

Morocco
Protected Areas Management Project

Project Document
January 2000



THE WORLD BANK

GEF Documentation

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Rural Development, Water and Environment Group
Middle East and North Africa Regional Office

CURRENCY EQUIVALENTS

(June 1999)

Currency Unit = MAD

MAD = US\$ 0.101

US\$1 = MAD 9.92

FISCAL YEAR

July 1 – June 30

ABBREVIATIONS AND ACRONYMS

AFD	French Development Agency/ <i>Agence française de développement</i>
BNDB	National Biodiversity Database/ <i>Banque nationale de données sur la biodiversité</i>
CAS	Country Assistance Strategy/ <i>Stratégie d'assistance au pays</i>
DREF	Regional Directorate of Forestry and Water/ <i>Direction régionale des eaux et forêts</i>
EIA	Environmental Impact Assessments/ <i>Etude d'impact environnemental</i>
ENFI	National Forestry School of Engineers/ <i>Ecole nationale forestière d'ingénieur</i>
EU	European Union/ <i>Union européenne</i>
FAO	Food and Agriculture Organization/ <i>Organisation des Nations Unies pour l'alimentation et l'agriculture</i>
FFEM	French Global Environmental Facility/ <i>Fonds Français pour l'environnement mondial</i>
FMR	Financial Management Report/ <i>Rapport de gestion du projet</i>
FMS	Financial Management System/ <i>Système de gestion financière</i>
GEF	Global Environmental Facility/ <i>Fonds mondial pour l'environnement</i>
GIS	Geographic Information System/ <i>Système d'information géographique</i>
IGF	Audit Department of the Ministry of Finance / <i>Inspection Générale des Finances</i>
ITREF	Royal Water and Forestry Institute for Technicians/ <i>Institut royal des techniciens des eaux et forêts</i>
GOM	Government of Morocco/ <i>Gouvernement du Maroc</i>
GTZ	German Technical Assistance Agency/ <i>Gesellschaft für Technische Zusammenarbeit</i>
LACI	Loan Administrative Change Initiative
MADRPM	Ministry of Agriculture, Rural Development and Marine Fisheries <i>Ministère de l'agriculture, du développement rural et des pêches maritimes</i>
MOF	Ministry of Finance/ <i>Ministère des Finances</i>
MWF	Ministry of Water and Forestry/ <i>Ministère chargé des eaux et forêts</i>
NGO	Non-Governmental Organization/ <i>Organisation non-gouvernementale</i>
PIP	Project Implementation Plan/ <i>Plan d'exécution du projet</i>
PDD	Community Development Plans / <i>Plan de développement de Douar</i>
PMR	Project Management Report/ <i>Rapport de gestion du projet</i>
PMU	Project Management Unit/ <i>Cellule de gestion du projet</i>
SEGMA	Autonomous Administrative Unit for Forestry Products Development <i>Service d'Etat géré de manière autonome pour la valorisation de produits forestiers</i>
SIBE	Sites of Ecological and Biological Interest/ <i>Site d'intérêt biologique et écologique</i>
SOE	Statement of Expenditures/ <i>Relevé de dépenses</i>
STAP	Scientific Technical Advisory Panel/ <i>Panel consultatif scientifique et technique</i>
TGR	Kingdom National Treasury/ <i>Trésorerie Générale du Royaume</i>
UNDP	United Nations Development Program/ <i>Programme des Nations Unies pour le Développement</i>
UNEP	United Nations Environment Program/ <i>Programme des Nations Unies pour l'Environnement</i>
UNESCO	United Nations Educational, Scientific and Cultural Organization <i>Organisation des Nations Unies pour l'éducation, la science et la culture</i>

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Task Leader:	Laurent Msellati

Kingdom of Morocco
Protected Areas Management Project (GEF)

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Map **Morocco - Project Areas for the GEF Protected Areas Management Project (IBRD 30229)**

Kingdom of Morocco
Protected Areas Management Project (GEF)

PROJECT APPRAISAL DOCUMENT

Middle East and North Africa Regional Office

Date: January 5, 2000
Country Director: Christian Delvoie
Project ID: MA-PE-48314
Sector: Environment/Biodiversity
Lending Instrument: GEF GRANT

Task Team Leader: Laurent Msellati
Sector Manager/Director: Salah Darghouth/Doris Koehn
Program Objective Category : EN
Environmentally Sustainable Development
Program of Targeted Intervention: ☐ Yes ☒ No

Project Financing Data ☐ **Loan** ☐ **Credit** ☐ **Guarantee** ☒ **Other [Grant]**

For Loans/Credits/Others: Grant

Amount: SDR 7.7 Million (US\$10.5 Million equivalent)

Proposed terms: ☐ Multicurrency ☐ Single currency, specify
Grace period (years): N/A ☐ Standard Variable ☐ Fixed ☐ LIBOR-based
Years to maturity: N/A
Commitment fee: N/A
Service charge: N/A

Financing plan (US\$M):

Source	Local	Foreign	Total
GEF	5.4	5.1	10.5
Government	4.1	0.0	4.1
Beneficiaries	1.1	0.0	1.1
Total	10.6	5.1	15.7

Beneficiary: Kingdom of Morocco

Guarantor: N/A

Responsible agency: Ministry of Water and Forestry (*Ministère chargé des eaux et forêts, MWF*)

Estimated disbursements

(Bank FY/US\$M):	2000	2001	2002	2003	2004	2005	2006
Annual	0.50	1.00	2.10	2.70	2.50	1.20	0.50
Cumulative	0.50	1.50	3.60	6.30	8.80	10.00	10.50

Project implementation period:
6 years

Expected effectiveness date:
April 30, 2000

Expected closing date:
June 30, 2006.

A. Project Development Objectives

1. Project development objectives and key performance indicators (see Annex 1):

The Strategic Objective of the project is to contribute to sustainable development in Morocco by conserving its natural resources and biodiversity. The project's specific development objectives are:

- to improve conservation of globally significant ecosystems and species in Morocco. Achievement of this objective would be measured through establishing a monitoring and evaluation system of Moroccan protected areas for measuring incidence and recovery of key ecosystems and species in selected sites;
- to contribute to the establishment of a system of protected areas in Morocco. Achievement of this objective would be measured through the implementation, with the participation of local communities, of conservation management plans in the National parks and reserves included in the project; and
- to strengthen the institutional capacity for sustainable conservation management in Morocco. Achievement of this objective would be measured by the number of Ministry of Water and Forestry (MWF) staff trained in participatory conservation management, and the monitoring of key indicators defined in the monitoring and evaluation system.

Secondary objectives include increasing public awareness of and support to sustainable conservation management, and creation of a base for sustainable ecotourism development in the future. Key performance indicators are given in Annex 1.

B. Strategic Context

1. Sector-related country assistance strategy (CAS) goal supported by the project (see Annex 1):

CAS document number: R97-2 Date of latest CAS discussion: January 30, 1997

The proposed project would support Morocco in strengthening its natural resource and environmental management agenda, one of the four priority objectives specified in the current CAS. The proposed operation would also contribute broadly to the completion and implementation of the Environmental Action Plan (November 1998), prepared by the Government of Morocco (GOM), with the assistance of UNDP, using participatory approaches.

GEF Operational Strategy/Program Objective Addressed by the Project:

The proposed project complies with GEF operational objectives in the area of biodiversity conservation. It addresses the four GEF Operational Programs in the Biodiversity focal Area: **OP 1** (Arid and Semi-Arid), **OP 2** (Coastal, Marine, and Freshwater Ecosystems), **OP 3** (Forest Ecosystems) and **OP 4** (Mountain Ecosystems). Pilot sites that are located in the respective biomes and ecosystems were selected during project preparation.

Morocco has ratified the following major international environmental conventions and agreements addressing the protection of natural habitats and related species – CITES (1973); UNESCO World Heritage (1975); Ramsar Convention (1980); Bonn Convention (1983); Barcelona Convention with its related UNEP/Mediterranean Action Plan and protocol regarding special protected areas (1983); Desertification Convention (1996); and the Biological Diversity Convention (1996). GEF has also been active in supporting several biodiversity conservation projects in Mediterranean countries, including a GEF/UNEP biodiversity strategy study in Morocco, and a GEF/UNDP regional coastal and wetlands conservation project primarily focussing on capacity building and pilot components for a limited number of sites.

The proposed project is designed to support the following articles of the Biological Diversity Convention:

- Article 6 - General measures for conservation and sustainable use (conservation management plans for selected sites of biological and ecological interest);

- Article 7 - Identification and monitoring;
- Article 8 – In situ conservation (strengthened protected areas and environmentally sustainable development adjacent to protected areas, rehabilitation and restoration of fragile ecosystems);
- Article 11 - Incentive measures (participatory programs implemented with local populations);
- Article 13 - Public education and awareness (improved public awareness on nature protection).

The proposed project will fill a key gap in biodiversity conservation in the region by supporting conservation management in a country which is the second most biologically diverse in the Mediterranean.

2. *Main sector issues and government strategy:*

Biodiversity Value in Morocco. Morocco is outpaced in species and habitat diversity in the Mediterranean region only by Turkey.

- Because of its location and topography, on both the Atlantic and Mediterranean coasts, Morocco faces extremes in climate, with negligible rainfall in the Sahara to the South and precipitation up to 2,000 mm in the Northern mountains, with altitudes up to 4,000 m and permanent snow cover. There is a rich variety of habitats and species, and 39 major ecosystem types, ranging from mountain and lowland forests, grasslands and wetlands to coastal lagoons and marine environments (See also Annex 12 for a fuller description of Morocco's ecosystems).
- There are an estimated 4,000 species of vascular plants, over 20% of which are endemic. Morocco is the richest country in the Mediterranean in terms of fauna, including 550 vertebrates, with 101 mammalian species and 22 endemic species of reptiles and amphibians. Thirty species of birds, including the bald ibis (*Geronticus eremita*), the slender billed curlew (*Numenius tenuirostris*) and the Lammergeier (*Gypaete barbata*) are endangered; and 31 species of reptiles are threatened or endangered. Despite this, less than 1% of Morocco's surface currently has some form of active protection regime. The principal threats to biodiversity are habitat transformation and degradation through conversion for agriculture, urban expansion and industrial or tourism development. In addition, approximately 70% of Morocco's poorest population (49% of total population) lives in rural areas, increasing pressure on natural resources. The population of the mountainous areas, which are the richest in biodiversity, is the poorest of all.

Sector Issues. The main sector issue is how best to promote improved sustainable natural resources and environmental management while involving the local populations dependent on these resources.

Government Strategy. The Moroccan authorities are aware of Morocco's natural resource potential and the threats to sustainable management.

- In 1996, the MWF completed a comprehensive Strategy for Protected Areas with African Development Bank funding. This study has served as the basis for the design of the proposed project. The strategy proposed a network of 8 national parks and 150 other sites of ecological and biological interest (SIBEs/reserves) covering about 3% of Morocco's land area. In the 20 years within which the strategy would be implemented, the objective is to have at least 85% of the major threatened ecosystems under sustainable management. The strategy stresses the importance of integrating conservation, utilization and sustainable development. The Protected Areas Strategy may also be seen within the context of three other major studies completed recently, a Forestry Development Plan, which emphasizes sustainable forest management with the participation of local populations, a Watershed Management Plan, which focuses on addressing watershed degradation issues, also with local populations, and a Biodiversity study, prepared by the State Secretariat for Environment.
- Institutional responsibilities for protected areas are clear in Morocco. While the State Secretariat of Environment has responsibility for overall environmental policy, responsibility for management of protected areas is with the Nature Protection Service in MWF. The Ministry has a well-established organization at the central, regional and local levels, and a staff of over 7,000.

