environmental issues and sustainable use.

Activity 2.6.1 Identify public awareness/environmental education needs through consultation with the Government, private sector, and environmental societies
Activity 2.6.2 Design and plan public awareness/environmental education programmes (e.g. workshops, seminars, TV/radio/ shows programmes and materials)
Activity 2.6.3 Implementation and production of public awareness/environmental education programmes and materials

Output 3.1 Co-ordination with Egyptian GEF and other regional activities (e.g. the Red Sea Strategic Action Plan).

Activity 3.1.1 Implement 3 regional training workshops on:
 Survey and monitoring
 EIA
 Management of protected areas
Activity 3.1.2 Establish a functional secretariat for PERSGA
Activity 3.1.3 Prepare a three year work plan for PERSGA
Activity 3.1.4 Leverage financing for PERSGA from regional financing institutions for implementation of the Red Sea and Gulf of Aden Convention
Activity 3.1.5 Sensitise member governments on the importance of the implementation of the convention
Activity 3.1.6 Assess the Egypt and Yemen project models in terms of lessons learned, technical aspects, and cost effectiveness and the extent of applicability to other PERSGA member countries
Activity 3.1.7 Design suitable pilot projects in 2-3 identified PERSGA countries on the basis of the above assessment

Activity 3.1.8 Prepare regional Project proposals for submission to regional and international financing organisations

Output 3.2 Identification of sites for Marine Protected Area management, development of management guidelines.

Activity 3.2.1 Exchange and review marine resources data with other national, regional and global programmes such as the Fisheries IV Project, Egypt GEF and PERSGA

Activity 3.2.2 Based on inventory data and analysis, and the regional review, identify areas of national and regional importance to be proposed as MPAs

Activity 3.2.3 Develop general guidelines for management of the proposed MPAs

Output 4.1 Project establishment.

Activity 4.1.1 Identify, recruit and field international Project staff

Activity 4.1.2 Identify and recruit national personnel and Project counterparts

Activity 4.1.3 Purchase and import equipment and computer software

Activity 4.1.4 Identify and recruit international and national consultants

Output 4.2 Project implementation.

Activity 4.2.1 Hold bi-annual meetings of the Project Steering Committee

Activity 4.2.2 Hold regular meetings of the Project Technical Committee

Activity 4.2.3 Hold periodic Tripartite Review Meetings

Output 4.3 Project reporting and evaluation.

Activity 4.3.1 Production of technical evaluation report on collection of baseline data activities

Activity 4.3.2 Production of technical evaluation report on monitoring system design and establishment activities

Activity 4.3.3 Production of technical evaluation report on database development and data analysis activities

Activity 4.3.4 Production of evaluation and technical report on data collection and analysis training activities

Activity 4.3.5 Production of evaluation and technical report on EIA and monitoring training

Activity 4.3.6 Production of evaluation and technical report on public awareness training activities

