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REPORT No 20559

IMPLEMENTATION COMPLETION REPORT
(28609; 28652)

ON A

GRANT FROM THE GLOBAL ENVIRONMENT TRUST FUND

IN THE AMOUNT OF SDR 4.2 MILLION EQUIVALENT

TO THE REPUBLIC OF TUNISIA

FOR AN OIL POLLUTION MANAGEMENT PROJECT

JUNE 12, 2000

**INFRASTRUCTURE DEVELOPMENT GROUP
MIDDLE EAST AND NORTH AFRICA REGION**

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CURRENCY EQUIVALENTS

(Exchange Rate Effective April 30, 2000)

Currency Unit =
1.39 TND = US\$ 1
US\$ 1.312 = 1 SDR

FISCAL YEAR

January 1 December 31

ABBREVIATIONS AND ACRONYMS

ANPE	Agence Nationale pour la Protection de l'Environnement
APL	Agence Nationale pour la Protection du Littoral
CRCP	Comité Régional Pour Coordination du Projet
DP	Direction des Ports (Algeria)
GEF	Global Environment Facility
GET	Global Environment Trust Fund
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
MARPOL	International Convention for the Prevention of Pollution from Ships
MEAT	Ministère de l'Environnement et de l'Aménagement du Territoire
MEDPOL	Mediterranean Pollution Center
Mg/l	Milligram per liter
Mg/sq.m	Milligram per square meter
NCP	National Contingency Plan
ODEP	Office d'Exploitation des Ports (Morocco)
ONAS	Office National de l'Assainissement
OMMP	Office de la marine Marchande et des Ports Nationaux Tunisiens
PPA	Project Preparation Advance
RCP	Regional Contingency Plan
RVP	Regional Vice President
SDR	Special Drawing Rights
TOR	Terms of Reference
TND	Tunisian Dinars
VTS	Vessel Traffic System

Vice President:	Jean Louis Sarbib
Country Manager/Director:	Christian Delvoie
Sector Manager/Director:	Jean-Claude Villiard
Task Team Leader/Task Manager:	Fathi Ben-Slimane

**REPUBLIC OF TUNISIA
OIL POLLUTION MANAGEMENT PROJECT**

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<i>Project ID:</i> P005588	<i>Project Name:</i> MEDITERRANEAN POLLUTION CONTRO
<i>Team Leader:</i> Fathi Ben-Slimane	<i>TL Unit:</i> MNSID
<i>ICR Type:</i> Core ICR	<i>Report Date:</i> April 28, 2000

1. Project Data

Name: MEDITERRANEAN POLLUTION CONTRO *L/C/TF Number:* 28609; 28652
Country/Department: TUNISIA *Region:* Middle East and North Africa Region
Sector/subsector: VP - Pollution Control / Waste Management

KEY DATES

	<i>Original</i>	<i>Revised/Actual</i>
<i>PCD:</i> 04/15/93	<i>Effective:</i> 05/20/94	05/20/94
<i>Appraisal:</i> 08/10/93	<i>MTR:</i> 10/30/96	10/30/96
<i>Approval:</i> 04/06/94	<i>Closing:</i> 12/31/99	04/30/2000

Borrower/Implementing Agency: GOVERNMENT OF TUNISIA /OMMP

Other Partners:

STAFF	Current	At Appraisal
<i>Vice President:</i>	Jean-Louis Sarbib	Caio Kock Weser
<i>Country Manager:</i>	Christian Delvoie	Daniel Richie
<i>Sector Manager:</i>	Jean-Claude Villiard	Daniel Richie
<i>Team Leader at ICR:</i>	Fathi Ben-Slimane	Fathi Ben-Slimane
<i>ICR Primary Author:</i>	Fathi Ben-Slimane	

2. Principal Performance Ratings

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

Outcome: S

Sustainability: L

Institutional Development Impact: SU

Bank Performance: S

Borrower Performance: S

QAG (if available)

ICR

Quality at Entry:

Project at Risk at Any Time: No

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

3.1 Original Objective:

The primary objectives of the project were to reduce the quantity of petroleum hydrocarbons entering the international waters of the Mediterranean and to comply with MARPOL 73/78 Convention requirements. The project also achieved, among other objectives, the development of a comprehensive and integrated system for the management of oil pollution caused by marine sources, thus ensuring commonality of approaches and methodologies, promoting exchange of information and coordination, enhancing monitoring capability among the countries in the region for preventing and combating oil pollution, and improving the quality of the marine environment.

These objectives were successfully attained and deemed to be appropriate and in line with the government's international commitment to monitor compliance with international conventions related to marine pollution. They were clear and realistic with regard to national policies and regional agreements (*Union du Maghreb Arabe -UMA - agreement*). A major institutional outcome of the project has been the development of a framework for a comprehensive national and regional management of oil pollution through enhancement of the capacity to assess and monitor oil pollution, enactment of national oil spill contingency planning and response capabilities (NCP), drafting of a regional contingency plan (RCP), and purchase of standardized equipment to combat pollution. Furthermore, the project also initiated a cost recovery system at the port level through an adequate tariff structure, and at the national level through creation of an environmental fund, enactment of a law regarding fees and penalties, and enactment of polluter-pay rules.

The project was designed to enhance the country's capacity to implement its environmental action plan, which aims in particular to fight oil pollution, protect the marine environment and beaches, and encourage the participation of the environmental agencies and others entities in efforts to protect the environment. In this regard, the preparation of the project called for great attention and commitment from the government to identify the most appropriate and most representative institutions, such as the "*Office de la Marine Marchande et des Ports* " OMMP to implement the project and represent the country in the regional common effort.

No specific technical risk was identified during preparation, except the risk related to the government's willingness to maintain its cooperation with the other recipients, Algeria and Morocco, to enforce the preparation and adoption of the NCPs and the cooperative agreement, to enforce regulations dealing with marine pollution problems, and to implement an adequate cost recovery system. This risk was mitigated by: (a) current commitment of the three governments to follow up on the preparation study and implement study recommendations related to the above aspects, and the project components as defined in para 3.3; (b) the national and regional benefits resulting from project implementation, especially the investments carried out for coastal and ports protection; (c) enactment of a NCP, preparation of an advanced draft of a RCP, and agreement signed by the three port authorities on a joint cooperation for combating accidental oil spills; and (d) comprehensive project preparation and implementation carried out with the cooperation of local authorities through a regional committee for project implementation (CRCP). Furthermore, close Bank supervision has ensured maximum success of project implementation during the various stages of the project, and contributed to achieving its objectives.

3.2 Revised Objective:

N.A.

3.3 Original Components:

The project consists of two main components: (a) national elements; and (b) regional elements.

(a) National Elements. The national elements include the following:

1- Physical elements:

(i) construction or rehabilitation of sheds to store equipment for combating oil spills (floating booms, dispersant, skimmer heads, accessories, etc);

(ii) provision of oil spill response and cleanup equipment and dispersant, and oil spill response training;

(iii) improving of the operational efficiency of the deballasting station located in the port of Bizerte to receive and handle ballast waters and bilge waters, and provision of additional related transport equipment to transport waste oils and related products;

2- Institutional element:

(i) Oil spill National Contingency Plan;

(ii) Monitoring and compliance: The regulatory mechanism included two elements: (a) monitoring capability; and (b) an environmental management framework.

(b) Regional Elements. Preparation and implementation of a program designed to provide a multilateral framework within which the activities referred to in (a) are developed within a common approach:

(i) Regional oil spill environmental sensitivity and contingency plans; and

(ii) Training.

The project was the first experience in its kind in the region. In that sense it was innovative in its design and conception. The physical as well as the institutional components of the project were designed in close consultation with the executing agency and local and regional authorities. All components and activities were carried out satisfactorily, and were the key factors in strengthening the country's capacity to handle oil pollution. The project as such increased the awareness of the environmental authority to the threat of oil pollution and is considered as the most important vehicle for abiding by international regulations and enforcing their implementation.

Physical components have been successfully implemented. They included the construction of sheds, and purchase of oil spill response and cleanup equipment and dispersant. Training in operation of the equipment was included in the purchase contract. Regarding the modernization of treatment facilities and recycling of oily residues, STIR and SOTULUB, two private companies invested in and carried out modernization of their facilities for treating ballast waters in the case of STIR and collecting and recycling lubricant in the case of SOTULUB.

The main national element was the development and implementation of an oil spill NCP. The plan incorporates the concept of risk assessment to identify and prioritize key actions to be taken at both the port and national levels. The monitoring element, including auditing of sea waters through sample analysis of oil content, was carried out through selected national laboratories. A baseline of data and measuring locations needed to assess the impact of the project on improving the quality of sea water was established in designated areas agreed upon with the Bank. Reports on the findings of the analysis have been produced every six months. The environmental management element has strengthened the technical elements of port and national regulations, by developing mechanisms for cost recovery and financial sustainability.