3. *Sector issues to be addressed by the project and strategic choices:*

The project will assist the Government of Morocco (GOM) in achieving its objective of sustainable development by assisting with the establishment and management of a network of national parks and reserves and fostering a partnership between the population in the area and the parks' administration. The proposed project would strengthen the capacity of the MWF to plan, implement, regulate and coordinate biodiversity conservation at local and national levels. It would also build on and complement ongoing activities funded by other donors, and would link these individual programs into a national approach. Over the long term, sustainable resource management will contribute to the livelihood of local populations and create a basis for ecotourism. Detailed planning and implementation at the local level, with a decentralized approach and flexible management, are indispensable requirements for the participatory approach to succeed.

Due to limited resources and the need to achieve "results on the ground" the project will be limited to three national parks (*SIBE/Parcs*), namely Toubkal, Al Hoceima and Eastern High Atlas National Park, all three of global significance, and ten reserves maximum (*SIBE/Réserves*).

Other Financing Agencies. In Morocco, numerous multilateral and bilateral programs are being implemented in the field of protected areas management. The German cooperation (GTZ) have been working in Souss Massa National Parks on the Atlantic Coast south of Agadir, for the past six years. The European Union (EU) will implement a management plan in the Talassemmane National Park, in the Rif, which includes globally important forest ecosystems, such as fir forests (*Abies marocana*) of the Rif. Preservation of forest ecosystems, management of fauna, such as the Barbary macaque, and sylvo-pastoral rehabilitation need to be undertaken urgently. The French Development Agency (AFD), partly under the French GEF (*Fond français pour l'environnement mondial/FFEM*) will fund activities in Ifrane National Park. Ifrane includes globally important forest ecosystems, such as the Atlantic and Atlas cedar, oak and juniper forests which are threatened by human pressure and include high national-level endemism because of the large and diverse floral associations. UNDP-GEF, are identifying a project in the reserve of Jebel Saghro where they will apply biodiversity management and monitoring, directly implicating the local communities. They have also identified a project in Southern Morocco focusing on transhumance and its role in ecosystem conservation. In Tazekka National Park, north of Fez, the Italian Cooperation/FAO are assisting with community-based conservation management. The Regional Coastal and Wetlands conservation project (financed by UNDP - GEF- AFD/FFEM) will be concerned with three littoral Moroccan SIBEs. The IBRD-financed Second Forestry Project assisted with provision of basic infrastructure (sign-posts, small information centers) in Tazzeka, Toubkal and Sous-Massa.

C. Project Description Summary

1. *Project components (see Annex 2 for detailed description and Annex 3 for detailed cost estimates):*

Project activities have been grouped into four main components, of which the integrated implementation will enable the fulfillment of national and local project objectives: (a) strengthening of national implementation capacity; (b) preparation and implementation of management plans for SIBE/Parks; (c) preparation and implementation of management plans of SIBEs/Reserves; and (d) public awareness and education. Through preparation and implementation of conservation management plans in 3 national parks and up to 10 reserves in Morocco, the project will help to establish an integrated network of protected areas management. As a large part of the activities will also be in forests, and broad-based training in conservation management would be provided to forestry staff, the project will support mainstreaming biodiversity conservation in forest planning and management.

Component	Category	Cost Incl. Contingencies (US\$M)	% of Total	GEF- Financing (US\$M)	% of GEF Financing
1. National Capacity Building	Institution Building	3.5	22	2.5	71
2. National Parks Management	Physical Works	7.6	48	4.9	64
3. Reserves Management	Physical Works	3.9	25	2.6	67
4. Public Awareness and Education	Institution Building	0.7	5	0.5	75
Total		15.7	100	10.5	67

A brief description of the four components follows:

- **Component 1: National Capacity Building (US\$3.5 million).** This component will contribute to the capacity building of personnel in the national parks and reserves in the MWF. The component will support: (a) the training of park management staff and rangers and MWF staff, including enhanced training of trainers of Moroccan foresters; (b) a program of scientific studies and monitoring of biodiversity; (c) establishment of a geographic information system (GIS) and database at central and local levels (BNDB); and (d) technical assistance to support the Nature Protection Service in project management, monitoring and evaluation, research/protected area management, and financial reporting and management.
- **Component 2: National Parks Management (SIBE/Parcs) (US\$7.6 million).** This component will contribute to: (a) manage and restore globally significant and threatened ecosystems and species in three national parks; (b) enhance natural resources through ecotourism development; (c) develop and implement sustainable conservation management plans using a participatory approach (through community development plans or Plans de développement de Douars), with appropriate income-earning opportunities for local populations; and (d) the provision of basic equipment and training for management. The project would first support activities in Toubkal and Al Hoceima National Parks, and depending on the success of these operations and the mid-term implementation review, it would then support conservation management in the Eastern High Atlas National Park.
- **Component 3: Reserves Management (SIBE/Réserves) (US\$3.9 million).** Ten potential sites have been selected among the most threatened or important in Morocco. The component includes: (a) preparation of conservation management plans; (b) management and restoration of ecosystems; (c) promotion of ecotourism; and (d) implementation of community development plans (PDD) involving local populations which are users of the natural resources basis. The total number of sites to be included in the project will also depend on the results of the mid-term review and will not exceed 10.
- **Component 4: Public Awareness and Education (US\$0.7 million).** The component includes public awareness activities, in cooperation with NGOs, through: (a) support to production of biodiversity conservation "spot" programs on television and radio, and (b) support to a small grants program in Al-Hoceima, Toubkal, and Eastern High Atlas which would assist NGOs and local organizations to promote public understanding of nature conservation for the communities living in and near the parks, through programs in schools, production of publicity materials, training and monitoring, and local conservation activities.

Project Area. The project will be implemented in three National Parks (i.e. Toubkal, Al Hoceima, Eastern High Atlas) and in ten Reserves representative of the country's ecological variety. Regarding the legal framework, Toubkal is the only National Park (*SIBE/Parc*) to be legally established; the decrees for designation of the other two parks have been prepared and are under review. As per the Reserves (*SIBE/Réserve*), they do not yet have a legal status except for the "Arrêté du Ministre chargé des Eaux et Forêts" relating to hunting bans.

- **Toubkal National Park.** This park, with an area of 38,000 ha and a buffer zone of 58,000 ha, is located in the Central High Atlas with altitude varying from 1,500 to 4,167 m. Its rainfall, isolation and altitude contribute to a wide range of ecosystems, which include at least 145 endemic species and fauna of global importance. This park includes juniper and oak forest and a varied and unusual flora, including 23 endemic species. It includes large or

rare mammals (the aoudad, *Ammotragus lervia*), and the barbary macaque (*Macaca sylvanus*), 95 species of nesting birds, and several threatened or endangered raptors.

- The Eastern High Atlas National Park. With an area of 52,000 ha and an altitude from 1,650m to 3,077m, this park is subject to both Atlantic and Saharan climatic influences and also has a wide variety of ecosystems. Its flora is of high biological value, including endemic and/or rare species, and fauna include the aoudad, Cuvier's gazelle (*Gazella cuvieri*), the macaque and probably the striped hyena.
- Al Hoceima National Park. This park is located in the province of Al Hoceima, on the northwestern Mediterranean coast, and comprises coastal and marine ecosystems. With an area of 31,000 ha and a proposed buffer zone of 46,000 ha, and an altitude ranging from sea level to 747m, its marine life and bird life are of global importance; it is a refuge for many rare and endangered marine (red coral) and bird species such as the osprey (*Pandion haliaetus*) and Audouin's gull (*Larus Auouinii*) and is threatened by possible future coastal development. This park also includes 2,500 ha of marine reserves.
- Reserves. The reserves (SIBE/Réserve) targetted under the project cover five main ecosystems, Rif, Middle-Atlas, High Atlas, Saharan Atlas and the littoral Atlantic Sahara. The four SIBEs to be addressed in the first years of the project include Jebel Moussa (near Al-Hoceima), Aghbar and Tamga (near Toubkal) and Khniffis (on the Atlantic coast). Jebel Moussa includes many endemic species and is a key resting place for small migrating birds; Aghbar and Tamgar have rare pine and cypress forests, a wide variety of mammals and birds and a high degree of endemism, while Khnifiss, on the southern Atlantic, is a Ramsar site with varied aquatic and terrestrial ecosystems, mammals, birds and invertebrates.

2. *Key policy and institutional reforms supported by the project:*

As reflected in its objectives, description and implementation arrangements, the project will contribute to policy and institutional reforms by helping to:

- incorporate biodiversity conservation into forest management;
- promote participatory approaches in conservation management by implementing models for participatory conservation management - for replication in Morocco and regionally; and
- enhance public awareness in conservation management.

3. *Benefits and target population:*

Due to the global importance of the biodiversity and the project's national dimension, the benefits will extend well beyond the populations directly involved.

- At the Global Level. Global benefits will accrue from sustainable conservation management of the national parks, including some unique flora and fauna in at least 30 different ecosystems. The results of this project could contribute to models of conservation in sites not only in the country, but also to regional initiatives, since the project would assist Morocco in fostering links and collaboration to benefit from conservation initiatives in the adjacent countries.
- National Benefits. The project will help build the national capacity to implement the first phase of the national protected areas strategy over an initial five-year period. The MWF will benefit from the institutional component, through training, and establishment of an integrated geographic information system which will address the issues of priority conservation planning and management. Participating NGOs will also benefit from strengthened institutional capacity to raise public awareness and environmental education, reinforcing the importance of participation in biodiversity and natural resource management.
- Local Level. The project will support sustainable conservation management at the local level. It will result in increased levels of revenue for the participating populations by putting in place activities that will generate income, while, at the same time, taking into consideration protection of the environment. The project will also

sensitize the population in the use of better agricultural and forestry techniques. In addition, the project will support participation of local communities in project design and implementation. The target population consists of approximately 150,000 inhabitants in and around the conservation areas. The population make-up in the different parks is included in Annex 2.

4. *Institutional and implementation arrangements:*

Implementation Period: 6 years, January 1, 2000 - December 31, 2005 (completion date)

Project Implementation

The project would be implemented through the Nature Protection Service in the MWF whose manager (*Chef de service*) would have, as Project Director, overall responsibility for the implementation and supervision of the project. Financial and accounting management will be carried out through a SEGMA. The Project Director would be assisted by two deputies (*adjoints*) responsible for financial/procurement and technical aspects, respectively. Consultants (in management, biodiversity and monitoring/evaluation) would assist with implementing the project. At the central level, implementation will also be carried out through MWF's other Departments, such as Human Resources and Budget. Implementation in the different regions will be carried out by the Regional Directorates of Forestry and Water (DREF), headed by a chief of Parks and Reserves. At the provincial level, the forest rangers in the national parks or reserves will be responsible for day-to-day work. Staffing plans have been prepared (see PIP) and would not involve new staff recruitment but instead "redeployment". The population in and near the national parks would participate in implementation, in particular for the Community Development Plans (PDD).