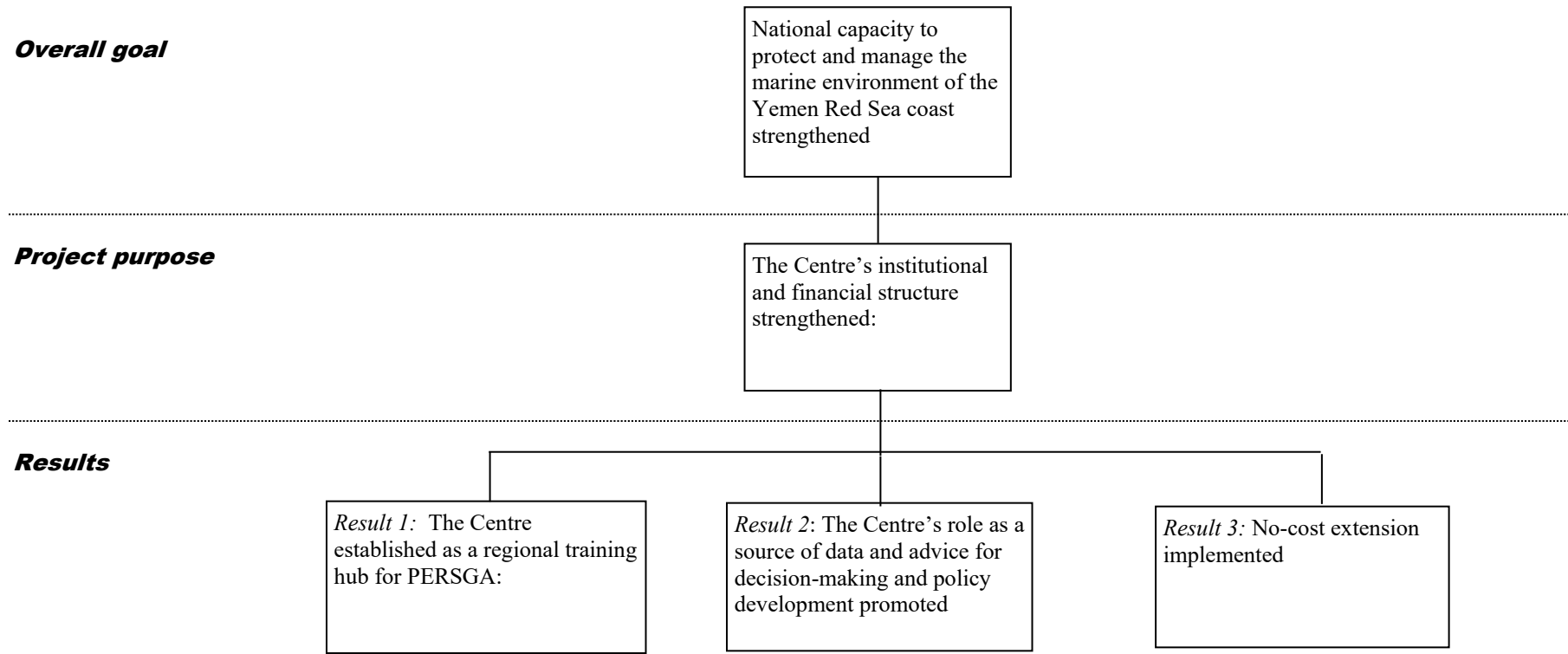
Activity 4.3.7 Production of evaluation and technical report on recurrent cost financing activities

Activity 4.3.8 Production of evaluation and technical report on public awareness activities

Activity 4.3.9 Production of technical evaluation report on MPA activities

Activity 4.3.10 Production of bi-annual progress reports by PERSGA for submission to UNEP and review by the World Bank and inter-agency meetings

Exhibit 5. Objectives framework for extension of Project



Annex 1. Terms of Reference – Independent Evaluation Mission

Terms of Reference – Terminal Evaluation Mission

YEM/97/G32

A. Protection of Marine Ecosystems for the Red Sea Coast

1. INTRODUCTION

The present Project started as YEM/92/G31. The original Project document was approved in 1993 but implementation was considerably delayed due to civil war and the actual commencement of the Project was only in December 1995 with the fielding of the CTA. The Project document underwent a substantive revision in May 1997 following the recommendation of the Tripartite Review Meeting in November 1996. In 1997, the funds were transferred from the old Project to YEM/97/G32.

Funded by the Global Environment Facility (GEF), this UNDP Project aims to protect marine ecosystems of the Yemen Red Sea Coast, including coral reefs and other critical habitats, which are important to fisheries and to maintaining high biodiversity. This Project should assist Yemen in achieving sustainable use of the marine resources along its Red Sea Coast. It should also serve as a framework for planning and managing uses of other adjacent waters. The Project is executed by the United Nations Office for Project Services (UNOPS). The Ministry of Fish Wealth (MFW) has been designated to be the national implementing agency of the Project. Project co-ordination will operate at two levels relying respectively on a Project Steering Committee and a Technical Committee. The Steering Committee chaired by the Ministry of Planning and Development (MDP), will be composed of the UNDP Resident Representative and representatives of the Environmental Protection Council (EPC), MDP, Maritime Training Centre (MTC), Public Corporation for Maritime Affairs (PCMA) and University of Sana'a. The Technical Committee will consist primarily of the Project team and technical experts. A Chief Technical Advisor, hired through an international consultancy firm, provides technical guidance to the Project and oversees its implementation on location, together with the National Project Director appointed by the MFW.