The regional element included two major elements: the RCP and training. The RCP is intended to serve as a template to link the national plans of the three countries. Elements of the plans include appropriate responses to protect sensitive coastal resources, and potential for transport of spilled product to other local or foreign ports. These plans include linkage of equipment and manpower to regional needs and identification of external sources of assistance. Part of this task has consisted of ensuring that equipment purchased under the project is the same in the three countries, and training courses and simulation exercises have been undertaken jointly. These have further promoted the concept of a regional approach to spill response. A joint cooperative agreement was signed among the ports of Algiers, Arzew, Bejaia, and Skikda (Algeria), "Office d'Exploitation des Ports"(ODEP), Morocco, and "Office de la Marine Marchande et des Ports" (OMMP), Tunisia, defining the conditions and procedures for using all available equipment and personnel to combat accidental oil spills. The cooperative

agreement identifies responsibilities in case of accidental oil spills regarding exchange of information, mobilizing of equipment, actions by each party, etc.

Training needs have been provided for those who are responsible for combating oil spills, and for control of navigation traffic, deballasting stations, and oil terminals. Three main groups participated in the program: Level I includes management personnel of port enterprises, supervising officers managing the civil protection function, and those responsible for coordinating intervention in case of an accidental oil spill. Level II includes port officers, and civil protection staff responsible for organizing and managing the protection of coastal sites. Level III includes ground staff of the port enterprises and assistant civil protection officers likely to be managing the cleanup of sites or putting the equipment into operation. Training was carried out on a regional basis so as to familiarize the personnel with working together using the same equipment and procedures. Training that was carried out locally made the fullest use of existing vocational and technical institutions and facilities.

3.4 Revised Components:

There was no revision in project components.

3.5 Quality at Entry:

No review was done.

4. Achievement of Objective and Outputs

4.1 Outcome/achievement of objective:

The project achieved all its objectives regarding regional cooperation, standardization of approach, and strengthening of national and regional capacity to handle oil pollution and comply with the MARPOL requirements regarding the norms for discharging oil into the Mediterranean. The most important outcomes are: (a) prevention as well as preparedness to combat oil spills systems are in place, (b) enactment of a NCP, (c) preparation of an advanced draft RCP, and (iv) joint training carried out for regional staff from the three participating countries on contingency plan and oil spills cleaning and prevention. Bi-annual reports on sea water analysis (oil content in the water) have been satisfactory and regularly provided, and effluent from deballasting stations do not exceed 15 ppm. Cooperation is considered highly satisfactory. CRCP members meet regularly and have been able to handle regional procurement and succeeded in ensuring continuous coordination among involved administrations in their respective countries.

The project has contributed to efficient cooperation among concerned administrations and within the region to prevent and control oil pollution. The development of a sub-regional working group and organization of joint training contributed to enhancing marine pollution management through development of a common approach and mechanisms. The project has improved the countries' capabilities to deal with accidental oil spills and provide equipment and facilities to collect and treat oily ballast and bilge waters, thus reducing hydrocarbon contamination in the Mediterranean. The project has created the foundation for permanent cooperation in the region in terms of monitoring and compliance auditing, state of marine pollution reporting, and a common approach for spill response. It has potentially met the GEF objective of protecting international waters, and has set the framework for re-refining oily materials in concert with local and national waste management programs. Its well-identified components helped in strengthening and enhancing port and national regulations, regulatory mechanisms, and the linkage between environmental monitoring and management.

4.2 Outputs by components:

All originally identified components have been completed satisfactorily. Because of savings, additional means identified in the feasibility study were able to be procured. That includes construction and equipment of a VTS in La Goulette, floating booms, transport equipment, recovery equipment, and spare parts. The project closed on April 30, 2000, four additional months after the original date, to allow disbursement of the balance of the grant against equipment shipped after December 31, 1999. Shipment delays were due to exceptional circumstances (bad weather in Europe). The regional components were completed to the satisfaction of all concerned parties, including training and procurement of standardized

equipment and dispersant for combating oil spills. Three exercises simulating oil spills to test equipment purchased and NCP were organized during project implementation. The detailed list of equipment procured and total personnel trained are in Annex 7.

4.3 Net Present Value/Economic rate of return:

The project provided significant, although not quantified, economic benefits through provision of environmental benefits. While formal economic and financial returns analysis (environmental economic benefit and financial returns were not required for projects of the pilot phase) have not been attempted for the SAR and the ICR. It is widely recognized that pollution impacts all aspects of the marine economy, from fishery to recreation. Purchase of equipment, maintenance, and modernization of reception facilities, as well as maintenance of and improvements to the existing coastal marine environment, are necessary for the continued success of the coastal fishery and tourism, a major industry in Tunisia and neighboring countries. Further, methods and protocols providing improvements to marine environment quality, as achieved by the project, will serve as a model for establishing similar facilities in other Mediterranean ports.

4.4 Financial rate of return:

No formal FRR has been attempted in the SAR and the ICR. The project was based on the need to address potential negative environmental impacts of discharged ballast and bilge waters, as well as accidental oil spills, in the southwestern part of the Mediterranean, and the lack of resources to tackle this issue of global importance. Given the competing demands of the various sectors on its national budget, Tunisia was reluctant to, on its own, allocate funds for combating the problem of marine pollution. The availability of grant funds reinforced the government's commitment to participate in reducing the risk of marine pollution. Pollution funds have been set up, and decrees and laws regarding fees and fines to be paid by polluters have been revised and enforced. A model for recovering the operating and investment cost of deballasting stations has been developed for port authorities. Proposals for port tariff adjustments to progressively cover the cost of environmental protection, are being made at the beginning of each fiscal year.

4.5 Institutional development impact:

In 1995 and 1996, as consequence of the project, the GOT undertook several actions, including creation of *Agence de protection et de l'aménagement du littoral* (APAL), an agency that deals with all marine and littoral aspects of pollution; and creation of the *Centre international des technologies de l'environnement* (CITE), which specializes in providing training as well as promoting technology to protect the environment. ANPE, OMMP, and APAL have established, within their structures, units to deal more specifically with oil and marine sources pollution. These units have been appropriately staffed and are working in close cooperation to prevent oil pollution and minimize its impact.

5. Major Factors Affecting Implementation and Outcome

5.1 Factors outside the control of government or implementing agency:

Only one factor that partially affected implementation of the joint training program is worth mentioning. It is related to the security issue in Algeria, which delayed the training scheduled to take place in Algiers by almost a year. A joint effort undertaken by the Bank and Algerian authorities to overcome the security issue reassured the consultant that it would be safe to carry out the delayed sessions. The training was completed in June and September 1999.

5.2 Factors generally subject to government control:

The project included several elements to be implemented directly through OMMP, the implementing agency (national components), and through OMMP as member of the CRCP (regional components, including training, studies, and standardized equipment). This made the project complex and difficult to implement. Several factors affected the project.

(a) Factors with positive influencing included:

(i) GOT already had an established regulatory regime and institutional setup. The GOT is implementing a strategy with actions that would reduce the risk of major environmental hazards and stop major causes of pollution. It has formulated a comprehensive institutional and legal framework that permits better environmental management and law enforcement, as well as enhancing institutional cooperation at the national and regional levels. The action plan under implementation includes a national action program for environmental protection that aims to fight pollution, preserve the quality of life of urban and rural populations, protect the marine environment and beaches, and preserve the country's archeological heritage. Tunisia's global and multi-dimensional approach to environmental policy is based mainly to contain pollution and deterioration of the environment within acceptable limits defined by monitoring standards, and to establish measures to protect and valorize all aspects of natural or man-made sites. This approach favors preventive actions based on enforcement of environmental impact assessment recommendations and implementation of emergency plans to solve current major environmental issues in selected regions. At the same time, it recognizes the importance of curative measures in cases of absolute necessity, such as applying the polluter pays principle to damage caused by pollution. The legal framework for environmental management in Tunisia is an active program that defines all measures related to pollution control, procedures for environmental impact assessment, punitive sanctions to safeguard the environment, and incentives to encourage cleanup. In addition, MEAT has enacted a national contingency plan and drafted a regional contingency plans for combating accidental oil spills and marine pollution within the framework of UMA.

(ii) To be able to implement all provisions of MARPOL 73/78, both current and future, GOT recognized the need for improving the efficiency of the existing facilities for waste treatment and reception, and the need to purchase environmental monitoring and combating equipment and develop oil spill contingency and response plans and training.

(iii) Tunisia had established a long and fruitful working relationship within the institutions and agencies in charge of environment, and with the two other participating countries through establishment of the CRCP and mutual agreement for cooperation among port authorities. This established relationship ensured deep trust and confidence within the country's institutions and among the countries in the region, which was critical to success and made project implementation smoother.

(b) There was also less positive factor:

All aspects of maritime pollution prevention and combat require considerable investments to meet requirements set by international conventions, which conflict with the demand for continuing economic growth. This competition for funds made investments in environmental improvements difficult to promote.