The Training Service of the MWF would have responsibility for coordinating implementation of the training component with the principal Moroccan forest training institutes, with training grouped into a limited number of modules in order to facilitate implementation. Moroccan research institutes would participate in implementation of the research and eco-systems studies components, with the *Institut Scientifique de Rabat* taking responsibility for coordinating the inventory activities to be undertaken in the first year.

The public awareness component would be implemented by NGOs. A national NGO would be contracted to produce television and radio "spots" highlighting biodiversity conservation issues. Local NGOs would implement the public awareness activities in the parks of Al Hoceima and Toubkal, and later on in the Eastern High Atlas Park through a small competitive grants scheme, for which the NGOs would apply. Eligible activities would include community awareness, education in schools, and local conservation activities. A maximum of three local "umbrella" NGOs would be responsible for financial management of the grants schemes and would participate in grant selection in accordance with procedures acceptable to the Bank, as specified in the PIP.

Overall Project Coordination

Coordination, planning and programming, monitoring and supervision activities will be undertaken by the MWF's Nature Protection Service. An inter-ministerial Coordination Committee, comprising members of the MWF, Ministries of Interior, Tourism, General Affairs, Agriculture, Rural Development and Marine Fisheries, State Secretary for Environment and the principal research institutes, would meet every six months to discuss any inter-ministerial issues that may arise. At the local level, activities would be coordinated through the weekly provincial committee (*Comité technique provincial*) meetings which already take place, under the chairmanship of the Wali of the province.

Project Financial Management System (FMS)

The Financial Management System in place in the MWF, implementing agency for the project, is based on principles and procedures defined by the legal framework applicable to the public sector and more specifically to governmental institutions. The main characteristics of this system are: (a) an accounting system using the cash basis and the outline of budget components; (b) an annual approved budget for procurement and disbursement closely controlled by the Ministry of Finance units; (c) a centralization of payments in the National Treasury (*Trésorerie Générale du Royaume*, TGR), at both the central and the provincial levels, unless the use of "*Caisses de Régie*" or "*Services d'Etat Géré de manière autonome*" (SEGMA) is authorized; and (d) a fiduciary responsibility of control of budget execution and

monitoring assigned to the Finance General Inspectorate (*Inspection Générale des Finances/IGF*) and Supreme Court of Audit (*Cour des Comptes*).

Project implementation, in accordance with World Bank procedures, requires adjustments of the financial management system of MWF in order to address constraints identified during project preparation, including: (a) lack of a computerized accounting system; (b) non-official definition writing of the financial management procedures; and (c) incomplete Management Information System (MIS). MWF is in the process of addressing several of these issues, but resolution will likely require several years of concerted effort.

In order to address the financial management weaknesses outlined above, an agreed-upon financial management strengthening plan specific to the project will be implemented. The action plan, which is detailed in Annex 6, includes:

- Monitoring. Utilization of the existing SEGMA for Forestry Products (*SEGMA pour la valorisation des produits forestiers*) for project budgetary and financial management and designation of required staff including an "Ordonnateur" an "Agent comptable";
- Project Management Unit (PMU). Organization of the PMU within the existing Nature Protection Service, and designation of required staff including the appointment of a qualified accountant and financial officer and regional coordinators;
- Accounting. Issuing of: (a) the chart of accounts specific to the project; (b) the Procedures Manual; and (c) training program for staff involved in project monitoring;
- Management Information System. The Procedures Manual will include a section on the financial management for the project reflecting an effective internal control system with procedures intended to prevent, detect, correct, and mitigate the risk of material errors and omissions, and operational inefficiencies.

Disbursements from the GEF Grant would be made under the traditional disbursement procedures as described in Annex 5. However, the PMU, in close collaboration with the SEGMA, will submit to the Bank a PMR on a quarterly basis and no later than 45 days after the calendar quarter. The first report including data related to procurement and disbursement would be transmitted to the Bank no later than October 31, 2000. The PMR acceptable to the Bank will be transmitted to the Bank no later than May 15, 2001, and has to be validated by the Bank no later than June 30, 2001, after the assessment of the financial management system and certification of operational efficiency of the system. The action plan to enable the preparation of PMRs is described in Annex 6.

Accounting, Financial Reporting and Auditing Arrangements

Progress reports, as well as Project Management Reports (PMR), will be prepared by the Nature Protection Service from information provided by the SEGMA. The need for specific software applications for consolidating project accounts and preparing the financial statements has been incorporated into project design. Project funds would be disbursed through the "SEGMA for forestry products" attached to MWF, in order to facilitate payments. Annex 6 describes the current system and accounting arrangements, and makes recommendations for improvement. The action plan, as referred to in the above paragraph and aiming to build a financial management capacity for the project within the PMU, has been discussed and accepted by Moroccan authorities during project negotiations.

Each year, independent auditors acceptable to the Bank will audit the project accounts maintained and prepared at PMU level. During negotiations, it was agreed that this assignment could be carried out by the "Inspection Générale des Finances" (IGF). Audit reports, including statements of expenditure and special accounts reconciliation, will be submitted annually to the Bank within six months of the end of Government's fiscal year.

Monitoring and Evaluation Arrangements

Monitoring of the project will be divided into two: (a) scientific monitoring and evaluation, which will allow the development of biological indicators and the analysis of the effects of management measures used by the project on the natural resources; and (b) monitoring of project physical and financial implementation, taking into account project

progress. A consultant to the Nature Protection Service would assist with monitoring and evaluation, including training of project staff. Monitoring and evaluation will be in accordance with the indicators presented in Annex 1, in particular biodiversity impact monitoring indicators. The PMU will be responsible for the preparation of the progress reports, with the help of the monitoring and evaluation consultant, staff and advisors, and the Director of the SEGMA for the financial aspects. The reports will be prepared every three months and would include the monitoring indicators. In addition, the PMRs will serve as the basis for the preparation of an annual activity report, covering the calendar year (January 1 – December 31), and which will be sent to the World Bank prior to January 31 of the following year.

The project has been designed to have an in-depth progress review at the beginning of the third year of implementation. The review would assess progress and redesign project elements as necessary. Depending on progress, a decision would be made when and how to expand the project to the other sites (Eastern High Atlas National Park and up to six reserves).

D. Project Rationale

1. Project alternatives considered and reasons for rejection:

The different scenarios that were considered but rejected are summarized as follows:

- Focus on all 8 national parks and 150 reserves. This scenario was not selected due to the limited resources available to implement a project of this size. In addition, the interest expressed by other financing agencies in financing at least two of the national parks made it more practical to select a sub-set. The selection of a sub-set would also allow the development of tangible results and monitoring indicators that can then be streamlined as needed before they are replicated to the other national parks. The initial focus on two parks and four reserves also allows for a phased “learning by doing” approach.
- Put all the resources in one park. This is the approach that has been followed by various donors who have intervened in national parks in Morocco. However, this approach would not establish a network of national parks, nor address the problems of biodiversity degradation in a global manner. It is the objective of this project to pilot the network structure and then, where applicable, use the results to extend this network to the remaining national parks and reserves.
- Centralized rather than decentralized park management. The centralized approach was abandoned because projects in Morocco and elsewhere have clearly shown that a decentralized structure is more effective, especially where management/implementation involves participation of the local populations.
- GEF - biodiversity conservation in the production landscape. The approach selected was to start working on public land, create and establish a network of national parks and then, when a better understanding has been achieved, develop and incorporate the concept of biodiversity conservation in a production landscape. However, the project will incorporate biodiversity conservation into forests management practices.

2. *Major related projects financed by the bank and/or other development agencies:*

Sector Problem	Project	Latest Implementation Progress	Supervision Development Objective
<i>Bank-financed</i>			
Poverty reduction and integrated rural development projects	Fes-Karia-Tissa (Loan 1602) (Project C, 1979)	N/A	S
	Loukkos (Loan 1848) (Project C, 1980)	N/A	S
	Middle Atlas (Loan 2082) (Project C, 1982)	N/A	U
	Oulmes-Rommani (Loan 2217) (Project C, 1983)	N/A	S
Forestry development projects, including watershed management and limited infrastructure to Tazzeke, Toubkal and Souss-Massa national parks	Second Forestry Development Project (Loan 3156) (Project C, 1991)	S	S
Projects to improve living conditions in rural areas through electrification	Second Rural Electrification Project (Loan 3262) (Project C, 1991)	S	S
Road construction projects to improve access to social services and markets for rural poor	Secondary, Tertiary and Rural Roads Project (Loan 3901) (Project O, 1995)	S	S
Potable water supply projects in rural areas	Rural Water Supply and Sanitation Project (Loan 4254) (Project O, 1998)	S	S
Watershed and natural resource management projects through participatory approaches	Lakhdar Watershed Management Pilot Project (Loan 4424) (Project O, 1999)	S	S
Projects to strengthen environmental institutions, legislation and information systems	Environment Management Project (Loan 3647) (Project C, 1994)	U	U
<i>Other Development Agencies</i>			
Rural poverty and natural resource management	EU – Participatory development of forestry zones in the Province of Chaouen – Talassemtane National Park (Project P)		N/A
Participatory development of forestry zones	AFD – Participatory management of forestry zones in Ifrane and Ifrane Natural Park (Project P)		N/A
Natural resource management	Italian Cooperation/FAO: Taza Natural Resource Management – Tazekka National Park (Project O)		N/A
Participatory natural resource and national park management, species re-introduction	GTZ – Conservation Management – Souss-Massa, Toubkal and Tazekka National Parks (Project O)		N/A

IP/DO Ratings: [HS (Highly Satisfactory), S (Satisfactory), U (Unsatisfactory), HU (Highly Unsatisfactory), N/A (Not Available)]
Project Cycle: [P (Planned), O (Ongoing), C (Completed)]

3. *Lessons learned and reflected in the project design:*

One of the main lessons learned relates to the importance of involving local communities in natural resources and biodiversity conservation. Bank and Moroccan experience shows that community involvement is critical. In addition, experience shows that although the effort needed to ensure adequate participation may be high and the evolution slow, the benefits in terms of eventual sustainability of investments make it worthwhile to ensure local ownership and sustainability. Furthermore, participation of the local population must be coupled with awareness campaigns and training sessions. The project has involved the local population in project preparation resulting in the preparation of six Douar Development Plans to be implemented in the first year, as part of the conservation management plans.

Experience also emphasizes the importance of providing income-generating activities to the local population participating in conservation management through provision and upgrading of basic infrastructure, development of ecotourism, and introduction of better agriculture and forestry. The STAP review indicated strong support for the project and confirmed the importance of a participatory approach.

The project uses a decentralized implementation structure, because experience has shown that top-down approaches are not effective in gaining the commitment of the local population.