The Project's four immediate objectives are to

- Survey, assess and monitor the marine environment of the Yemen Red Sea
- Improve the national capacity to manage the marine environment
- Promote environmental public awareness
- Enhance regional co-operation for sustainable management of the Red Sea environment

An Independent Technical Evaluation mission was undertaken in October 1996 and a subsequent Management Audit was carried out in April 1997. Further, the Project was subject to two TPR meetings. UNDP/GEF contributes US\$2,800,000 to the Project, additional support in the amount of \$160,000 was granted under the UNDP Project YEM/97/100. The current Project budget represents the transfer of unspent funds from YEM/92/G31 to YEM/97/G32, the total amount being \$1,098,857. This evaluation should look particularly at the period starting from July 1997 when the revised Project document was fully signed. However, the entire history of the Project since its approval in 1993 should be considered and the evaluation should briefly retrace the events that led to the decision to re-formulate the Project.

2. OBJECTIVES AND ISSUES TO BE ADDRESSED

- a) Assess the results, which have been achieved by the Project. In particular it should:

- List the achievements of the Project and assess their effectiveness in solving the perceived problems and limitations.
 - Assess whether the Project has produced its outputs effectively and efficiently and identify the major factors, which have facilitated or impeded the progress of the Project in achieving its desired results.
 - Determine the effect of the Project on target groups:
 - The quality, usefulness and sustainability of the Project's achievements and outputs in terms of commitment to sustainable use of the Red Sea and improving the capacity to guard against depletion of its biodiversity and productivity for both national agencies and the coastal population (specifically the fishing community).
 - Examine the role the Project took in terms of supporting women and societies/NGOs, as well as collaborating with the oil industry
 - Assess whether GOY's inputs (of the various Government agencies) were sufficient and how they should be improved. The contribution of the UNDP Country Office should also be reviewed.
- b) Identify the lessons learned during implementation, identify the major impediments encountered and make specific recommendations to address these findings. In this regard it should also examine whether a possible extension of the Project is desirable.
- c) Review and assess the efficiency and adequacy of implementation arrangements and management of the Project
- In particular, the evaluation should review the quality and timeliness of inputs and activities by the main implementing sub-contractors of the Project: Hassall and Associates.
 - It should further assess the effectiveness of UNOPS execution, as well as the effectiveness of the Steering and Technical Committee.

3. PRODUCTS EXPECTED FROM THE EVALUATION

The evaluation mission will complete the Project Evaluation Information Sheet (PEIS) according to the existing format and produce a report according to the structure outlined in the UNDP Guideline for Evaluators. In addition, the final report should contain the following annexes:

- Terms of Reference for final evaluation
- Itinerary (actual)
- List of meetings attended
- List of persons interviewed
- List of documents reviewed
- Any other relevant material

4. METHODOLOGY AND IMPLEMENTATION ARRANGEMENTS

The mission will consist of two independent international consultants, as well as one *independent* national consultant. The team will be assisted by Project staff and by an interpreter, if necessary.

The team leader shall be responsible for the overall review of the Project. He/she will also examine the stakeholder involvement. The successful candidate should have a solid

background in natural resource management and/or environmental biology, with a minimum of 10 years of relevant experience. Further experience in evaluating, formulating and managing projects would be preferable. He/she should be fluent in English. Knowledge of Arabic would be an asset.