5.3 Factors generally subject to implementing agency control:

OMMP already had an established regulatory regime and institutional setup, as well as a long experience with Bank procedures. While the port authorities were responsible for providing waste reception facilities, the cost of running such facilities make it difficult to implement cost recovery principles for investments and operations. To mitigate this difficulty, all existing facilities are run by oil private institutions.

5.4 Costs and financing:

The project was estimated to cost US\$6.3 million equivalent, including physical and price contingencies, of which US\$5.8 million equivalent was in foreign currency and US\$0.5 million equivalent in local currencies. The actual figure at closing were: US\$8.29 million equivalent, of which US\$5.7 million and US\$2.6 million were in foreign and local currency, respectively. The increase was mainly in local currency and shows the government effort and willingness to invest in prevention and control of oil pollution activities. A summary of project costs is given below and details are given in Annex 3. The

above costs are net of taxes and customs duties, as the government waived taxes and duties on all items procured under the project. The costs reflect actual prices using the prevailing exchange rate during project implementation. The foreign exchange cost of the project was financed through a SDR4.1 million equivalent to US\$5.7 million, concessional funding secured from the GET core funds, and the local cost equivalent to US\$2.6 million was financed by the implementing agency.

98 percent of the grant was disbursed by the closing date. The balance of 0.07SDR million was canceled. The balance was due to savings incurred during implementation because of the regional procurement process followed to purchase standardized equipment for the three participating countries, and because of the more favorable international competition and price market.

6. Sustainability

6.1 Rationale for sustainability rating:

The existing institutions in Tunisia, including the implementing agency, have the capacity and the skills to operate and maintain the facilities and equipment provided under the project. In addition, the project provided training to implement and operate the national and regional contingency plans. Technical assistance was geared toward developing mechanisms to achieve financial sustainability for the facilities and regional organizations. The government and the executing agency are implementing study recommendations to cover investment and operating costs. Meanwhile, the legal and institutional framework, including an environmental fund, have been enacted and will provide the additional funds needed to operate and maintain the facilities and equipment supplied under the project. Furthermore, the project made the environmental authority aware of the threat posed by oil pollution. This has resulted into an additional investment financed through local funds, including port contingency plans, periodic testing of equipment, and periodic simulation exercises to test the NCP, and in a request from the South Mediterranean countries (Algeria, Egypt, Libya, Morocco and Tunisia) to GEF to finance a follow up project in the region.

The development of a generic oil spill contingency and response led the Government of Tunisia (GOT) to implement the plan on a nationwide basis for all ports. Further, GOT held several national oil spill response exercises in Tunis and Bizerte in April 20, 1996 and July 7, 1999. The evident success of this exercise (about 100 interested parties attended, including representatives from REMPEC, CEDRE, Oil industry, MOIG, and Algeria and Morocco, compared to 50 expected) will shift the program to an annual series, thereby further enhancing the skills of port authority staff to respond to oil spills.

6.2 Transition arrangement to regular operations:

Based on the foreseen results of the project and its highly satisfactory rating for development and implementation objectives, GEF provided funds to carry out a feasibility study to expand the benefit of the project to the south Mediterranean, which includes Algeria, Egypt, Libya, Morocco, and Tunisia. A PCD has been prepared and approved by the Bank management; however, the GEF Secretariat, in order to coordinate among international waters projects, decided not to go with the project until the final result of the ongoing studies in the straits of Malaca and Bosphoros are published. The first phase of the proposed project would consist of an institutional arrangement enabling the five countries and the oil industry to cooperate in protecting the Mediterranean and preventing oil spills.

7. Bank and Borrower Performance

Bank

7.1 Lending:

The Bank identified key issues and prepared the project in a timely fashion. The project was identified in June 1992 and appraised in August 1993, with the staff appraisal report issued in October 1993. The grant was approved on April 6, 1994, and made effective on June 20, 1994. Bank supervision was also satisfactory.

7.2 Supervision:

Bank performance was enhanced by use throughout the project of the same team, consisting of a financial analyst and a port engineer. This provided a consistency of approach to the issue and an assurance that the project design would be successfully implemented. Further, team members had worked with the CRCP and other involved authorities and thus had established a successful working relationship. The project implementation was supervised on a regular site-visit basis, with supervision staff including the two key project staff and CRCP members. The annual average input of staff resources for supervision was about 8 staff-weeks, which included various specialties (see annex 4). This was possible because supervision of three Bank-financed port projects was coordinated with supervision of this project.

7.3 Overall Bank performance:

Bank performance at all steps of project preparation, appraisal, and implementation was satisfactory, thus ensuring that there was no deviation from the defined objectives and components, and that the local implementing agency as well as the CRCP were adequately staffed and equipped to implement the project. The Bank's role in maintaining and cementing relationships among the countries and CRCP members has been recognized by all parties.

Borrower

7.4 Preparation:

The Borrower was involved from the beginning in the identification/preparation activities. GOT and the implementing agency closely participated with the consultant in identifying project scope and components, based on the existing infrastructure.

7.5 Government implementation performance:

With the exception of the approval of a final Regional Contingency Plan, borrower implementation of the national and regional components of the project was excellent and timely. The preparation of the final RCP draft experienced some delays due to difficulty in reaching consensus within each administration involved, but the final draft was completed before the closing of the project.

7.6 Implementing Agency:

Most procurement processes were well advanced by the date of effectiveness, and were essentially complete by December 1998. With respect to equipment procurement for the waste facilities and vessels, OMMP was able to obtain excellent price quotations through competitive bidding and joint training programs. With respect to monitoring equipment, OMMP had appropriate purchasing power through consolidated bid packages. This format generated competitive prices, provided a commonality of training and equipment base, and resulted in savings. In response to increased risk of pollution, OMMP provided timely proposals to use the savings to procure additional equipment, and recovery means. The delivery of additional equipment experienced some delays due to the difficulties experienced by suppliers to deliver during the busy end of the year period, and bad weather in Europe, but OMMP had managed to complete all activities in the first quarter of year 2000. The four-month extension of the project closing date to April 30, 2000 permitted to use substantial amount of the grant balance.

7.7 Overall Borrower performance:

One of the key objectives of the project was to use successful application of various aspects as a model for other ports within Tunisia. This objective was met. The oil spill contingency and response plan has been made the designated national model and is being introduced in ports. The new port tariff schedule is to be adopted by all ports, thereby providing a means of financing operating and investment costs in preventing and combating oil pollution. Further, the successful development and implementation of the project components, both national and regional, provided a model for expanding this experience in the country to prevent, manage, and reduce oil pollution risk. Thus, the borrower's performance is evaluated as satisfactory.

8. Lessons Learned

This project was funded mainly by a grant from GEF and was the first major funded project in the Pollution Reduction in International Waters category. It can be judged to have clearly met GEF criteria. The project has proven to have a high demonstration value. Its success can be attributed to:

(i) Borrower's and the Bank's approach to the project and commitment to its objectives. The Bank utilized a multidisciplinary team of a financial analyst, port engineer, and marine environmental specialist. This provided consistency throughout, from design and appraisal to implementation. While several administrations and agencies were involved in the project, key leadership was provided by OMMP, ensuring a national consistency and providing a mechanism to utilize model components in other ports, and a regional coordination with the other beneficiaries. Furthermore, GOT has a well-established base of environmental laws and agencies, with trained staff, to monitor and enforce these laws; i.e., the project could build on a strong existing base.

(ii) Borrower's commitment to contribute to the financing of the project.

(iii) Port and coastal environmental management is inherently complex due to overlapping jurisdictions of different departments and ministries, port authorities, and private interests. If Tunisia, Algeria, and Morocco did not strongly commit themselves to the project and have existing efficient port institutions, and had not created the CRCP base upon which the project could be constructed, coupled with good organizational arrangement for project implementation, this project would have been much more difficult to implement. Replication and/or extending this project to other countries can be successful if there are established regulatory and management regimes suitable to the task. Alternatively, such regimes should be first established and stabilized.

(iv) Through enhancing and upgrading national standards, policies, procedures for waste monitoring, and rehabilitation of waste reception and handling facilities, the project has convinced GOT of the environmental benefit of the investments. This has triggered adoption of a multiport ship waste tracking system, a port oil spill contingency and response plan for major Tunisian ports, and the holding of oil spill response training exercises to train all ports and other agencies.

(v) Management of oil spills is only one aspect of port and coastal maritime environmental management. The success of the project can be further enhanced by (a) adoption of an environmental coastal zone and port management plan (a concept already being initiated by OMMP); and (b) implementation of other pollution control activities (e.g., control and management of land-based sources of pollution).

9. Partner Comments

(a) Borrower/implementing agency:

The borrower prepared an ICR and sent his comments. Borrower's conclusions concur with those of the ICR.

(b) Cofinanciers:

N.A.

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

N.A.