4. *Indications of Borrower commitment and ownership:*

The Government, through the MWF, has shown commitment to the implementation of its strategy and has led the preparation of the project. MWF has pledged its full support in facilitating the transition of the designated "paper" parks to fully operational parks and reserves. The Ministry has also shown commitment in having the local population involved in preparation and implementation. For the purpose of strengthening the participatory approach, the project will employ a decentralized structure for its implementation. The Ministry has encouraged the participation of NGOs in the project. It has shown its commitment to good project performance by deploying personnel who have been involved in the preparation of the biodiversity strategy, and who have experience in implementing Bank projects, such as the recently closed Bank-financed Forestry II Project (closed June 30, 1998). This will greatly add to the efficacy with which the project is implemented as well as reinforce capacity not only in the PMU, but also in the Ministry.

5. *Value added of Bank support in this project:*

The Bank has considerable international experience in the conservation and management of biodiversity and natural resources. This experience, including that of GEF, has been taken into account from the beginning in the project design. The emphasis by the Bank on institutional capacity building will ensure that project implementation will target all stakeholders, including NGOs and beneficiaries. The Bank is also contributing to other sustainable natural resource management activities in Morocco (water resources and watershed management) and the proposed project complements these activities.

E. Summary Project Analysis

1. *Economic analysis:*

Economic rate of return analysis is not usually conducted for GEF biodiversity projects. Annex 4 presents the incremental cost analysis, which identifies the incremental costs and global benefits of carrying out the project. In designing the project, cost-effectiveness criteria (minimizing budget impact, maximizing involvement of the local population, using existing institutions, building on existing studies and experience) were an important feature. The Government of Morocco has ongoing programs for watershed rehabilitation and sustainable forest management which would also have broader sustainable natural resource management and carbon sequestration implications. The main objective of the proposed GEF project is conservation of globally significant ecosystems and species.

2. *Financial analysis:*

Financial rate of return analysis is not usually conducted for GEF biodiversity projects. The incremental recurrent costs of the project were calculated and compared with the present budget of the Ministry of Forests, to confirm whether the project would impose an undue burden on the Ministry. In 1997-98 the total budget of the Ministry was MAD 540 million (US\$54 million). Recurrent costs of the project are estimated at US\$270,000 annually, less than 0.5% of the Ministry's annual budget. These costs do not impose an undue burden on the Ministry and are considered sustainable. The Ministry, through other programs, is also carrying out studies on options for long-term financial autonomy of parks and reserves, including the creation of autonomous "SEGMA" for each park, and permitting a portion of potential entry fees charged to be retained by provincial forestry organizations rather than going directly to the National Treasury. (The allocation of entrance fees charged to visit cultural monuments whereby portion of the fees is retained to permit monument maintenance, may serve as a model). GTZ, which has already pursued the "SEGMA" option in Sous-Massa, will finance a detailed study of the various options during the project implementation period.

3. *Technical analysis:*

The designs of the main project activities were influenced by: (a) their technical effectiveness to reply to each specific ecological requirement; (b) their appropriateness for the Moroccan context; and (c) their adaptability to existing conditions and social acceptability. In addition, the replicability of technologies to areas with similar needs was also considered. For the SIBEs, the conservation strategy was selected not to be closed and exclusive, but to continue sustainable use by local populations. The existing technical experience and lessons learned in Morocco and in neighboring countries were also taken into consideration. Annex 12 provides a technical justification for the project from the standpoint of ecosystems conservation, while Annex 1 provides key biodiversity monitoring indicators.

4. *Institutional analysis:*

The MWF is a long established institution having relevant experience in project implementation, both for the Bank and other donors. The DREFs, the regional organizations of the MWF, who will be involved in the day-day implementation of the project also have a long history of project implementation. Although there will be no new recruitment in the project, staff "redeployment" within the Ministry will be carried out to ensure adequate manpower for implementation. The project will fund training and technical assistance to enhance biodiversity conservation capacity in the Ministry, DREFs, and park and reserves personnel.

5. *Social analysis:*

Annex 9 provides a social and institutional assessment of the different stakeholders, at local, regional and national level. Stakeholders include official organizations, the local population, research organizations, the private sector and NGOs. It also shows how each interest group is implicated in project design and implementation.

6. *Environmental assessment:* *Environmental Category* ☐ A ☐ B ☒ C

The project has been given a category "C" rating. The project impact will most certainly be positive, as the project should restore and enhance the seriously degraded environments.

7. *Participatory approach:*

Primary beneficiaries and other affected groups: (see Annex 9)

As natural habitats and forest ecosystems, in particular, are a major component of rural livelihoods in Morocco, sustained support to protected areas management from the local stakeholders has to be established. Morocco has several years' experience with participatory natural resource management, and the approach is now widely accepted. Development of the conservation management plans in Toubkal and Al-Hoceima, the initial sites selected, was undertaken with the local population who have also identified appropriate rural development activities within the PDD. This approach will be continued and expanded through project implementation. There has been extensive collaboration at the national, regional and local levels, between the Ministry of Water and Forestry and the different groups of beneficiaries including community groups, academic and applied research institutions, tourist organizations, NGOs and donor agencies during the identification and preparation of the project. This approach is consistent with the new strategy of the MWF, which emphasizes broad-based participation as a key ingredient in sustainable forestry and natural resource management. The project would, in turn, contribute to fostering these major emerging changes.

The following management process, based on a participatory approach with three features, will be a core feature of the implementation phase:

- a clear and common definition of the conservation goals for each protected area;
- the use of multiple zoning, with the allocation of different levels of importance to protection of biodiversity values to different areas including the definition of buffer zones; and
- a consensus-building effort through negotiation and extensive local consultation to ensure long-term partnerships and acceptance of viable protected areas management plans.

Other Key Stakeholders:

The project would develop partnerships with local NGOs. As NGOs in Morocco have to date been very little involved in protected areas management, the Small Grant Program, under this project, would promote innovative practice and dialogue. The project would also involve academic and applied research institutions, local television, newspapers, and tourist organizations.

F. Sustainability and Risks

1. Sustainability:

Project sustainability will depend on the following:

- participation and commitment of local communities to implement the conservation management plans financed under the project. This would be assured by the participatory approach employed to prepare the management plans, together with the complementary investments envisaged in activities which will directly benefit local communities;
- continued recurrent cost funding of conservation management through the Ministry of Finance to the MWF. The recurrent cost implications of the project are modest compared with the overall recurrent budget of the Administration. No new staff recruitment is envisaged, and past experience has indicated that financing recurrent costs is not generally a major issue; and
- commitment and capacity of the MWF and associated organizations to continue the work on ecosystems conservation begun under the project. This would be assured through the capacity-building component and in particular the broad-based training in conservation management and ecosystems monitoring.

2. Critical risks :

	Risk	Risk Rating	Risk Minimization Measures
Project Outputs to Development Objectives	Government's commitment towards the sustainable management of protected areas dwindles.	N	Government is committed to providing a substantial 25% of project costs during the 5-year implementation period, and to providing 100% of the operating costs thereafter.
	Complex administrative and budgetary procedures hinder the implementation of participatory activities.	H	The financial and accounting management of the Project will be carried out through an autonomous agency (SEGMA).
	The capacity of the Nature Protection Service at the central level remains limited.	M	The project includes a strong training program and additional personnel is allocated to the project.

	Risk	Risk Rating	Risk Minimization Measures
Project Components to Outputs	Lack of competent field staff to efficiently implement the project.	S	Staff reallocation program of DREF and a strong training program.
	Rigid financing mechanisms for village associations and NGOs.	S	A manual describing the application procedures for subsidies for associations and NGOs, including selection criteria, will be designed.
	Local communities committed to short-term revenue maximization rather than to long-term conservation management.	M	Local communities will participate in the preparation and implementation of conservation management plans.
	Inadequate collaboration between Government and research institutions.	S	A limited number of conventions will be established and a scientific body will monitor the program.
	The biodiversity database is inaccessible and not updated.	M	The project includes the set-up of an interactive database with a network of partners, under the coordination of a relevant central institution.
Overall Risk Rating		M	

[Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N (Negligible or Low Risk)]

G. Main Loan Conditions

1. Negotiations:

The following actions were taken prior to Negotiations:

- Nomination of two additional staff (a national parks management specialist and a financial management specialist) to the Nature Protection Service.
- Allocation of sufficient office space, in one location, to the Nature Protection Service.
- Agreement on the financial management plan and on proposals to assure adequate financial management.
- Establishment of the National Coordination Committee.
- Preparation of the bidding documents for the technical assistance and training components, and for the first year's research investment activities.

2. Board Presentation:

Prior to Board presentation, the Project Implementation Plan (PIP) was submitted to the Bank .

3. Effectiveness:

- The "Arrêté" concerning the financial and accounting organization of the "SEGMA pour la valorisation des produits forestiers" has been revised to the satisfaction of the Bank, so as to enable the Bank to disburse project funds.
- As this is a Grant, presentation to the Bank of the legal opinion of the "Secrétariat Général du Gouvernement" is not necessary.

4. *Others [listed according to the Grant Agreement Standards]*

Financial and Audits:

- Standard provisions on audits.
- The Government of Morocco will open, and keep, with the “Trésorerie générale du Royaume” a special account in Moroccan Dirhams, under conditions satisfactory to the Bank.

Management:

- A Procedures Manual, acceptable to the Bank, will be established, according to PIP terms of reference, no later than September 2000. Preparation of this Procedures Manual can be funded through the project.
- A PMU, consisting of a project director, assisted by a technical team, including two technical specialists and two support staff, will be established and maintained during the project life.
- The financing and accounting management of the project will be undertaken by the SEGMA.
- Standard provisions on the Quarterly Project Management Reports (PMR).

Project Implementation:

- The PMU will prepare, at the beginning of each year, an annual work plan for project implementation which will be sent to the Borrower for review and comments before March 31.
- At the regional level, the project will be implemented by the DREF. For each of the three national parks, a park manager will be nominated, assisted by at least two technical specialists and forest rangers, whose number and qualifications will be satisfactory to the World Bank.
- At the community level, two community workers (1 “animateur” and 1 “animatrice”) will be recruited for each of the three parks.
- The public awareness component will be carried out by the NGOs in accordance with the procedures described in the Procedures Manual.
- The PDD will be implemented through community participation according to procedures which will be detailed in the Procedures Manual. The procedures will include direct subsidies and a community contribution, in cash or kind, of at least 30% of the investment costs.

H. Readiness for Implementation

[] The engineering design documents for the first year's activities are complete and ready for the start of project implementation. [X] NA

[X] The procurement documents for the first year's activities are complete and ready for the start of project implementation. (See G.1(d)).

[X] The Project Implementation Plan has been appraised as realistic and satisfactory.

I. Compliance with Bank Policies

☒ This project complies with all applicable Bank policies.