The international marine biologist consultant shall focus on the technical side of the evaluation (process and results). The consultant should have a strong background in marine biology. Relevant work experience with a minimum of 5 years is required. Fieldwork is a great asset. Experience in monitoring and evaluating projects preferable.

The team members shall familiarize themselves with the Project through a review of relevant documents prior to their travel. These documents include *inter alia*:

- Project document
- Project budget
- Independent Technical Evaluation Report
- Management Audit Report
- Minutes of Tripartite Review Meetings
- Programme Implementation Reports (produced for GEF)
- UNDP Handbook for Programme Managers: Results-Oriented Monitoring and Evaluation

The above-referenced documents shall be sent by courier or email to the evaluators in advance of the mission.

To the extent possible, the mission should allow for consultation with the Project staff and subcontractor, the UNDP Country Office representatives, GEF/RBAS/UNDP, stakeholders and beneficiaries. It should further visit the old Project site and, if necessary other field sites. To look at possible further activities for the protection of the marine ecosystem in the Red Sea the logical framework approach could be used.

5. MISSION TIMETABLE (PRELIMINARY)

The duration of the consultancy of the team leader shall be 22 working days, including travel time

Activity *# of days (not including travel)*

Homebase review of relevant documents	2
Travel to New York	1
Deskstudy in New York	2
Telephone interviews with Australian company and other Project staff	
Travel to Sana'a	1
Meetings and discussion in San'a (beginning and end of mission)	4/5
Hodeidah site inspection, meetings and discussion (to the extent possible)	3
In country travel	1/2
Travel out of Yemen	1
Final report writing	6

The duration of the consultancy for the International marine biologist shall be 19 working days, including travel time (the itinerary is the same as for the team leader, with the exception for the final report writing where he/she will have three working days.)

Suggested date of start for the evaluation mission beginning of March. 2001.

Annex 2. Actual itinerary

1 st April	Travel to New York
2 nd April	Briefing with UNOPS Associate Portfolio Manager Review of documents and Project files Telephone interview with Project Director, Hassall and Associates, Sydney, Australia
3 rd April	Meeting with UNDP / GEF Programme Manager Review of documents and Project files De-briefing session with UNOPS Portfolio Management team Travel to Sana'a, Yemen
4 th April	Arrived Sana'a in late evening
5 th April	Review of documents and Project files, Sana'a
6 th April	Review of documents and Project files, Sana'a Meeting with Chairman, Public Corporation for Maritime Affairs
7 th April	Briefing at UNDP Country Office Meeting at Ministry of Fish Wealth Meetings at Environment Protection Council
8 th April	Meeting at UNDP Country Office with Project team Review of documents and Project files Meeting at University of Sana'a with Dean of Faculty of Science and Senior Lecturer, Department of Geology Meeting with Environmental Protection Council GIS Department Travel to Hodeidah
9 th April	Meetings at Marine Science and Resources Research Centre (MSRRC) Hodeidah Branch (formerly the Project Office) with National Project Director (NPD) and National Experts (formerly Project Counterparts) Practical demonstration of GIS given by Project counterparts Examination of facilities, laboratory and field equipment purchased under the Project Meeting at University of Hodeidah with Dean of Marine Science and Environment and Professor of Environmental Pollution Preparation of De-briefing report
10 th April	Visit to the Hodeidah Fishing Port Meeting in Office of the National Corporation for Services and Fish Marketing (NCSFM) with representatives of fishermen's associations Meeting in MSRRC Office with NPD and National Experts Meeting with visiting FAO fish stock assessment specialist Travel to Sana'a Preparation of De-briefing report
11 th April	Meeting with UNDP Contact Officer for Project De-briefing at the Ministry of Fish Wealth

	De-briefing at the UNDP Office with Project Team Review of documents and Project files
12 th April	Review of documents and Project files Preparation of Project Evaluation Information Sheet
13 th April	Review of documents and Project files Departure from Yemen and travel to the UK