10. Additional Information

Annex 1. Key Performance Indicators/Log Frame Matrix

Outcome / Impact Indicators:

Indicator/Matrix	Projected in last PSR	Actual/Latest Estimate
Biannual report on sea water analysis (oil content in the water)	June and December	Provided on time twice a year
Effluent from deballasting station not to exceed 15 ppm	international standards	International standards met
Enactment of National Contingency Plan	condition for disbursement against standardized equipment	Enacted on April 4, 1996
Preparation of Draft Regional Contingency Plan	draft finalized	Drafted and discussed among national committee members, and transmitted to other beneficiaries
Training of technical and Management staff	manager and operational staff	completed training abroad and local of 187 staff
Annual meeting of the CRCP (Regional Committee)	Once a year	Twice a year, as much as the implementation of the regional component needed

Output Indicators:

Indicator/Matrix	Projected in last PSR	Actual/Latest Estimate
Oily material treated	N.A.	1300000 ton/year oily materials 14000 ton/year lubricants
Baseline data on oil content in sea water	12/94	12/95
Staff trained	81	182
Equipment purchased and tested	equipment purchased, delivered, tested and personal trained	equipment purchased, delivered, tested and personal trained during implementation of the project

¹ End of project

Annex 2. Project Costs and Financing

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

Project Cost By Component	Appraisal Estimate US\$ million	Actual/Latest Estimate US\$ million	Percentage of Appraisal
Storage sheds	0.20	0.13	0.65
Equipment to combat oil spill	3.45	4.01	1.31
Harbor Boat-cleaner	0.57	0.67	1.32
VTS	0.75	0.70	0.93
Training	0.22	0.31	1.41
Consultant services	0.10	0.19	2.1
Laboratory work		0.09	
Total Baseline Cost	5.29	8.29	
Physical Contingencies	0.26		
Price Contingencies	0.75		
Total Project Costs	6.30	8.29	
Total Financing Required	6.30	8.29	

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

Expenditure Category	Procurement Method ¹			N.B.F.	Total Cost
	ICB	NCB	Other ²		
1. Works	0.00 (0.00)	0.28 (0.00)	0.00 (0.00)	0.00 (0.00)	0.28 (0.00)
2. Goods	5.50 (5.50)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	5.50 (5.50)
3. Services	0.30 (0.30)	0.22 (0.00)	0.00 (0.00)	0.00 (0.00)	0.52 (0.30)
4. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
5. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
6. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Total	5.80 (5.80)	0.50 (0.00)	0.00 (0.00)	0.00 (0.00)	6.30 (5.80)

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

Expenditure Category	Procurement Method ¹			N.B.F.	Total Cost
	ICB	NCB	Other ²		
1. Works	0.00 (0.00)	0.59 (0.00)	0.00 (0.00)	0.00 (0.00)	0.59 (0.00)
2. Goods	5.56 (5.37)	1.42 (0.00)	0.00 (0.00)	0.00 (0.00)	6.98 (5.37)

3. Services	0.26 (0.26)	0.46 (0.10)	0.00 (0.00)	0.00 (0.00)	0.72 (0.36)
4. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
5. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
6. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Total	5.82 (5.63)	2.47 (0.10)	0.00 (0.00)	0.00 (0.00)	8.29 (5.73)

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

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

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

	Appraisal Estimate			Actual/Latest Estimate			Percentage of Appraisal		
	Bank	Govt.	CoF.	Bank	Govt.	CoF.	Bank	Govt.	CoF.
civil works storage sheds		0.27			0.59		0.0	218.5	0.0
Equipment to combat oil spill	5.50	0.20		5.36	1.33		97.5	665.0	0.0
Training	0.20	0.05		0.30			150.0	0.0	0.0
Consultant services	0.13			0.08	0.63		61.5	0.0	0.0

Annex 3: Economic Costs and Benefits

N.A.

Annex 4. Bank Inputs

(a) Missions:

Stage of Project Cycle	No. of Persons and Specialty (e.g. 2 Economists, 1 FMS, etc.)		Performance Rating	
Month/Year	Count	Specialty	Implementation Progress	Development Objective
Identification/Preparation January 1992	3	Financial Analyst, Port Engineer, Environmental Specialist		
Appraisal/Negotiation July 1993	3	Financial Analyst, Port Engineer, Environmental Specialist		
January 1994	2	Financial Analyst, Port Engineer		
Supervision October 1994	2	Financial Analyst, Port Engineer	HS	HS
April 1995	2	Financial Analyst, Port Engineer	S	HS
May 1996	1	Financial Analyst	S	HS
October 1996	1	Financial Analyst	HS	HS
April 1997	1	Financial Analyst	HS	HS
March 1998	1	Financial Analyst	HS	HS
October 1998	1	Financial Analyst	HS	HS
June 1999	1	Financial Analyst	HS	HS
ICR December 1999	2	Financial Analyst, Environmental Specialist	HS	HS

(b) Staff:

Stage of Project Cycle	Actual/Latest Estimate	
	No. Staff weeks	US\$ (,000)
Identification/Preparation	15.0	41.7
Appraisal/Negotiation	13.8	40.9
Supervision	43.1	162.1
ICR	2.0	8.0
Total	73.9	252.7

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

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

	Rating					
☒ <i>Macro policies</i>	☐ H	☐ SU	☐ M	☐ N	☒ NA	
☒ <i>Sector Policies</i>	☐ H	☐ SU	☐ M	☐ N	☒ NA	
☒ <i>Physical</i>	☒ H	☐ SU	☐ M	☐ N	☐ NA	
☒ <i>Financial</i>	☐ H	☒ SU	☐ M	☐ N	☐ NA	
☒ <i>Institutional Development</i>	☒ H	☐ SU	☐ M	☐ N	☐ NA	
☒ <i>Environmental</i>	☒ H	☐ SU	☐ M	☐ N	☐ NA	
 <i>Social</i>						
☒ <i>Poverty Reduction</i>	☐ H	☐ SU	☐ M	☐ N	☒ NA	
☒ <i>Gender</i>	☐ H	☐ SU	☐ M	☐ N	☒ NA	
☐ <i>Other (Please specify)</i>						
☒ <i>Private sector development</i>	☐ H	☒ SU	☐ M	☐ N	☐ NA	
☒ <i>Public sector management</i>	☒ H	☐ SU	☐ M	☐ N	☐ NA	
☐ <i>Other (Please specify)</i>						

Annex 6. Ratings of Bank and Borrower Performance

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

6.1 Bank performance

Rating

☒ Lending

☐ HS ☒ S ☐ U ☐ HU

☒ Supervision

☒ HS ☐ S ☐ U ☐ HU

☒ Overall

☐ HS ☒ S ☐ U ☐ HU

6.2 Borrower performance

Rating

☒ Preparation

☒ HS ☐ S ☐ U ☐ HU

☐ Government implementation performance

☐ HS ☒ S ☐ U ☐ HU

☒ Implementation agency performance

☐ HS ☒ S ☐ U ☐ HU

☒ Overall

☐ HS ☒ S ☐ U ☐ HU

Annex 7. List of Supporting Documents

List of equipment purchased, and inventory by location

List of personnel trained

Covenants

Borrower's ICR and comments

**I. MARCHE POUR LA FOURNITURE D'EQUIPEMENTS
ET PRODUITS : LOTS 1 ET 2 :**

Produits de traitement et moyens d'épandage

Matériel de confinement et de stockage

A - ETAT DES ÉQUIPEMENTS ACQUIS

Lot 1 : Produits de traitement et moyens d'épandage

EQUIPEMENT OU PRODUIT	QUANTITE
Dispersant	20 tonnes
Equipement complet d'épandage	2U

Lot 2 : Matériel de confinement et de stockage

EQUIPEMENT		QUANTITE
Barrages côtiers		4000 m
Barrages de chantier		600 m
Barrages anti feu		500 m
Stockages flottants souples pour produits pétroliers	100 m ³	2
	25 m ³	2
	10 m ³	8
	5 m ³	2
Lots de 2 stockages terrestres		5

**II. MARCHE POUR LA FOURNITURE
D'EQUIPEMENTS ET PRODUITS
LOT N°3
(Matériel de récupération, de pompage et de lavage)**

EQUIPEMENT	QUANTITE
Barrages récupérateurs d'hydrocarbures flottants (dont un seul moyen de confinement)	02
Barrages récupérateurs d'hydrocarbures visqueux	02
Ensemble écremeur-pompe tonne (mini - max)	06
Tonne à vide allégée (ensemble pompe tonne)	01
Tête flottante d'écémage	09
Nettoyeur à haute pression	12

B - AFFECTATION (voir tableau ci-après)