[signature]

Task Leader: Laurent Msellati

[signature]

Sector Manager/Director: Salah Darghouth/Doris Koehn

[signature]

Country Director: Christian Delvoie

Annex 1

Project Design Summary

Narrative Summary	Key Performance Indicators	Monitoring and Supervision	Critical Assumptions
<p>CAS Objective</p> <ul style="list-style-type: none"> • Contribute to the sustainable development of Morocco through ensuring the conservation of its natural resources and its biodiversity. 	<ul style="list-style-type: none"> • Number of protected areas under sustainable management • Extent of protected areas (% of national territory) 	<ul style="list-style-type: none"> • Annual report of activities by MWF 	<ul style="list-style-type: none"> • Implementation of the national strategy for protected areas • The project contributes to the development of local populations
<p>Project Development Objectives</p> <ul style="list-style-type: none"> • Improve conservation of globally significant ecosystems and species in Morocco • Contribute to the establishment of a system of protected areas in Morocco • Strengthen the institutional capacity for sustainable conservation management in Morocco 	<ul style="list-style-type: none"> • Regeneration of vegetative cover • Reestablishment of the animal populations • Incorporation of the results of scientific research in the protected area management plans for key ecosystems • Implementation of the management plans in 3 national parks and 10 reserves • Reduction in the exploitation of the resources in the project areas with the participation of the local communities • Slowing down of processes that affect biodiversity adversely • Training of personnel in the parks and reserves and MWF in protected area management • Establishment of an ecosystems information and monitoring system • Implementation of a program for increased public awareness of the importance of biodiversity conservation 	<ul style="list-style-type: none"> • Reports on the scientific monitoring of biodiversity in protected areas • Report of activities of MWF • Minutes of the meetings of the local committees (<i>Douars</i>) • Bank supervision reports and audit reports • Report of activities of MWF • Bank supervision reports and audit reports 	<ul style="list-style-type: none"> • The Government maintains its commitment to sustainable management of protected areas • Flexible and appropriate management procedures are in place • The Nature Protection Service at the central level is reinforced to ensure efficient management of the project

Narrative Summary	Key Performance Indicators	Monitoring and Supervision	Critical Assumptions
Project Outputs <ul style="list-style-type: none"> • Forestry Administration responsible for managing protected areas strengthened and management options validated • Forestry training institutions offer courses in protected area management • Scientific monitoring of the biodiversity and ecosystems of primary sites of biological and ecological interest carried out • National awareness campaign and communications program up and running • Conservation site management of the 3 parks is effective • Administrative procedures governing the creation and management of the 10 reserves is established • Community participation for the 3 parks and 10 reserves is well established 	<ul style="list-style-type: none"> • Management and monitoring tools in place • Local financing mechanisms established for village associations • Number of hours of training provided at ENFI and ITREF • Number of scientific studies • Database and GIS in use • Number of TV and radio spots • Number of public meetings • Number of NGOs mobilized • Judicial statutes approved • On-site management structures established for parks • Management plans being implemented • Infrastructures created • Legal/administrative instruments for the creation of the reserves are established • Number of development and management plans prepared • Number of field agents trained and assigned • Number of village associations established • Number of PDD in operation • Level of subsidies granted 	<ul style="list-style-type: none"> • Project activity reports of MWF • Local Forest Service activity reports (DREFs and provincial services) • Bank supervision reports • Project Activity reports of ENFI and ITREF • Standard contract for research activities • Scientific publications • Service contracts with NGOs • Official Journals • Park management plans • Development Plans for reserves • Reports and minutes of meetings with local communities • Community development plans (PDD) 	<ul style="list-style-type: none"> • Assignment of forestry needed for project management at the central and regional levels • Adequate training of technical personnel • Mechanisms to permit the project to subsidize NGOs and village associations are in place • Effective participation of the local communities in the preparation and implementation of the park management plans • Adequate collaboration among the scientific institutions for the management of the research program • The national databank on biodiversity (BNDB) is accessible and functional
Project Components <ul style="list-style-type: none"> • National capacity building • National parks: management of the 3 parks • Reserves development • Public awareness and education 	<ul style="list-style-type: none"> • Management support: US\$ 1.0 M • Training: US\$ 0.9 M • Database: US\$ 0.9 M • Scientific monitoring: US\$ 0.7 M • Al Hoceima: US\$ 2.4 M • Haut Atlas Oriental: US\$ 2.1M • Toubkal : US\$ 3.1 M • US\$ 3.9 M • US\$ 0.7 M 	<ul style="list-style-type: none"> • Project activity reports of MWF • Bank spn. Reports • Documents on procurement and disbursement • Audit reports 	<ul style="list-style-type: none"> • MWF recognized as having primary responsibility for management of protected areas • Sufficient competent personnel in place at the parks and reserves • Physical and financial resources are adequate

List of Monitoring Indicators

On the basis of the project documents prepared by MWF with the support of the BCEOM-Agroconcept group, the following performance objectives were retained for each of the three development objectives of the project. Detailed tables are presented, as examples, in the Project Implementation Plan to enable the monitoring and evaluation specialist, to be recruited by the project, to establish a simple and realistic system to measure in the medium term, project performance, results and impact.

Objective N° 1 : Improve conservation of globally significant ecosystems and species

The scientific monitoring system put in place by the project will allow the measurement of impact of conservation of ecosystems and on the species of global importance, and biodiversity in general in Morocco. This system will be supported by scientific studies which will be carried out in the framework of the project and which will serve to augment the national database. A series of 13 key performance indicators presented in the table below will be utilized in the context of conservation management. These indicators were reclassified under three categories: (a) indicators of vegetative cover; (b) indicators of increasing animal populations; and (c) indicators specific to the marine environment.

Indicators of regenerating vegetative cover

- Samples that will permit the evaluation of the specific vegetative diversity (1), and to estimate the vegetative biomass (in particular, the species of "sapides") (2), at the level of managed land and non-managed land;
- For a certain number of tree species for which there exists a problem of regeneration at the local level (*Quercus rotundifolia*, *Cedrus atlantica*, *Juniperus phoenicea*) or national level (*Juniperus thurifera*, *Cupressus atlantica*), the rate of regeneration (natural or assisted) will be evaluated (3)

Indicators of increasing the local animal populations, with an estimate of their evolution

- Evolution of the populations of Aoudad, by index (utilization of feces) and, where possible, calibration (4), and monitoring of the area of distribution (samples and regrouping the observations) (5)
- Counting of gazelle populations (6) by multiple observers
- Evolution of the populations of the Barbary ape, in particular through the survival rate of the young of each year and the demographic structure of the groups (7)
- Monitoring of the availability of food for the ungulates (already available through the vegetative monitoring data) (2) and of the Barbary ape (samples by vegetative strata, analysis of the upper strata and oak reproduction) (8)
- Evolution of the number of reproducing pairs of day raptors (9), ospreys and Audouin's gull (11)
- Samples of avifauna (10) in managed land managed and in non-managed land

In the marine environment, the indicators of specific importance (global and rare species), for flora and fauna (12 et 13) have already been established.

Objective N° 2 : Contribute to the establishment of a system of protected areas in Morocco

In the 150 sites of biological interest (SIBEs) identified in the Strategy for Protected Areas, the project will limit itself to 3 national parks : Toubkal, Al Hoceima et Haut Atlas Oriental, all three having globally important biodiversity, and 10 reserves being representative of the diverse ecosystems of Morocco. The following indicators will permit the evaluation of the project results:

- Putting in place the three management plans in the national parks
- Preparation of ten development plans for the reserves
- Establishment of the Community Development Plans (PDD) with the collaboration of the local user populations (number of PDDs).

Objective N° 3 : Strengthen the institutional capacity for sustainable conservation management

The achievement of this objective will be measured by the success of the training program in protected area management of the personnel and field staff of the MWF as well as the systems used at the central and local levels for the scientific monitoring of biodiversity and the ecosystems. For each of the activities financed under the project, the following key indicators have been retained:

Training program

- Establishment of seven ongoing training modules (% of DREF personnel trained – Number of staff-day)
- Integration of the modules of protected area management with the training courses offered by ITREF and that of ENFI (Number of staff-day)

Research program

- Implementation of scientific monitoring studies in the project sites (3 surveys/year)
- Establishment of 6 programs in biodiversity and ecology
- Implementation of studies on the preservation of biodiversity (number of maps)

Database program

- Establishment of a databank on biodiversity (BDNB)
- Establishment of a GIS (3 maps/reserve)

Training and public awareness program

- Written, audio, and video presentations completed (30)
- Educational program for schools is put in place (40 facilitators mobilized/year and 200 classes equipped)
- A grants program aimed at financing projects of NGOs is put in place (20 projects approved/year)

Indicators of Biodiversity

	Toubkal N.P	Al Hoceima N.P	Haut Atlas Oriental N.P	RESERVES
<u>Flora/Vegetation</u>				
1. Specific vegetative diversity	X	X	X	All the reserves (except, according to the results of the development plans : Jbel Moussa, Chekhar, Khnifiss)
2. Estimation of the vegetative biomass (in managed and non-managed land)				
3. Rate of regeneration in managed land	(<i>Juniperus thurifera</i>)	(<i>Quercus rotundifolia</i>)	(<i>Cedrus atlantica</i>)	<i>Juniperus phoenicea</i> (Jbel Krouz) ; <i>Juniperus thurifera</i> (Jbel Bou Iblane) ; <i>Cupressus atlantica</i> (Arhbar)
<u>Fauna/Wildlife</u>				
4. Estimation of the aoudad population	X		X	Jbel Krouz , and possibly Jbel Bou naceur
5. Area of distribution				
6. Gazelle count			(<i>Gazella cuvieri</i>)	Chekhar, Jbel Krouz (<i>G. dorcas</i> et <i>G. Cuvieri</i>)
7. Demographics of the Barbary ape	X		X	Jbel Moussa, Bou Hachem, Tichoukt, Tamga
8. Food availability of the Barbary ape				
9. Reproducing pairs of day raptors	X	X	X	All reserves (except Khnifiss)
10. Avifauna sample (land managed and non-managed)	X	X	X	All reserves
11. Reproducing osprey/Audoin gull pairs		X		
<u>Maine environment</u>				
12. Diversity of global species		X		Jbel Moussa, Khnifiss
13. Diversity of rare species				

ANNEX 2

A. Detailed project description.

1. The project would assist the Government of Morocco with the establishment of a system of protected area management through (a) implementation of protected area management plans at key sites together with local communities, and (b) capacity-building at central and local level to assure sustainable ecosystems management and monitoring (see Annex 2 B for a description of the selected Parks and Reserves). The project has four principal components.

National Capacity-Building (US\$3.5 million)

2. The objective of this component is to strengthen the institutional capacity of MWF and the other main actors, in particular research and training institutions, in sustainable management and conservation of protected areas in Morocco. The component is four-pronged: (a) support to project management; (b) training programs; (c) study and scientific follow-up program; and (d) establishment of a georeferenced database on biodiversity in Morocco.

3. Project management and monitoring (US\$1.0 million). This activity would strengthen the department of Parks and Nature Reserves within the MWF. It would finance technical assistance totaling about 45 person-months in monitoring, project technical, financial and procurement management, revision of regulations and institutional arrangements for protected area management, the implementation review of the project at the beginning of the third year, equipment and vehicles and training and equipment, and software for improved financial management, including the preparation of the Procedures Manual.

4. Training (US\$0.9 million). Broad training to existing forestry staff would be required in the principles of participatory conservation management. Training would be provided to all 170 staff to be involved at the project in the regional forest administrations, at engineer, technician and forest ranger level. An additional 100 staff would be trained in order to allow for staff turnover, and to permit the concepts of conservation management to be integrated more broadly into forest land-use planning. The project will finance the following activities:

- In-service training would comprise six modules: GEF and protected area management (190 trainees), natural resource management (235 trainees) local communities and valuing the environment (200 trainees), and education in interpretive park management (235 trainees).
- Initial training in conservation management would be provided to forest students (200 trainees), and would comprise field training and theoretical training.
- Training of Trainers. Training would also be provided to forest trainers through a contract with a specialized training institution, in order to ensure that appropriate pedagogical methods are adapted to the needs of the programs. Within the ministry the Office of In-Service training would provide coordination and assistance.