Annex 3. List of meetings attended

2 nd April 2001	<ul style="list-style-type: none"> • Briefing with Ulrike Meisner, UNOPS, New York. • Telephone interview with John Deas, Project Director, Hassall and Associates, Sydney, Australia.
3 rd April 2001	<ul style="list-style-type: none"> • Briefing with Marcel Alers, UNDP/GEF, New York.
6 th April 2001	<ul style="list-style-type: none"> • Capt. Saeed Al-Yafai, Chairman PCMA.
7 th April 2001	<ul style="list-style-type: none"> • Briefing with Ferial Sulaili, UNDP Programme Assistant and Najib Maktari, Team Leader/Environment. • Ministry of Fish Wealth, Dr. Abdul Bari Fakhri, Assistant Deputy Minister, Mr Awad Musalli, Director General of Planning, Statistics and Monitoring and Abdol Rashid Ghafoor, Director General for Control and Marine Inspection. • Environmental Protection Council, Dr Hussein Alawi Al-Guneid, Secretary General, HE Eng. Mohsen Ali Al-Hamdani, Chairman, Dr. Mohamed Mahdi Abubakr, National Programme Co-ordinator for Yemen, PERSGA/SAP, Mohamed ?, UNDP Project Management Unit, Najib Maktari, UNDP Team Leader. • Dr. Mohamed Mahdi Abubakr, National Programme Co-ordinator for Yemen, PERSGA/SAP.
8 th April 2001	<ul style="list-style-type: none"> • Meeting at UNDP Country Office with Project team: Ferial Sulaili, UNDP Programme Assistant and Najib Maktari, Team Leader/Environment • Meeting at University of Sana'a with Professor Salah Al-Khribash, Dean of Faculty of Science, and Dr Khaled Khanbari, Senior Lecturer, Department of Geology • Meeting at EPC GIS Department with Mohamed Abdul Rahim, Director of Data Department
9 th April 2001	<ul style="list-style-type: none"> • Meeting at Marine Sciences Resources Research Centre (MSRRC) Hodeidah Branch (formerly the Project Office) with Murtada A Alwan, National Project Director (NPD) and Adel Abdul Rab Mokbel, Aref Abdullah Hamoud, Ahmed M Zoom, and Maged Al-Sorimi, National Experts (formerly Project Counterparts), Ahmed Hassan Adbala, Diving Instructor, and Hytham Nasser Al Noor, Sami Sueliman Saeed, Murad Ali Amin Al-Salahi, and Monir Saif Hassan, Graduate trainees associated with the Centre • Meeting at University of Hodeidah with Dr Hassan M Heba, Dean of Marine Science and Environment and Professor Dr Hamid T Al-Saad, Professor of Environmental Pollution
10 th April 2001	<ul style="list-style-type: none"> • Meeting in Office of the National Corporation for Services and Fish Marketing (NCSFM) with Ali Hanash Nehari, Qassem Amer Khubais, Ali Hassan Subaila, representatives of fishermen's associations • Meeting in MSRRC Office with NPD and National Experts (as

	above) <ul style="list-style-type: none">• Meeting with Salah M Kedidi, Consultant Marine Scientist with FAO (visiting fish stock assessment specialist)
11 th April 2001	<ul style="list-style-type: none">• Debriefing at Ministry of Fish Wealth with Dr. Abdul Bari Fakhri, Assistant Deputy Minister, Mr Awad Musalli, Director General of Planning, Statistics and Monitoring and Abdol Rashid Ghafoor, Director General for Control and Marine Inspection• Debriefing at UNDP Country Office with Ferial Sulaili, UNDP Programme Assistant and Najib Maktari, Team Leader/Environment