Désignation	Quantité				Affectation par port					
	m	m3	T	U	B	TG	S	SF	Ga	Zar
Barrage Côtier	4000				700	1400	300	1000	300	300
Barrage de chantier	600					300		300		
Barrage antifeu	500				500					
Barrage récupérateur				4	1	2		1		
Stockage flottant 100m3				2		1		1		
Stockage flottant 25m3				2		1		1		
Stockage flottant 10 m3				8	4		1		1	2
Stockage flottant 05 m3				2			1		1	
Stockage terrestre 05 m3				10	2	4		4		
Ecremeur pompe tonne				6	1	1	1	1	1	1
Tête flottante				9	2	2	1	2	1	1
Nettoyeur à eau chaude				12	1	4	1	4	1	1
Pompe à vide				01		01				
Ro-vac				02		02				
Bras d'épandage				04		2		2		
Pompe d'épandage				02		1		1		
Dispersant			20			10		10		

III. FORMATION CEDRE DANS LE DOMAINE DE LA LUTTE CONTRE LA POLLUTION MARINE PAR LES HYDROCARBURES

Tous les stages de formation prévus par le contrat avec le Bureau CEDRE, ont été réalisés, à savoir :

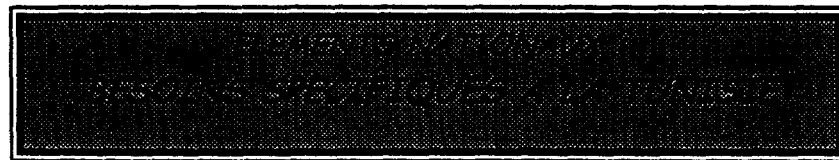
- **Niveau I**: Stages de Gestion de crise et gestion des situations d'urgence : 24 Cadres formés (Tunis, Casablanca et Alger).
- **Niveau II** :
 - Stages de lutte en zone portuaire, en zone littorale et en mer (Brest) : 33 Cadres formés.
 - Stages de formation des formateurs (Tunis, Casablanca et Alger) : 11 Cadres formés.
- **Niveau III** : Stages de formation des intervenants (au total 50 agents ont été formés par des cadres de l'OMMP)

Les organismes participants à la formation ont été l'OMMP, la DGMM, le MEAT, la Marine Nationale, la Garde Nationale, l'ONPC, l'ANPE et le Ministère de l'Industrie.

IV. PLAN REGIONAL D'URGENCE

Une version préliminaire du plan régional d'urgence a été élaborée et elle est en attente d'être examinée par les départements ministériels concernés.

ANNEXE II



**I. MARCHE POUR LA FOURNITURE DE
CONTENEURS DE PETIT MATERIEL
CONTRE LA POLLUTION**

A - LISTE DES EQUIPEMENTS ACQUIS

MATERIEL OU PRODUIT	QUANTITE
09 Conteneurs contenant : 1) Lot de tenues de protection et produits de nettoyage 2) Lot d'outils de ramassage et de manutention 3) Lot de matériel de stockage et de nettoyage 4) 12 Nettoyeurs à haute pression 5) 03 Pompes à eau complète 6) 03 Capacités de stockage	03 ensembles identiques composés chacun de 03 conteneurs numérotés n°1, n°2 et n°3 Chaque conteneur contenant 1/3 des références (1), (2), (3), (4), (5) et (6)

B. AFFECTATION PAR PORT (Voir tableau ci-joint)

**AFFECTATION DES CONTENEURS DE PETIT MATERIEL
(POUR NETTOYAGE DES PLAGES DU LITTORAL)**

Type	Tunis-Goulette	Bizerte	Sfax	TOTAL
Conteneur 1	1	1	1	3
Conteneur 2	1	1	1	3
Conteneur 3	1	1	1	3

II. CONSTRUCTION ET LIVRAISON D'UN BATEAU NETTOYEUR PORTUAIRE

- Marché signé le 17 Décembre 1996 avec la Société ROCLEAN INTERNATIONAL (Angleterre)
- Sous traitant : SCIN (Sfax)
- Montant : 745.823,00 US \$
- Affectation : Port de Tunis-Goulette

DESCRIPTIF TECHNIQUE

Bateau nettoyeur portuaire pour collecte d'hydrocarbures flottants et de macro-déchets (équipé de 02 systèmes de collecte : l'un pour la récupération d'hydrocarbures et l'autre pour la collecte des débris et macro-déchets).

• Caractéristiques générales :

- Longueur hors tout : 12,50 m
- Tirant d'eau maximum: 1,20 m (charge maximum)
- Puissance totale : 148 KW
- Vitesse du moteur : 1800 RPM (Moteur Diesel SCANIA)

III. MECANISME DE SUIVI DE LA POLLUTION (CONVENTION SOTULUB POUR LA SURVEILLANCE DE LA QUALITE DES EAUX LITTORALES ET DES PORTS DE COMMERCE ET RADES TUNISIENS)

- Convention signée avec la SOTULUB en date du 04 Septembre 1995 pour une durée de 5 ans renouvelables par tacite reconduction.
- Exécution des travaux
 - Prises d'échantillons, analyse et rédaction chaque année par la SOTULUB des rapports trimestriels et d'un rapport annuel de synthèse.
- Année 1999 : 4ème année.

IV. CONSTRUCTION D'UNE PLATEFORME DE STOCKAGE ET DE LAVAGE DE BARRAGES FLOTTANTS ANTI-POLLUTION POUR LE PORT DE LA GOULETTE

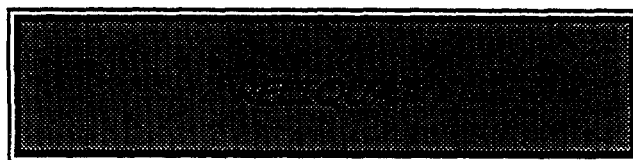
a) Etude d'impact :

- Convention signée avec le Bureau d'Etudes « AUDIT ENVIRONNEMENTAL » et approuvée par l'ANPE en date du 4/12/96 :

b) Exécution :

- Dossier pour la construction de la plate-forme en cours au Port de Tunis-Goulette.

ANNEXE III



**I - FOURNITURE D'EQUIPEMENTS ET PRODUITS
DE LUTTE CONTRE LA POLLUTION
(MAROC - TUNISIE)**

**LOT N° 1 - MARCHE POUR LA FOURNITURE
DE BARRAGES GONFLABLES DE HAUTE MER**

A - EQUIPEMENTS ACQUIS

EQUIPEMENT	QUANTITE
Barrages gonflables de haute mer	2000 m
Lot de conteneurs avec tourets	10U
Unités de puissance, de gonflage et de dégonflage	5U

B - AFFECTATION PAR PORT

TYPE	T.G.R	BIZERTE	SOUSSE	SFAX	GABES	ZARZIS	TOTAL
Barrages gonflables de haute mer	400 m	400 m	-	400 m	400 m	400 m	2000 m

**II. FOURNITURE D'EQUIPEMENTS ET PRODUITS DE LUTTE
CONTRE LA POLLUTION (TUNISIE)**

**LOT N°2 - MARCHÉ POUR LA FOURNITURE DE MOYENS
DE CONFINEMENT, DE STOCKAGE
ET PRODUITS ABSORBANTS**

A - LISTE DES EQUIPEMENTS

EQUIPEMENT		QUANTITE
Moyen de confinement (+ conteneur et Touret)		1U
Tonne à vide		5U
Lot de 2 stockages terrestres		3U
Absorbants	En feuilles	21 m ³
	En tapis	21 m ³
	En barrages	21 m ³

B - AFFECTATION (Voir Tableau ci-après)

AFFECTATION DU MATERIEL ROCLEAN/DESMI (LOT N° 2)

TYPE	Tunis-Goulette	Bizerte	Sousse	Sfax	Gabés	Zarzis	Total
<u>Moyen de confinement pour barrage récupérateur</u>				01			01
* Moyen de confinement * Moyen de conditionnement * Lot de pièces de rechange							
<u>Tonne à vide allégée</u>		01	01	01	01	01	05
* Tonne * Pompe à vide * Ensemble de flexibles * Lot de pièces de rechange							
<u>Lot de 2 stockages terrestres pour produits pétroliers</u>			01		01	01	03
* Unité de stockage adaptée * Lot de pièces de rechange							
<u>Absorbants (m³)</u>							
* Absorbants en tapis	05	05	02	05	02	02	21
* Absorbants en barrage	05	05	02	05	02	02	21
* Absorbants en feuilles	05	05	02	05	02	02	21
* Caisés de conditionnement							
- de 5 m ³	03	03		03			09
- de 2 m ³			03		03	03	09

III. FOURNITURE ET INSTALLATION D'UN SYSTEME V.T.S. AU PORT DE LA GOULETTE

- Marché signé le 7 Août 1998 avec SOFRELOG (FRANCE)
- Montant : 696.511 US \$
- Délai de livraison : 120 jours
- Réception provisoire : le 5 Avril 1999.

- DESCRIPTIF TECHNIQUE :

Equipement spécialisé dont les objectifs recherchés sont :

- la surveillance des eaux du Port de La Goulette (bassin et rade) ;
- la prévention des risques de collision et d'échouement des navires et l'organisation des secours ;
- l'assistance de l'utilisateur du système dans la navigation telle la confirmation des positions des navires, la signalisation de la présence d'obstacles dans leur voisinage ;
- le guidage des navires en leur indiquant le cap et la vitesse à suivre.