5. Ecosystems Evaluation and Monitoring (US\$0.9 million). This is a program of scientific monitoring of the ecosystems and species of the protected areas and reserves, in order to develop and refine effective scientific conservation management strategies (see details in Annex on research). Specifically it would:

- Develop methods for conducting scientific inventories of the ecosystems of the protected areas and reserves supported through the project, building on existing data bases;
- Establish the taxonomy of individual species, using molecular biology, in order to characterize the genetic diversity of these species, and as the building block for developing detailed programs for in-situ genetic resource conservation.

6. The project would also utilize existing databases established by French and Spanish research institutes, through twinning arrangements if necessary. The program would be undertaken by the Unit of Biodiversity Monitoring within the Scientific Institute, which works in close cooperation with the forestry administration. The National Forestry Research Center also has a small ecological department; it would be supported through the project, in order to strengthen its capacity for carrying out field research. The first study concerning the SIBE's inventory will be carried out by the Unit of Biodiversity Monitoring. The preparation of the implementing procedures for the other studies and cooperation between the different institutions will be the responsibility of the technical assistant in charge of research, who will be recruited for a period of 36 staff-month within the Nature Protection Service.

7. The project will also finance the strengthening of the National Center for Forestry Research (Centre National de la Recherche Forestière), by acquiring vehicles and research equipment in order to increase both the amount of scientific developments of *SIBEs* and MWF capacity to realize environment and biodiversity research activities.

8. Data base and geographic information systems program (US\$ 0.7 million). This program to set up a protected areas monitoring and evaluation system in Morocco, focusing on the establishment of a data base on protected areas, in particular the ones concerned by the project, based on a geographic information system (GIS).

- The data base implementation will require Moroccan and international specialized assistance for conducting preliminary studies and modelling development. The project includes computer equipment whose norms will depend on procedures defined by its creators. Training for users is included. The information will be incorporated into the data base as of the start of the project, as Morocco already has a very important basis of works already implemented regarding biodiversity and ecosystematic studies, which will translate into data identification and acquisition, in collaboration with the different Moroccan and foreign sources concerned. The data base localization will be finalized by the first year with the research technical assistant support to be recruited.
- The computerized master plan includes a GIS technical unit under MCEF Computer Services. This unit will be supported by the project which will finance technical assistance for the creation of a protected areas follow-up GIS, in connection with the different data base already existing, training of the system users at central and regional level, and acquisition of GIS equipment required to implement the system.

Protected Area Management: National Parks (US\$7.6 million)

9. Through this component the project aims at three general objectives: (a) manage and rehabilitate the most threatened and biologically most interesting habitat and species; (b) help to enhance natural resources through ecotourism development; and (c) develop and implement rural development plans compatible with conservation objectives with users communities. For each of these objectives, the project will finance a set of activities and operations grouped under three components: ecosystem management and rehabilitation, ecotourism and participatory rural development. During the first two years, the project would support activities in Toukbal and Al-Hoceima National parks, and depending on the success of these operations and the implementation review schedule for the beginning of year 3, it would support conservation management in Haut Atlas Oriental National Park from year 3.

Toubkal National Park (US\$3.1 million)

10. Ecosystem management and rehabilitation. The project would support two programs:

- The first program relates to forest and vegetation and includes: (a) Atlas cypress, *Cupressus atlantica* (regeneration of 500 ha and preservation of 65 ha); (b) classifying and protection of ash and willow trees; (c) preparation and implementation of a park-wide forest conservation plan, together with local communities; (d) introduction of agroforestry (50 ha in the Tifni valley); and (e) wood plantations for village use on about 60 ha.
- The second program relates to fauna and will focus on: (a) Aoudad (*Ammotragus lervia*) and its habitat, and protection of the species in the Takherkhort reserve within the park; (b) monitoring and protection of habitat of the

barbary macaque (*Macaca sylvanus*); and (c) inventory and monitoring of carnivorous mammals and raptors, together with protective measure including elimination of feral dogs, termination of animal poisoning, better herd protection and compensation for loss of troops to protected carnivores.

11. Ecotourism. The project would support training of 8 local guides, creation of thematic paths; publication of brochures, management and control of visitors to the park, an inventory of footpaths, installation of signposts, and creation of a rural lodging association.

12. Participatory rural development. Activities would be developed as part of the conservation management plan and with the participation of the local populations. Priority activities identified for the first year, as result of participatory action planning undertaken during project preparation, would include: rehabilitation of water wheels and diversion channels from stream bottoms; support with production of fodder and animal health, and with wood plantations.

13. In order to execute these activities, the project will also finance the Park Management equipment and the basic infrastructure required in three sectors (Tassa Ouirgane, Imlil, Setti Fadna).

Al Hoceima National Park (US\$2.4 million)

14. Ecosystem management and Rehabilitation. The two programs to be implemented include Forest and Vegetation for the first one and Fauna for the second one.

- Forestry and vegetation restoration including: restoration and protection of oaks (100 ha); protection of Barbary thuya (*Tetraclinis articulata*) forests, with reforestation of 150 ha per year; preparation of a detailed reforestation plan; and village plantations (60 ha) (US\$0.28 million)
- Wildlife conservation including: census, monitoring, and management of marine bird life including the osprey (*Pandion haliaetus*); Audouin's gull (*Larus Audouinii*) and the herring gull (*Larus cachinnans*); a study of marine ecosystems including preparation of a detailed map indicating the incidence of flora and fauna, and leading to a conservation management plan for threatened species; an inventory and monitoring of raptors and carnivores, with conservation management measures including control of the use of strychnine and elimination of feral dogs, and reduction in the population of wild pigs, which is damaging agriculture (US\$0.26 million).

15. Ecotourism. The project would support: training of 6 local guides, footpath relocation, a study of tourism development, preparation of a charging system for tourists, camp site rehabilitation, and a boat for scientific expeditions.

16. Participatory Rural Development. Activities would be developed as part of the conservation management plan and with the participation of the local populations. Priority activities identified for the first year, as result of participatory action planning undertaken during project preparation, would include: water wheel rehabilitation, pumps of irrigation wells, terrace and gabion rehabilitation, and management of wild pigs (see above).

17. In order to execute these activities, the project will also finance the Park Management equipment (vehicles and equipment) and the basic infrastructure required in two sectors (Cala Iris and Rouadi).

Eastern High Atlas National Park (US\$2.1 million)

18. Ecosystem management and restoration. The project would support:

- Forestry and vegetation management including: mapping of the status of the cedars of the park, and pilot regeneration programs, protection of cedars on Jbel Hayim (170 ha) with silvicultural treatments, census and

organization of populations having the right of use to the forest of Jbel Sloul (4000 ha), and village plantations (in Aberdouz).

- Monitoring and management of the wild sheep population, monitoring and management including: pasture management for Cuvier's Gazelle (*gazella cuvieri*), evaluation of the population and ecosystems needs of the barbary macaque (*macaca sylvanus*), monitoring of raptors and carnivorous mammals, and protection of lake birdlife and otters in the Imichil lakes, protection and restoration of reeds and ecotourism management of the lakes.

19. Ecotourism. The project should support training of four local guides, establishment of sign posts, organization of local lodging providers, and identification of tourist horse trails.

20. Participatory rural development. Since detailed management plans would be prepared and implemented for the park only in the third year of project implementation, after the project implementation review, participatory rural development planning has not yet begun. Preparatory work would likely begin in the second year of project implementation.

21. In order to execute these activities, the project will also finance the Park Management equipment and the basic infrastructure required in three sectors (Tirrhist, Imilchil, Outarbat).

Protected Areas Management: SIBES-Reserves (US\$3.9 million)

22. The 10 sites concerned by the project represent a set of varied ecosystems among the most deteriorated or the most important in Morocco. The implementation of a sustainable development for these SIBES integrating the needs of the population is a sine qua non condition for the success of protected areas management. There are four different subcomponents: ecosystem management and rehabilitation, ecotourism, participatory rural development and basic equipment. 22. Support to SIBES would start with Aghbar during the first year (a draft development plan has already been prepared), Jbel Moussa, Tamga, and Khniffis during the second year, Bou Iblanem Bou Nacer and Tichoukt during the third year and Bouhachem, Jebel Krouz and Chekar during the fourth year.

Ecosystem management and restoration

23. This sub-component includes planning and management studies that must be conducted with the local population participation. These planning and management studies generally include: (a) exploration of site wildlife and flora in order to deepen the knowledge on each ecosystem, (b) ad hoc regulations concerning camping or tourism activities on the site, (c) forestry planning and processing studies, (d) research and experiments on species regeneration such as Zen Oak (*Quercus faginea*) or Atlas Cypress (*Cupressus atlantica*). These planning and management studies include an important socio-economic component aiming at having a better knowledge of the user population and so preparing the tasks related to the participative rural development sub-component.

24. The implementation of planning studies is also included in this sub-component and mainly corresponds to the following activities: (a) forestry species regeneration and reforestation, (b) fencing for zones to be specifically protected, and (c) caretaking of fenced areas or their access forbidden to grazing. This component also includes a program on aoudad, Barbary macaque, raptors and large mammals, and the implementation of an observatory for ground birds and marine animals.

25. The selected sites are highly claimed and used by the population. It is therefore impossible to preserve them entirely and, for the ecosystem protection to succeed, it is necessary to transform them into participatory spaces among user population and agents in charge of management.

26. Actions relating to participative rural development have therefore a major role in this project implementation. They will translate into community development plans in agricultural areas and into range management plans in pastoral areas. In this last case, development work will be done in participation with user groups (i.e. pastoralists)

27. The participatory approach will gradually include the different villages or users groups as the project develops. First steps are needed to establish participating groups. The work will then proceed with a priority group before executing the action plans. Work with the second group will start afterwards. Two sites only do not belong to such a program. One is Jbel Moussa where problems of development and urban planning are much more important, and Jbel Chekhar whose boundaries need to be demarcated again.

28. Rural development actions will be specific to each situation. They will cover the following aspects: (a) range management and improvement, (b) animal health, (c) honey production development, (d) irrigation development in some sectors, (e) arboriculture development, and (f) local resources development (especially fishing resources).

Ecotourism

29. This sub-component aims at promoting site tourism by conducting studies to: (a) define new touristic products (circuits, implementation of lodging, identifying transport possibilities, etc...) with local partners; and (b) promote these products with national and foreign agencies. This component will involve NGOs able to take over local development and be a partner to populations and administrations or do a feasibility study on a nursery opening.

Basic Equipment

30. This will consist of strengthening the physical means available to field teams in charge of management, implementation and follow-up of proposed actions as well as monitoring. This strengthening will relate to: (a) procurement of three radio equipment allowing rapid information dissemination; (b) fire control implementation; and (c) building construction (administrative offices and housing).

Public Awareness and Education (US\$0.7 million)

31. The public awareness program is intended to inform the Moroccan public at large and the project population in particular, on aspects related to biodiversity, sustainable development and protection of wildlife and flora. The awareness activities will aim in particular at the following public: population of participating villages, primary school teachers and pupils, elected local authorities, technical and administrative staff, educational staff and public at large. Awareness will be implemented through a set of complementary activities.