Annex 4. List of persons interviewed or met

Captain Saeed Al Yafai	Chairman, Public Corporation for Maritime Affairs
Dr Abdul-Bari Fakhri	Assistant Deputy Minister, Ministry of Fish Wealth
Dr Andrew Mentz	Portfolio Manager, UNOPS
Dr Hassan M Heba	Dean of Marine Science and Environment, University of Hodeidah
Dr Hussein Alawi Al-Guneid	Secretary General, Environmental Protection Council
Dr Khaled Khanbari	Senior Lecturer, Department of Geology, University of Sana'a
Mr Marcel Alers	Regional GEF Co-ordinator, UNDP/RBAS
Dr Mohamed Abdul Rahim	Director of Data Department, Environment Protection Council
Dr Mohammed Mahdi Abubakr	National Programme Co-ordinator for Yemen, PERSGA SAP / Environment Protection Council
Dr Salah M Kedidi	Marine Scientist, FAO Consultant
Eng. Najib S Maktari	Sustainable Development Advisor, UNDP
HE Eng. Mohsen Ali Al-Hamdani	Environmental Protection Council, Chairman
Mr Abdol Rashid Ghafoor	Director General for Control and Marine Inspection, MFW
Mr Adel Abdul Rab Mokbel	National Specialist, Mangrove Habitats, former Project Counterpart
Mr Ahmed Hassan Abdala	Diving Instructor, Former Project Counterpart
Mr Ahmed M Zoom	National Specialist, Sea birds, former Project Counterpart
Mr Ali Hanash Nehari	General Secretary, Islands Fishermen's Association
Mr Ali Hassan Subaila	Ex-Chairman, Al-Nakhila Fishermen's Association
Mr Aref Abdullah Hamoud	National Specialist, Coral Reefs, former Project Counterpart
Mr Awad Musalli	Director General, Department of Planning, Statistics and Monitoring, MFW
Mr Hytham Nasser Al Noor	Graduate trainee with MSRRC Hodeidah Branch
Mr Majid Al-Sorimi	National Specialist, GIS and Fisheries, former Project Counterpart
Mr Mohammed Al Sunidar	Project Manager, UNDP PMU - Environment, Environmental Protection Council
Mr Monir Saif Hassan	Graduate trainee with MSRRC Hodeidah Branch

Mr Murad Ali Amin Alsalahi	Graduate trainee with MSRRC Hodeidah Branch
Professor Salah Al-Khribash	Dean, Faculty of Science, University of Sana'a
Mr Qassem Amer Khubais	Chairman, Al-Nakhila Fishermen's Association
Mr Sami Sueliman Saeed	Graduate trainee with MSRRC Hodeidah Branch
Ms Feriel Sulaili	UNDP Programme Assistant
Ms Ulrike Meisner	Associate Portfolio Manager, UNOPS
Prof Dr Hamid T Al-Saad	Professor of Environmental Pollution, University of Hodeidah