- CONSTITUTION :

- 02 radars avec équipements ;
- Système d'enregistrement de l'image radar et V.H.F.
- Postes de travail ;
- Equipement de déportage d'image ;
- Système d'archivage, sauvegarde et restitution de toutes les données d'exploitation ;
- Matériel de secours et sécurité.

IV. CONSTRUCTION DE 3 VEGETTES DE RECUPERATION D'HYDROCARBURES ET DE MACRO-DECHETS

- Marché signé le 10 Juin 1999 avec OIL STOP (U.S.A)
- Montant : 405.800 US \$
- Délai de livraison : 120 jours
- Réception provisoire : le 19 Janvier 2000

DESCRIPTIF TECHNIQUE :

- Caractéristiques générales :

* Longueur HT	: 6 m
* Tirant d'eau maximum	: 0,5 m
* Puissance totale	: 100 CV (2 x 50)
* Construction	: Alu

Ces vedettes sont conçues pour le nettoyage des plans d'eau du bassin du Port. Elles sont ainsi équipées de deux systèmes : l'un pour la récupération des produits pétroliers flottants déversés accidentellement, l'autre pour la collecte des débris solides flottants de toute nature.

AFFECTATION : Une vedette pour chacun des Ports de Bizerte, Sfax et Gabés.

V. FOURNITURE DE DEUX TRACTEURS AVEC REMORQUES ET GODETS, DE DEUX GROUPES DE PUISSANCE AVEC PROJECTEURS ET D'UNE VOITURE 4X4

1/ Marché pour l'acquisition de deux tracteurs

- Signé avec les Etablissements LOUKIL & Cie (TUNISIE) le 03 Novembre 1999.
- Montant : 53.077,966 DT HT et HDD
- Délai de livraison : 60 jours
- Réception provisoire : le 21 Décembre 1999

2/ Marché pour l'acquisition de deux groupes de puissances

- Signé avec la Société SDMO (FRANCE) le 23 Novembre 1999.
- Montant : 217.509,00 FF HT et HDD
- Délai de livraison : 60 jours

3/ Marché pour l'acquisition d'une voiture 4 X 4

- Signé avec la Société SOTRADIES-NISSAN (TUNISIE) le 03 Novembre 1999.
- Montant : 33.059,000 DT HT et HDD
- Délai de livraison : 60 jours
- Réception provisoire : le 27 Décembre 1999.

VI. CONSTRUCTION ET LIVRAISON DE 3 EMBARCATIONS SEMI RIGIDES

- Marché signé avec la Société HIPPOCAMPE (TUNISIE) le 15 Novembre 1999.
- Montant : 167.193,000 DT
- Délai de livraison : 60 jours.

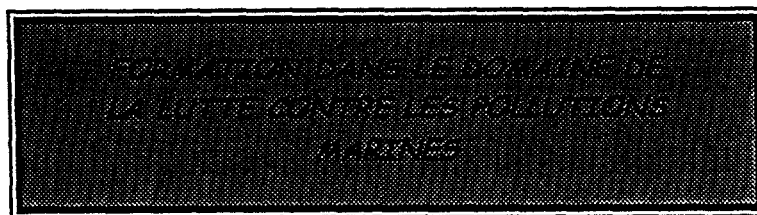
VII. ACQUISITION D'ACCESSOIRES AUX EQUIPEMENTS DE LUTTE CONTRE LA POLLUTION MARINE

- Marché signé avec la Société TECHNOR INDUSTRIES (TUNISIE) le 15 Novembre 99.
- Montant : 147.800 DT
- Délai de livraison : 50 jours

- Déscriptif des accessoires :

- 05 enrouleurs de barrages gonflables ;
- 10 capacités de stockage terrestre temporaire ;
- 10 têtes d'aspiration de produits visqueux : (5 en forme de raie et 5 à flotteurs)
- 03 châssis de transport par route pour les 03 vedettes de récupération ;
- 01 châssis de transport par route pour le bateau nettoyeur.

ANNEXE IV



FORMATION DANS LE DOMAINE DE LA LUTTE CONTRE LES POLLUTIONS MARINES

A) ACTIONS REALISEES PAR LE BUREAU CEDRE

I) Stage de Niveau I :

1/ Gestion des crises :

* Tunis du 15 au 19 Mai 1995.

Messieurs :

- Chokri BEN JANNET : Office National de la Protection Civile.
- Ridha AYACHI : Direction Générale de la Garde Nationale.
- Hassen HANNACHI : Agence Nationale de Protection de l'Environnement.
- Malek SMAOUI : Ministère de l'Environnement et de l'Aménagement du Territoire.
- Fradj NJAIMI : Direction Générale de la Marine Marchande.
- Moncef BOUAZIZ : Direction Générale de la Marine Marchande.
- Ridha AMMAR : Direction Générale de la Marine Marchande.
- Sahbène BEN FADHEL : Office des Ports Nationaux Tunisiens.
- Zine El Abidine KHALKI : Office des Ports Nationaux Tunisiens.
- Med Adel MOKHTAR : Office des Ports Nationaux Tunisiens.
- Taieb BEN MILED : Ministère de la Défense Nationale.
- Mustapha JABEUR : Office des Ports Nationaux Tunisiens.

2/ Gestion des situations d'urgence :

* Casablanca : du 08 au 12 Janvier 1996.

Messieurs :

- Lotfi BILLI : Ministère de l'Intérieur.
- Néjib BEN MAHERSIA : Office des Ports Nationaux Tunisiens.
- Abderrahmane MESSAOUD : Ministère de la Défense Nationale.
- Chokri LAÂMIRI : Office des Ports Nationaux Tunisiens.
- Khelifa EL JOMLI : Office National de la Protection Civile.
- Habib SASSI : Office de la Marine Marchande et des Ports.

3/ Gestion des situations d'urgence :

* Alger fin Mai 1999 : Six participants.

II) Stage de Niveau II :

1/ Stage de lutte en Zone Portuaire n°1

* Brest (France) : du 04 au 08 Septembre 1995.

Messieurs :

- Nouredine SOUISSI : Office des Ports Nationaux Tunisiens.
- Samir HAKIMI : Office des Ports Nationaux Tunisiens.
- Raouf BEN AMEUR : Direction Générale de la Marine Marchande.
- Hassen HANNACHI : Agence Nationale de Protection de l'Environnement.
- Ridha AYACHI : Direction Générale de la Garde Nationale.
- Taieb BEN MILED : Ministère de la Défense Nationale.

2/ Stage de Lutte en Zone littorale n°1.

* Brest (France) : du 26 au 30 Juin 1995.

Messieurs :

- Lassaâd JMAI : Direction Générale de la Marine Marchande.
- Malek SMAOUI : Ministère de l'Environnement et de l'Aménagement du Territoire.
- Ridha DHAOUI : Ministère de la Défense Nationale.
- AbderrazakBOUJLIDA: Office National de la Protection Civile.

3/ Stage de lutte en Mer n°1

* Brest (France) : du 27 au 31 Mai 1996.

Messieurs :

- Iadh BOUTERAÂ : Direction Générale de la Marine Marchande.
- Arbi BOUGUERRA : Agence Nationale de Protection de l'Environnement.
- Samir HAKIMI : Office des Ports Nationaux Tunisiens.
- Hassen BEN HASSEN : Office des Ports Nationaux Tunisiens.
- Abderrahmane MESSAOUD : Ministère de la Défense Nationale.
- Malek MIHOUB : Office National de la Protection Civile.

4/ Stage de lutte en Zone Portuaire n°2 :

* Brest (France) : du 12 au 16 Mai 1997

Messieurs :

- Mohamed BEN KALIA : Office des Ports Nationaux Tunisiens.
- Samir KAABI : Ministère de l'Environnement et de l'Aménagement du Territoire.
- Mohamed Kamel HMILA: Direction Générale de la Garde Nationale.
- Adel HARIZI : Office National de la Protection Civile.
- Tahar CHIBOUB : Ministère de la Défense Nationale.

5/ Stage de lutte en zone littorale n°2

* Brest (France) : du 16 au 20 Septembre 1996.

Messieurs :

- Messaoud Abderrahmane : Ministère de la Défense Nationale.
- Karmous Ali : Ministère de l'Industrie.
- Farah Eddouzi : Office National de la Protection Civile.
- Badereddine Lasmar : Ministère de l'Environnement et de l'Aménagement du Territoire.
- Faouzi Chiboub : Direction Générale de la Marine Marchande.
- Khaled M'sallem : Office des Ports Nationaux Tunisiens.

6/ Stage de lutte en mer n°2

* Brest (France) : du 15 au 19 Septembre 1997.