32. The project would support promotion of public awareness about conservation management in general and the project in particular at national and local level through:

- Radio and television emissions using the "spot" or short public-interest announcement approach to convey biodiversity conservation messages, through contracts with a production agency. There is already experience with this approach in Morocco. It is expected that the project would fund daily television "spots" for three months every year through the project life, and twice daily radio spots also for three months per year;
- Small grants to local NGOs for biodiversity conservation, public awareness and education (US\$ 0.55 millions), initially at Toubkal and AL-Hoceima. NGOs would be selected in a competitive basis, and would put forward proposals which would need to meet certain criteria to be funded. The financial management of the programme would be contracted to an "umbrella" NGO in each area.

B. Project Area

33. The project will be implemented in three national Parks and in ten Reserves. The selection of these areas has been made among the National Strategy priorities and is representative of the country's bio-ecological and socio-

economic conservation and sustainable development problems. The three National Parks and ten Reserves constitute the most significant ecosystems of the littoral Rif (Al Hoceima and Jbel Moussa NP) and Rif Middle-Atlas (Bouhachem), Western High-Atlas (Toubkal, Tamga and Aghbar NP) and oriental (Eastern High-Atlas NP), Middle-Atlas (Tichoukt, Bou Nacer and Bou Iblane), steppes and Saharian Atlas (Jbel Krouz and Chekhar) and Southern Atlantic (Khniass).

National parks

Toubkal National Park (38,000 ha)

34. Toubkal National Park is located in the Central High Atlas and encompasses the highest summits in North Africa with altitudes varying from 1,500 to 4,167 m, and rainfall from 300 mm to 800 mm. This park includes a varied and unusual flora, including 145 species endemic to Morocco, of which at least 20 are endemic to the National Park. The majority of the endemics are at high altitudes above 2600m. The park also includes mountain juniper forests (*Juniperus thurifera*), which attains its maximum altitude in Morocco of 3200m. The dense oak forest, both cork (*Quercus faginea*) and holm oak (*Quercus rotundifolia*), is found only in the Takherhort reserve, and is well conserved. A major part of the park is steppe and xerophyte. The park was created in 1942 and comprises delimited Government forest land with land-use existing park management structure.

35. Fauna. The fauna is characterized by the presence of an important population of Aoudad (*Ammotragus lervia*), around 300 to 400 animals, which is actually in expansion from the population of the Takherhort reserve. The park includes large or rare mammals (wild sheep, wild cat, porcupine), and several threatened or endangered raptors (golden eagle, lammergeier). The southern-most population of monkeys is found in the high Ourika, which are threatened by the degradation of the environment. The bird-life, due to the altitude and the variety of the surroundings is rich, with around 95 species of nesting birds, among them the rare white rumped swift (*Apus caffer*). The lake of Ifni, the highest in Morocco, is home to otter (*Lutra lutra*) and trout (*Salmo fario*).

36. Human occupation and production systems. The population of the peripheral zone was estimated, in 1993, to be around 32 000 people in approximately 100 *douars*. In the central zone there are no permanent residences. The population growth is estimated at 2% a year, the rate of emigration at 0.4% a year. Density of the population is estimated at 46 people/km².

37. The northern part of the national park is delimited as state land, while that in the south is not delimited. Production systems are heavily dependent on the exploitation of natural resources. The central zone of the park serves as important summer grazing for populations in the vicinity. The village lands include: (i) flood areas; (ii) watersheds; and (iii) rangelands in the higher areas. In some areas transhumance livestock rearing is the main system of production.

38. A large part of the park is used for pasture for livestock during summer and is under threat by over-utilization, especially some forested areas, whose regeneration is hampered by trampling or browsing. Even the Takherhort integral reserve is sometimes invaded by sheep and goats during the drought periods. Wood collection is an important activity, which provokes degradation of the forest cover or xerophytic bushes, and disturbance of some areas. Erosion threatens more and more areas of the park. Poaching, especially of Barbary sheep, is more or less controlled, but feral dogs are regularly found in the Takherhort reserve.

39. The project will implement management plans covering 45,128 ha divided in the following zones: (a) Protection of natural zones in Takherhort, 1562 ha corresponding to the old aoudad reserve, with an extension; Tizi Mzik (thuriferaie 65 ha); gorges of Assif Tinzer, 107 ha and Lake Ifni, 76 ha; (b) Natural sanctuaries managed in the extension zone of the aoudad. (4998 ha), of mountain juniper forest of Assif n'Ouarou, (308 ha), Tizi Oussem-Tizi n'Tzikert, (117 ha), Amenzel-Tamatert (1513 ha) and the oaks of Assif Tinzer (904 ha); and (c) A zone of natural resources covering 34,297 ha.

Al Hoceima National Park (48,000 ha)

40. Flora and Fauna. The park is in the province Al Hoceima, on the north-western Mediterranean coastal area. Its altitude varies from sea level to 747 m. The largest biodiversity interest of the park is marine based. The initial justification for the creation of the park was the marine bird-life. The osprey (*Pandalion haliaetus*) comprised 33 couples in 1992, with an important concentration in one sector giving the notion of a colony, unique in the Mediterranean for this species. Marine life is particularly rich, with 86 species of fish, 3 species of dolphins regularly observed. Red coral is also found. Although rarely seen in the park, some seals have been observed from time to time. At least 60 bird species also live in the park. Al Hoceima National Park is a refuge for many rare marine and bird species, and is highly threatened by planned coastal development. The decree for creation of the park is currently being prepared. The park includes forest land and some collective and private land.

41. Human occupation and production systems. The population in the park is estimated at 14,800 in 36 douars, with an estimated 52 persons/km². A census update in 1994 confirmed a decrease in the population in these zones. An additional 32, 000 people live around the park.

42. Water resources in the central zone of the park are very limited and populations are organized into private and collective groups around water sources.

43. Each *douar* and each family has a combination of production activity and revenue generation activity. Emigration to the towns and overseas complements revenue. The economy of each village is characterized by different weights by each of the principal activities. The production systems use traditional techniques, which are characterized by the intensive use of rare resources, in particular irrigable land, and extensive utilization of abundant resources such as, grazing, and marine resources. However, the emigration is lessening of pressure of natural resource use.

44. Threats include: Intensive fishing, which may deplete the breeding stock; Use of forbidden techniques (dynamite, deep-sea fishing with air bottles, small-gridded nets, trawl-nets near the coast) and motor-boats, which disturb the breeding grounds of both sea species and birds; Pollution (garbage); Uncontrolled tourism and urbanization. On the ground, threats include: erosion, excessive harvesting of natural resources (firewood, alfa, dwarf palm tree, eggs,...) and overgrazing. There is a hunting area (4,000 ha) for wild boar and partridge in the proposed park. Rock and sand extraction is being done in several sites.

45. The management plan of the park proposes the establishment of a national park covering 48,140 ha, of which 19,540 ha are in a marine environment and 28,540 ha are terrestrial. The proposed zoning is as follows:

- Marine including: 3 coastal reserves of 240, 760, and 290 ha; 2 coastal sanctuaries of 240 and 320 ha; a natural resources zone of 17270 ha including access to fishermen;
- Terrestrial including: 5 reserves of 60, 1730, 480, 700, and 390 ha, including the coastal sectors (nesting zones of marine birds), and some areas of vegetation of special interest; 3 sanctuaries of 350, 590, and 320 ha; 1 natural resources reserve, ex regional hunting reserve, of 2510 ha; and a zone of natural resources of 21,790 ha.

Eastern High Atlas National Park (52,500 ha)

46. Flora and Fauna. This park is situated in a mountainous region provinces subject to Atlantic and Saharan influences, with altitudes varying from 1650 m to 3077 m. Rainfall varies 200 mm to 700 mm. This national park has a mosaic of vegetation populations, from dense forest to steppes. Dominant ecosystems are based on the Atlantic cedar (*Cedrus atlanticus*), horn oak (*Quercus rotundifolia*), the Maghreb mountain pine (*Pinus pinaster maghrebiana*, endemic to Morocco), Aleppo pine (*Pinus alepensis*), ash (*Fraxinus dimporpha*), high altitude xerophytic shrubs, and alfa (*Stipa tenacissima*). There are over 50 rare and endemic species.

47. Fauna include the Aoudad (*Ammotragus lervia*) Cuvier's gazelle (*Gazella cuvieri*), Barbary macaque, (*Macaca sylvanus*), otter (*Lutra lutra*) and golden eagle (*Aquila chrysaetos*). As the park is at the crossroad of several bioclimatic regions, the variety of birds is very large, and the park hosts many species of international importance, including resident aquatic species such as the black-necked grebe *Podiceps nigricollis*, several ducks and related species, who find here several major nesting sites at the limit of the arid areas; 4 endemic reptiles have been found in or nearby the park, as well as 3 more endemic sub-species. Several rivers originate in the park and its watershed protection value is important. Population density is low; nevertheless, there are threats. These include: cutting branches and tree tops (where browse is more palatable) to feed the livestock during winter, and collection of live branches for firewood; the traditional pasture rotation system, increase local populations; and forest officers. Use of strychnine to destroy jackals (*Canis aureus*) has also had a disastrous effect on large carnivores (mammals and birds of prey). Vultures have disappeared from the area. Contamination with other pesticides used to control cricket populations nearby is another serious threat here.

48. The cedars and maritime pine are often very degraded, and in rapid regression, with the exception of some cedars, like those in the north of Jbel Hayim, and the oaks of Aberdouz, which are well conserved.

49. One of the major reasons, that the park was created is the existence of an important population of aoudad (*Ammotragus lervia*), of around 200 animals, which are contiguous with other groups to the south of the park. In the eastern limits of the park, a remnant population of the highly threatened Cuvier's gazelle justifies an extension of the park. Boundaries.

50. The bird populations are rich with almost a 100 nesting species, while there are at least 30 reptile species. Lake Tislit also is home to a varied fauna.

51. Human occupation and production systems. The zone in which the project will operate has 37 *douars*, 3275 households and some 18 500 habitants. The *douars* are mostly situated in the buffer zones of the park. There is little population growth. In the park the population density is relatively weak, around 4000 habitants, partitioned between 6 *douars*, with about 6.2 people/km². Road transportation and health facilities are limited. With regards to the judicial statute, the park is in large part state land. Forests lands, delimited, cover approximately 18 500 ha, about 36% of the total area of the park. The state lands, not delimited, cover very degraded sub-forestry areas.

52. The main systems of production are animal husbandry, irrigated agriculture and wood collection, all of which are highly linked to the availability of natural resources and infrastructure. The project will implement management plans covering a proposed 55 252 ha partitioned as follows:

- protected zones of Jbel Fazzaz 1130 ha and of Smad 990 ha (Aoudad), Jbel Hayim 170 ha (with Atlantic cedars) and Idouwa 1482 ha (Cuvier's gazelle);
- nature sanctuaries of Jbel Tazigzaout 1673 ha, Jbel Fazzaz 2286 ha (proposed for the conservation of the forest), and Jbel Aberdouz 3370 ha (proposed for Aoudad); and
- a natural resources zone of 42 191 ha.