Annex 5. List of documents reviewed

Technical reports produced as a direct result of Project YEM/97/G32

- Abdullah, F. (1995). An overview of the formation of the development of the coastal women administration. Ministry of Fish Wealth.
- Al Sorimi, A. and Adbulla, F.A. (1999). Report of a survey conducted in the Luhayaa area. Unpublished. 6pp.
- Al Sorimi, M. (1999). Survey report for the Gulf of Aden. Produced as a technical report of the Marine Ecosystem Protection Centre, Hodeidah, established under Project YEM/97/G32. 8pp.
- Al Sorimi, M. (2000). Yemen marine biodiversity. 20pp.
- Al-Sorimy, M. 1999. Habitats of Yemen Republic (Red Sea). 16pp.
- Anon (1999). Survey report of Khawka, April 1999. 13pp.
- Banoubi, A.A. (1996a). Review of international environmental conventions ratified by the Republic of Yemen. 16pp.
- Banoubi, A.A.S. (1996b). Identification of National Skill and Training Needs in the Republic of Yemen.
- Banoubi, A.A.S. (1997a). Final technical report: Protected areas management in the Red Sea region of the Republic of Yemen. 100pp.
- Banoubi, A.A.S. (1997b). Fund raising management activity: a report prepared by the National Consultant to Project YEM/97/G32. 4pp.
- Brodie, J and Turak, E. (1996). Preliminary progress report.
- Det Norske Veritas (1996). Harbour management study: Yemen marine ecosystems in the Red Sea and Gulf of Aden. Report no. 96-3663.
- DouAbel, A., Roupahel, T., Marchant, S., Marchant, R. (1999). Protection of marine ecosystems of the Red Sea coast of Yemen. 141pp.
- Environmental Protection Council (1999). Final Technical Report. Produced in accordance with the Memorandum of Agreement between EPC and UNOPS. 3pp.
- Hanna, R. (1996). Fish kill accidents advisory note.
- Hanna, R. (1996). Identification of oil slicks. 10pp.
- Heba, H.M.A. (1999). Identification of fish nursery grounds in the Hodeidah area. Faculty of Marine Science and Environment, University of Hodeidah. 53pp.
- Heba, H.M.A. (undated). Trace metals in fish muscles, shrimp and sediment from Red Sea coast of Yemen. Draft manuscript provided by the Author. Faculty of Marine Science and Environment, University of Hodeidah. 17pp.
- Ismail, Z. (1998). Progress report on the implementation of awareness programme activities, November 1997 – February 1998.
- Ministry of Fish Wealth (1999). Final report: Distribution of phytoplankton and zooplankton in the southern part of the Red Sea during January – December, 1998. Marine Science and Resources Research Centre (MSRRC), Aden.
- Public Corporation for Maritime Affairs (1999). Oil spills in the Red Sea, Yemen. 37pp. PCMA, Sana'a.

University of Sana'a (1999). Distribution of micro-nutrient elements in the Red Sea coast of Yemen. Faculty of Science, Department of Oceanography, University of Sana'a.

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Hassall and Associates Pty. Ltd. and Australian Marine Sciences and Technology Ltd. (1996). YEM/92/G31: Protection of Marine Ecosystems of the Red Sea coast - Inception Report. Produced in association with the Yemen Commercial Investment Co. Ltd. 26th February 1996.

Hassall and Associates Pty. Ltd. and Australian Marine Sciences and Technology Ltd. (1996). YEM/92/G31: Protection of Marine Ecosystems of the Red Sea coast – First Progress Report. Produced in association with the Yemen Commercial Investment Co. Ltd. 31st July 1996.

Hassall and Associates Pty. Ltd. and Australian Marine Sciences and Technology Ltd. (1997). YEM/92/G31: Protection of Marine Ecosystems of the Red Sea coast – Second Progress Report. Produced in association with the Yemen Commercial Investment Co. Ltd. 31st January 1997.

Hassall and Associates Pty. Ltd. and Australian Marine Sciences and Technology Ltd. (1997). YEM/92/G31: Protection of Marine Ecosystems of the Red Sea coast – Third Progress Report. Produced in association with the Yemen Commercial Investment Co. Ltd. 31st August 1997.

Hassall and Associates Pty. Ltd. and Australian Marine Sciences and Technology Ltd. (1998). YEM/92/G31: Protection of Marine Ecosystems of the Red Sea coast – Fourth Progress Report. Produced in association with the Yemen Commercial Investment Co. Ltd. June 1998.

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Project Performance Evaluation Report (PPER). November 1996. Prepared by Rifaat Hanna, CTA.

UNDP/GEF Project Implementation Review (PIR) 1998.

UNDP/GEF Project Implementation Review (PIR) 1999.

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Delivery report, July 1997. Prepared by the CTA, Ali DouAbul and sent to the Programme Officer, Abdul Majeed Haddad, UNDP/Sana'a.

Brodie, J. Report on incident at Az Zubayr, 16 May 1997. Prepared by TA expert.

Medio, D. Ongoing Project brief. An undated three-page brief prepared by the CTA.

Brodie, J. Preliminary progress report - 1997 surveys. Prepared by the TA specialist, 28 June 1997.