Messieurs :

- Nouredine Khemakhem: Office des Ports Nationaux Tunisiens.
- Md Naceur El Gharbi : Direction Générale de la Garde Nationale.
- Elloumi Slim : Ministère de la Défense Nationale.
- Moncef Fradj : Direction Générale de la Marine Marchande
- Hichem Boukadi : Office National de la Protection Civile.
- Samir Kaâbi : Agence Nationale de Protection de l'Environnement.

7- Formation des formateurs :

7-1) Formation des Formateurs n°1 :

* Tunis du 09 au 11 Juillet 1996.

Messieurs :

- Hakimi Samir : Office des Ports Nationaux Tunisiens.

- Taieb Ben Miled : Ministère de la Défense Nationale.
- Chokri Ben Jannet : Office National de la Protection Civile.
- Raouf Ben Ameer : Direction Générale de la Marine Marchande.

7-2) Formation des Formateurs n° 2.

* Casablanca du 08 au 10 Juillet 1997.

Messieurs :

- Souissi Nouredine : Office des Ports Nationaux Tunisiens.
- Lasaâd Jmai : Direction Générale de la Marine Marchande.
- Khaled M'sallem : Office des Ports Nationaux Tunisiens.
- Malek Mihoub : Office National de la Protection Civile.

7-3) Formation des formateurs n° 3 :

- Alger du 09 au 11 Octobre 1999 : 3 participants.

B) ACTIONS REALISEES PAR L'O.M.M.P

Formation de niveau III :

L'O.M.M.P a organisé jusqu'à ce jour une série d'actions réservées à la formation des agents de maîtrise impliqués dans la sécurité et la lutte contre la pollution dans les ports . Ainsi cinq sessions de formation ont été dispensées par des cadres de l'OMMP ayant suivi le stage de formation des formateurs assuré par le Bureau C.D.R.E.

Le nombre de participants à ces cycles de formation est de 50 agents.

C) ACTIONS REALISEES DANS LE CADRE DES MARCHES FINANCES PAR LE PROJET FEM I.

I- Marché conclu avec ROCLEAN INTERNATIONAL (lot 1 et 2) :

Dans le cadre de ce marché, une formation pour l'utilisation et la maintenance des équipements et produits fournis a été assurée suivant le programme ci-après :

1- Centre n°1 : Port de la Goulette

du 21/04/1997 au 23/04/1997

Messieurs :

- HAKIMI SAMIR : Port de Tunis-Goulette-Radès.
- M'ZOUGH I Abderrahmen : Port de Tunis-Goulette-Radès.

- CHOUCHE Hassen : Port de Tunis-Goulette-Radès.
- MEJRI Nejib : Port de Tunis-Goulette-Radès.
- NEFSI Mohsen : Port de Tunis-Goulette-Radès.
- LAJMI Kamel : Port de Tunis-Goulette-Radès.
- SOUSSI Nouredine : Port de Bizerte.
- DHIB Hamadi : Port de Bizerte.
- GHARBI Mohamed : Port de Bizerte.
- GUISSOUMA Férid : Port de Bizerte.
- B. KHELIL Mohamed : Port de Bizerte.
- B. KALIA Mohamed : Port de Sousse.
- SASSI Lotfi : Port de Sousse.
- NAJAR Sofiane : Port de Sousse.
- BOUMIZA Habib : Port de Sousse.
- BARHOUMI Salah : Port de Sousse.

2- Centre n°2 : Port de Sfax

du 24/04/1997 au 25/04/1997

Messieurs :

- BEN HAMROUN Abdallah : Port de Zarzis
- GHERRI Mokthar : Port de Zarzis
- MAHJOUB Med Kamel : Port de Zarzis
- JABER Ali : Port de Gabès
- NAJJARI Abdelkader : Port de Gabès
- BEN MANSOUR Mohamed : Port de Gabès
- BOUGHANMI Faouzi : Port de Gabès
- SDIRA Nouredine : Port de Gabès
- BEN HASSEN Hassen : Port de Sfax
- BOUALI Nouredine : Port de Sfax
- KHEMAKHEM Nouredine : Port de Sfax
- M'KACHER Samir : Port de Sfax
- BEN HASSEN Moncef : Port de Sfax
- BEN SALAH Néjib : Port de Sfax
- KRAIEM Karim : Port de Sfax

II- Marché conclu avec DESMI (lot n° 3) :

Dans le cadre de ce marché, une formation pour l'utilisation et la maintenance de équipements fournis a été assurée suivant le programme ci-après :

1 - Centre n°1 : Port de la Goulette

du 13/03/1997 au 15/03/1997

Messieurs :

• HAKIMI SAMIR	: Port de Tunis-Goulette-Radès.
• M'ZOUGH I Abderrahmen	: Port de Tunis-Goulette-Radès.
• CHOUCHE NE Hassen	: Port de Tunis-Goulette-Radès.
• MEJRI Nejib	: Port de Tunis-Goulette-Radès.
• NEFSI Mohsen	: Port de Tunis-Goulette-Radès.
• LAJMI Kamel	: Port de Tunis-Goulette-Radès.
• SOUSSI Nouredine	: Port de Bizerte.
• DHIB Hamadi	: Port de Bizerte.
• GHARBI Mohamed	: Port de Bizerte.
• GUISSOUMA Férid	: Port de Bizerte.
• B. KHELIL Mohamed	: Port de Bizerte.
• B. KALIA Mohamed	: Port de Sousse.
• SASSI Lotfi	: Port de Sousse.
• NAJAR Sofiane	: Port de Sousse.
• BOUMIZA Habib	: Port de Sousse.
• BARHOUMI Salah	: Port de Sousse.

2 - Centre n°2 : Port de Sfax

du 17/03/1997 au 19/03/1997

Messieurs :

• BEN HAMROUN Abdallah	: Port de Zarzis
• GHERRI Mokthar	: Port de Zarzis
• MAHJOUB Med Kamel	: Port de Zarzis
• JABER Ali	: Port de Gabès
• NAJJARI Abdelkader	: Port de Gabès
• BEN MANSOUR Mohamed	: Port de Gabès
• BOUGHANMI Faouzi	: Port de Gabès
• SDIRA Nouredine	: Port de Gabès
• BEN HASSEN Hassen	: Port de Sfax
• BOUALI Nouredine	: Port de Sfax
• KHEMAKHEM Nouredine	: Port de Sfax
• M'KACHER Samir	: Port de Sfax
• BEN HASSEN Moncef	: Port de Sfax
• BEN SALAH Néjib	: Port de Sfax
• KRAIEM Karim	: Port de Sfax

III- Marché conclu avec ITEPS : Conteneurs de petit matériel :

Dans le cadre de ce marché, une formation relative au montage et à l'utilisation du petit matériel a été dispensée par APPLIED FABRIC TECHNOLOGIES durant les journées du 14, 15 et 16 Octobre 1997 au port de la Goulette.

Ont assisté à cette formation durant les journées sus-mentionnées :

Messieurs :

- BEN FADHEL Sahbène : Direction de la Sécurité et Gestion de la Pollution
- EL OUESLATI Moncef : Direction de la Sécurité et Gestion de la Pollution
- HAKIM Samir : Port de Tunis-Goulette-Radès.
- BEN HASSEN HASSEN : Port de Tunis-Goulette-Radès.
- CHOUCHENE Hassen : Port de Tunis-Goulette-Radès.
- LAJMI Kamel : Port de Tunis-Goulette-Radès.
- BEN HASSINE Med HABIB : Port de Tunis-Goulette-Radès.

IV- Marché conclu avec OIL STOP : Barrages gonflables de haute mer :

Dans le cadre de ce marché, il a été prévu deux types de formation :

1- Formation dans le domaine de la lutte contre les pollutions marines

Cette formation a été faite aux Etats-Unis d'Amérique à Galveston par « The Texas A and M University System -Center for Marine Training and Safety » du 10 Août 1998 au 14 Août 1998.

Ont participé à cette formation :

Messieurs :

- BOUSSETTA Med ANIS : Directeur de la Sécurité et de la Gestion de la Pollution
- HAKIMI Samir : Commandant du Port de Tunis-Goulette-Radès

2- Formation sur site :

Une formation théorique et pratique sur site de livraison d'une durée de 3 jours est prévue par le marché à la réception du matériel. Cette formation a été assurée par les techniciens du fournisseur et a été dispensée à 18 agents des 5 ports de commerce : Tunis-Goulette, Bizerte, Gabès et Zarzis..

V- Marché conclu avec ROCLEAN DESMI Lot 2 : Matériels de confinement, de stockage et produits absorbants.

- Durée : 3 jours : les 3,4,et 5 Mai 1999, ont participé à cette formation 14 personnes

VI- Marché conclu avec SOFRELOG : Fourniture et installation d'un système VTS portuaire au port de La Goulette.

- Formation Administrateur Système (durée 5 jours), ont participé à cette formation cinq personnes
- Formation des Opérateurs (sur site de livraison), ont participé à cette formation Six personnes.

VII- Marché conclu avec OIL STOP : Acquisition de 3 vedettes de récupération d'hydrocarbures et de macro-déchets.

- Durée 2 jours, ont participé à cette formation 9 agents.

VIII- Marché conclu avec ROCLEAN INTERNATIONAL : Acquisition d'un bateau Nettoyeur.

- Formation mécaniciens :
- Durée 15 jours, ont participé à cette formation 02 agents
- Formation exploitants :
- Durée 15 jours, ont participé à cette formation 06 agents.

D) SESSION MULTINATIONALE INFOPOL

Trois sessions de formation dans le domaine de la lutte contre les pollutions marines assurées par le Ministère Français de l'Equipeement des Transports et du Logement se sont déroulées à Brest, Marseille et Paris selon le programme suivant :

* Du 30-05-1994 au 09-06-1994

Ont participé à cette session :

Messieurs :

- BEN JEBARA Ahmed : Directeur du Port de Tunis-Goulette.
- HAKIMI Samir : Commandant des ports Tunis-Goulette-Radès

*** Du 17-06-1996 au 30-06-1996**

Ont participé à cette session :

Messieurs :

- BEN FADHEL Sahbène : Directeur de la Sécurité et de la Gestion de la Pollution
- BEN HASSEN Hassen : Commandant du port de Sfax

*** Du 11 05-1998 au 20-15-1998**

Ont participé à cette session :

Messieurs :

- BOUSSETTA Med Anis: Directeur de la Sécurité et de la Gestion de la Pollution
- EL AOUNI Driss : Commandant du Port de Bizerte.

*** Juin 1999 :**

Ont participé à cette session :

Messieurs :

- SASSI Habib : Directeur du Port de Zarzis
- Moncef OUESLATI : D.S.G.P.
- Khaled M'SALLEM : Port de Gabés

Il y a lieu de noter que les deux premières sessions ont été financées par la Banque Mondiale et la 3 ème session par l'O.M.M.P

**Commentaires de l'Office de la Marine Marchande et des Ports
concernant l'exécution du Projet FEM pour un système de gestion
de la pollution Marine par les hydrocarbures dans le
Sud Ouest de la Méditerranée (rapport de
la Banque Mondiale du 1er Mai 2000)**

Le projet sus-cité est la première expérience dans son genre dans la région aussi bien dans sa conception que dans sa planification.

Celui-ci a fixé à l'avance certains objectifs à atteindre en fin de parcours et partant de ces objectifs, a établi des composantes nationales et régionales lesquelles constituent l'ossature du projet.

Parmi les objectifs initiaux du projet, on peut citer essentiellement :

- La réduction des quantités d'hydrocarbures déversées dans la mer méditerranée ,
- La conformité aux exigences de MARPOL 73/78 ;
- La coordination et les échanges d'informations entre les différents ports de la région ;
- Le renforcement de la capacité de surveillance dans la région pour prévoir et lutter contre les éventuelles pollutions ;
- L'amélioration de la qualité de l'environnement marin ;

Depuis la signature de l'accord de Don en Mai 1994 jusqu'à l'achèvement du projet en Avril 2000 (la clôture était fixée au mois de Décembre 1999), l'OMMP, en tant qu'agent d'exécution du projet, s'est efforcé avec les moyens se trouvant à sa disposition et malgré les difficultés rencontrées (d'ordre administratif surtout) de mener à terme le projet et de réaliser le maximum des composantes prévues et ainsi atteindre la majorité des objectifs fixés.

Aussi, le bilan du projet FEM demeure largement positif, en ce sens que le taux de réalisation de ses composantes est maximum et que les acquis et les avantages résultant de ce projet sont manifestes, à savoir essentiellement :

- Une mise en place d'un plan national d'urgence et des plans d'urgence portuaires dont il faudrait accroître la performance en y apportant les retouches nécessaires.
- Un renforcement de la capacité institutionnelle du pays par la création et la participation à différents organismes concernés par la protection de l'environnement, à savoir :
 - Le Ministère de l'Environnement et de l'Aménagement du Territoire ;
 - L'Agence Nationale de la Protection de l'Environnement ;
 - L'Agence de la Protection et de l'Aménagement du Littoral ;
 - L'Office National d'Assainissement ;
 - Le Centre International des Technologies de l'Environnement de Tunisie ;
 - L'observatoire National du littoral ;
 - Le réseau des Communicateurs Environnementaux du Bassin Méditerranéen ;
 - Le projet de Conservation des zones humides et des écosystèmes en méditerranée.
- Une constitution d'une banque de données pour le suivi et le contrôle de la teneur en hydrocarbures des eaux des ports et rades tunisiens ainsi que certains points du littoral. Cette composante contribue dans une grande mesure, à travers l'analyse des résultats des rapports trimestriels élaborés par la SOTULUB au contrôle et à la réduction de la pollution dans les eaux nationales et celles attenantes à la Tunisie, ainsi qu'à l'évaluation de l'impact du projet.
- L'acquisition d'un matériel spécifique de lutte contre la pollution marine affecté à chaque port de commerce, permettant à la Tunisie dans une certaine mesure d'être prête dans le cas d'un déversement pétrolier de moyenne ampleur (< à 100 T).
- Une formation continue et adéquate du personnel des différents départements concernés.
- Une sensibilisation plus accrue du personnel d'exécution et d'encadrement de l'OMMP en particulier et des responsables des institutions publiques en général, dans le domaine de la prévention et la lutte contre la pollution marine.

- Une organisation de plusieurs opérations blanches permettant de tester les plans d'urgence et de familiariser les différents intervenants aux techniques de lutte :
 - 1994 dans le port de Tunis-Goulette
 - Fin 1999 dans le port de Bizerte
 - Une opération blanche déclenchant le plan national d'urgence est prévue pour Septembre 2000.
- La budgétisation au niveau de l'OMMP des projets suivants :
 - Acquisition de deux VTS portuaires ;
 - Elaboration des plans d'urgence portuaires ;
 - Audit sécurité et vulnérabilité des ports ;
 - Etude d'identification des sites de rejet des matériaux de dragage dans les ports de commerce ;
 - Traitement des boues de dragage du poste pétrolier au port de Tunis-Goulette .

En outre, sur le plan régional, le projet a permis d'instaurer une coopération étroite entre les trois pays à travers les agences d'exécution pour la prévention et la lutte contre les pollutions marines par les hydrocarbures.

Parmi les conséquences directes de ce projet, il y a lieu de noter :

- L'instauration d'un Comité Régional de Coordination du Projet (CRCP) ;
- La signature d'un Accord de Coopération et d'Assistance entre les organismes portuaires d'Algérie, du Maroc et de la Tunisie ;
- L'élaboration d'un draft du plan régional d'urgence, dont les grandes lignes ont été tracées et qui sera bientôt opérationnel ;
- La formation commune du personnel d'état major et d'intervention des trois pays.

Il est à signaler que l'existence dans les trois pays d'un matériel standard de lutte anti-pollution, de personnes qui ont reçu une formation commune à tous les niveaux ainsi que l'existence d'un accord de coopération sont autant d'éléments de base qui leur permettent de conjuguer leurs efforts pour lutter contre une éventuelle pollution marine d'envergure.

Cependant, comme nous l'avons exprimé dans notre rapport final d'achèvement, la description du projet a subi une légère modification. En ce sens et pour des raisons

essentiellement budgétaires, il fallait établir des priorités et par conséquent certaines composantes initiales du projet n'ont pas été réalisées, à savoir :

- l'acquisition des camions-citernes ;
- les études techniques et de commercialisation concernant le devenir des produits récupérés.

Quelques actions ont été entreprises en ce sens, c'est ainsi que la Société Tunisienne des Industries de Raffinage (STIR) a procédé à l'amélioration du rendement de la station de déballastage du Port de Bizerte et une étude sur la gestion des déchets des navires a été réalisée sous l'égide du Ministère de l'Environnement et de l'Aménagement du Territoire.

Ceci reste insuffisant et nettement en deçà des besoins. En effet et eu égard aux dispositions de MARPOL 73/78, les ports de commerce et surtout ceux ayant des terminaux pétroliers doivent être équipés d'installations de réception, de prétraitement et de traitement des huiles usées, des eaux de cale et des eaux de ballast contaminées par les hydrocarbures.

Les besoins de la Tunisie se traduiront essentiellement par :

- l'installation de stations de réception dans les ports ;
- l'installation de stations de prétraitement et de traitement des produits récupérés ;
- l'acquisition de stockages temporaires et de barges de stockage ;
- la surveillance des côtes par l'installation de VTS côtiers ...

Ceci permettra à la Tunisie ainsi qu'à ses partenaires de la région de répondre favorablement aux exigences de la Convention MARPOL 73/78 et de contribuer d'une manière efficace à la préservation de l'environnement marin du bassin méditerranéen.

A cet effet, nous émettons l'espoir que le projet FEM II, initié par la Banque Mondiale et qui se trouve être une suite logique et nécessaire au présent projet puisse voir le jour et être concrétisé.