Burbridge, P.R. (1996). Technical evaluation of the GEF-funded Project on Protection of marine ecosystems of the Red Sea coast (UNOPS YEM/92/G31). University of Newcastle, Department of Marine Science and Coastal Management, UK.

Preliminary Progress Report (Undated).

First Survey Report – Draft. 12 September, 1996. pp 13.

Minutes and reports from Tripartite Reviews

Tripartite Review: YEM/92/G31 - Protection of marine ecosystems of the Red Sea coast. Minutes of the first TPR meeting held on 26th November 1996. 7pp.

Tripartite Review Report: YEM/92/G31 - Protection of marine ecosystems of the Red Sea coast. Covering the period November 1996 – March 1998. Reviews the findings/conclusions of the second TPR meeting held on 29th March 1998. Prepared by the UNDP Country Office.

Tripartite Review: YEM/92/G31 - Protection of marine ecosystems of the Red Sea coast. Minutes of the third TPR meeting held on 6th December 1999. 4pp.

Aide Memoire: YEM/92/G31 - Protection of marine ecosystems of the Red Sea coast. Agreement following the Tripartite Review held on 26th November 1996. 6pp.

Key documents

Project Document: Yemen - Protection of marine ecosystems of the Red Sea coast. Project no. YEM/92/G31/A/1G/99. Signed 22nd June 1993.

Revised Project Document: Yemen - Protection of marine ecosystems of the Red Sea coast. Project no. YEM/92/G31/G/1G/31. Signed 6th July 1997.

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Service Contract between UNDP/OPS and Hassall and Associates of Australia to perform consulting services in respect of the Project. Contract no. C-95499. Signed 28 June 1995.

Amendment no. 3 to the Service Contract between UNDP/OPS and Hassall and Associates of Australia (Contract no. C-95499). Amendment signed 2 September 1998.

Audit report 1998, covering the period 1st January – 31st December 1998. Dated 3rd June 1999. Prepared by COCA, Sana'a.

Audit report 1997. Covering the period 1st January – 31st December 1997 (undated). Prepared by COCA, Sana'a.

Management Audit of the GEF Project: Yemen - Protection of marine ecosystems of the Red Sea coast (YEM/92/G31). Report no. PS/97/51, dated 4th August 1997. Prepared by UNDP Division of Audit and Management Review.

Memorandum of Understanding (unsigned) between H.E. Abdul-Rahman Abdul-Kader Ba-Fahdl, Minister for Fish Wealth and Mr. Awni Al Ani, UNDP Resident Representative, concerning agreement on modifications of the originally foreseen implementation in Project implementation modalities, as discussed in a meeting held on 1st April 1995.

Hanna, R. (1995). Interim status report, covering the period 11th-31st December 1995. Internal report prepared by the CTA.

Annexes or inclusions in Progress reports

Project work plan; covering period 1995 – 1998 including Gant Chart and detailed staffing schedule. Presented as Section 9 and Annex 1 of Inception Report.

Draft Terms of Reference for University of Sana'a. To undertake a literature review, reconnaissance survey / identification of hot spots, and reporting. Presented as Annex 2 of Inception Report.

Sana'a University. (1996) Progress report. Presented as Annex 4 of First Progress Report

Report on Vessel for Off-Shore Survey (1996). Presented as Annex 5 of First Progress Report

Banoubi, A.A.S. (1996). Short report on training activities within the Project (Training Needs Assessment). Presented as Annex 6 of the First Progress Report.

DouAbul, A.A.Z. and Haddad, A.M.G. (eds) (1996). Literature Review. Presented as Annex 5 of Second Progress Report

Boyle, G. (1997). Counterpart training report: SCUBA diving. 2pp. Presented as Annex 3 of Third Progress Report

Contracts with Cooperating Institutions. MFW, PCMA, Sana'a University, University of Hodeidah (Undated).

In addition to the above documents, numerous letter, fax and e-mail communications were examined in finance and administration files at the offices of UNDP/GEF/OPS in New York, UNDP/Sana'a and the Project office in Hodeidah.