Reserves

Rif Ecosystems

53. Jbel Moussa. The reserve would cover 4000 ha on the littoral Mediterranean with a mountainous relief, representative of oak forests (*Quercus suber*, *Quercus coccifera*), with high floristic endemism. This site provides a major resting ground for migratory birds. The reserve is part of a region which is fairly densely populated. The population directly concerned in the project area is approximately 5,000 people. The main menaces to this site are the pollution, urbanization, "wild" tourism, collection of bird's eggs and fires.

54. Jbel Bouhachem. This reserve would cover 8000 ha in the Rif mountains, with a sylvaic ecosystem unique to Morocco, a high biodiversity and an exceptional number of amphibians, comprising 9 of the 11 species in Morocco. The borders are densely inhabited, approximately 7000 people, with a high level of poverty and traditional activity and pastoralism. The exploitation of the forest (wood, charcoal and poaching) and the planting of cannabis on fragile terrain constitute sources of revenue as well as threats, as does tourism in 4X4 vehicles and fires.

Ecosystems of the Middle-Atlas

55. Jbel Bou Nacer. This reserve would cover 14 000 ha in a mountainous massif rising to an altitude of more than 3,400 m including the highest mountains of the Middle Atlas, with high altitude xerophytic ecosystems, holm oak, Magreb maritime pine and Atlantic cedars, Aleppo pine, juniper and alfa. The reserve has a high floristic endemism, including high biodiversity. The reserve also has a large variety of environments conducive to mammalian habitation. The population around the jbel are in regression, moving towards the plains and the irrigated perimeters. Intense pastoral use is in the north and east of the reserve.

56. Jbel Bou Iblane. The reserve would cover 12 000 ha of mountainous terrain, (over 3000 m) in the eastern High Atlas, representing an ecosystem of Atlantic cedars and of the northernmost mountain juniper forest in Morocco. The reserve has remarkable bird life and reptiles of high biodiversity. The population is composed of large livestock owners, clandestine exploiters of wood and small agro-pastoralists. Deforestation and illegal cutting of wood are also frequent.

57. Jbel Tichoukt. The reserve would cover an area of 12,500 ha with a relief of 2700 m in the Middle Atlas. The reserve has a sizeable flora, constituting a bio-geographic zone of transition. The presence of Barbary macaque, small mammals, birds, a reptiles and a tropical fauna of aquatic invertebrates add to the biodiversity interest. The user population is in the order of 3,000 to 4,000, and owns goats and sheep. The summer grazing lands are managed by the user populations according to a flexible organization characteristic of the pastoral system. The wood requirements for heating and cooking are from the reserve. The population also hunts and exploits the reserve for medicinal and aromatic plants (thyme, juniper berry and thuya).

Ecosystems of the High Atlas

58. Tamga. Situated north of the High Atlas in middle altitudes and enclosed valleys, the reserve would encompass 8,500 ha and represents a pine ecosystem remarkable for Morocco. There is an interesting holm oak forest with exceptional regeneration, inhabited by the Barbary macaque. The faunal endemism and the biodiversity is high. The site is partially occupied by agricultural land. The concerned population is around 15,000, with a troupe of 50,000 head of sheep, which are the principal source of revenue. High pastures are used in the summer, and the animals are enclosed in the winter. Fuelwood cutting and collection of plants for perfume are also important economic activities.

59. Aghbar. This reserve would cover 6,500 ha situated in the west of the High Atlas in middle altitude and enclosed valleys, with unusual Atlantic cypress ecosystems, and rich in small fauna and reptiles. The population is around 4 500, partitioned between 17 *douars*. Sheep-herding is the predominant activity, and there is out-migration.

Ecosystems of the steppes and the Saharan Atlas

60. Chekhar. The reserve has a semi-arid climate, with thuya and oak forest, and a plantation of Aleppo pine. The reserve covers an area of 10 000 ha with varied morphology and steep escarpments. The reserve is relatively degraded, with the alfa under strong pastoral pressure. Dorcas gazelle are present in the reserve, amongst other steppe species. The reserve is on the Algerian frontier, inhabited by a population of ex-miners and agro-pastoralists, and is characterized by a high rate of poverty.

61. Jbel Krouz. This reserve would constitute an area of 60 000 ha, representative of Phoenician juniper and alfa ecosystems, and is situated in the mountainous massif of the Saharan Atlas. The important pre-Saharan fauna is composed of Aoudad, dorcas and possible Cuvier's gazelle. Close to the Algerian frontier, the site is inhabited by approximately 1300 families of nomadic livestock herders. The principal use of the reserve is for fuelwood and secondary pasture. Poaching is decreasing since a hunting reserve has been established.

Littoral Atlantic Saharan ecosystem

62. Khniouss. This reserve has an exceptional landscape with remarkable species. It is a resting ground for aquatic migratory birds, including the slender billed gull (*Larus genei*) and the common tern (*Sterna hirundo*), the only site in Morocco for the two species. It is classified as a Ramsar site. The specific richness of the site is remarkable from lagoon to terrestrial level, with the presence of numerous endemic species, in particular reptiles and amphibians, terrestrial flora and micro-mammals. The human activity is partially regulated and includes traditional pastures of the Mejjat and the Lamiar, fishing, extraction of salt by cooperatives, aquaculture tourism and research.

Populations in and around the national parks and reserves

Park	Population inside	Douars/Households	Population around	Douars/Households
Al Hoceima	14.800	36	32.000	58
Haut Atlas oriental	4.000	6	14.500	37
Toubkal	No permanent Residences	0	32.000	100
Jbel Moussa	3.953	794	1.197	229
Jbel Bouhachem	No residences in park	0	7040	1.148 households
Chekhar	4.507	635 households	n.a.	
Jbel Krouz	9.014 (incl. 7.121 nomads)	1.245 (incl. 947 tents)		
Jbel Tichoukt	No dwellings	0	3881	704 households
Bou Naceur	n.a.	n.a.	11704	1.658 households
Bou Iblane	2.057	356 Households	n.a.	n.a.
Tamga	n.a.	n.a.	11.712	2.840 households
Aghbar	4.332	17	n.a.	n.a.
Khniouss	Unknown			

**Other SIBEs (National Parks and Reserves) Indirectly Involved in the Project
 (Training, Studies and Database Components)**

SIBE	Size (ha)	Bio-ecological value	Program
Talassemtane National Park	64,600	Unique site of <i>Abies marocana</i> , + reptile great diversity	European Union
Ifrane National Park	54,000	Largest forest cover in Morocco (Cedars-Oaks)	AFD/FFEM
Tazekka National Park	12,000	Species biogeographic limit – forest massif with <i>Cedrus atlantica</i>	GTZ - FAO
Souss Massa National Park	38,800	World unique colony of <i>Geronticus ermita</i>	GTZ - KFW
Jaaba	1,800	Finest Zen oaks in Morocco	AFD/FFEM
Aghbalou n'Arbi	14,000	Site nidification + - important deterioration	AFD/FFEM
Jbel Gourougou	Not defined	Rare site with biologic recovery	FFEM
Jbel Sargho	Not defined	Biogeographic limit with very diversified habitatdiversifiés – much threatened	PNUE
Moulouya	2,700	No equivalent biologic quality for this littoral	MEDWET
Sebkha Bou Areg	14,000	Unique lagoon zone of this littoral	FFEM
Cap 3 fourches	8,000	Remarkable fauna (including <i>Monacus monacus</i>)	FFEM
Merja Zerga	7,000	Most important lagoon with high biodiversity – RAMSAR site	MEDWET
Sidi Bou Ghaba	800	Exceptional bird fauna	Biologic Reserve
Archipel Essaouira	27	Unique insular environment plus rare hawk species	Biologic Reserve
M'Sabih Talaa	1,900	Gazelle reserve, perhaps unique sub-species	Biologic Reserve
Aguelman Afenourir	3,800	RAMSAR Site	AFD/FFEM

Annex 3

Estimated Project Costs (US\$ million)

Project Components	Local	Foreign	Total
1. National Capacity Building	1.8	1.4	3.2
2. National Parks (<i>SIBE/Parcs</i>) Management Plans	4.5	2.3	6.8
- Al Hoceima National Park	1.5	0.7	2.2
- Eastern High Atlas National Park	1.2	0.7	1.9
- Toubkal National Park	1.8	0.9	2.7
3. Reserves (<i>SIBE/Réserves</i>) Development	2.8	0.7	3.5
4. Public Awareness and Education	0.5	0.1	0.6
Total Baseline Costs	9.6	4.5	14.1
Physical Contingencies	0.2	0.3	0.5
Prices Contingencies	0.8	0.3	1.1
Total Project Costs	10.6	5.1	15.7

Project Components by Year (Including Contingencies) (US\$ million)

Project Components	2000	2001	2002	2003	2004	2005	2006	Total
1. National Capacity Building	0.01	0.39	0.7	0.99	0.81	0.42	0.18	3.50
2. Protected Area Management								
- Al Hoceima National Park	0.01	0.27	0.48	0.68	0.56	0.29	0.13	2.42
- Eastern High Atlas National Park	0.01	0.23	0.43	0.6	0.49	0.26	0.11	2.13
- Toubkal National Park	0.01	0.34	0.62	0.87	0.71	0.37	0.16	3.08
3. Reserves (<i>SIBE/Réserves</i>) Development	0.01	0.42	0.77	1.09	0.89	0.46	0.2	3.84
4. Public Awareness and Education	0.00	0.08	0.14	0.2	0.16	0.08	0.04	0.70
Total	0.05	1.73	3.14	4.43	3.62	1.88	0.82	15.67

N.B. For further details, see COSTAB tables in the Borrower's Project Implementation Plan (PIP)

Annex 4

Incremental Costs and Global Environment Benefits

Overview

1. The objective of the GEF Alternative is to strengthen the national system of protected areas in Morocco and promote sustainable conservation management, with increased participation of local populations, within the ecosystems of the project-supported areas. The project supports, through relevant project outputs, Articles 6, 8, 11, and 13 of the Convention on Biological Diversity, ratified by Morocco on August 21, 1995.¹ Specific project components include: (a) implementation of conservation management plans in five national and natural parks; (b) preparation and implementation of conservation management plans for selected *Sites d'Intérêt Biologique or Ecologique* (SIBEs); (c) capacity-building for the Forestry Department targeted towards protected areas management; (d) and improved public awareness about biodiversity conservation. The GEF Alternative intends to achieve these outputs at a total incremental cost of US\$12.5 million. The proposed project should be viewed as complementary to existing activities in Morocco.

Context and Broad Development Goals

2. With its unique topography, bordering on the North Atlantic Ocean and the Mediterranean Sea and climatic extremes ranging from the snow-capped peaks of the High Atlas mountains to the arid regions of the Sahara, Morocco contains thirty-nine major ecosystem types. The country is home to an estimated 4,000 plant species, twenty percent of which are endemic; 550 vertebrate species, of which six are endemic, and twenty-two endemic species of reptiles and amphibians. Of these, 1,600 plant species, thirty bird species, and thirty-one reptile species are threatened or endangered, while six mammal species have become extinct this century.

3. Morocco's rich natural and biological resource base is threatened by habitat transformation, fragmentation and degradation. Nearly 70% of Morocco's poor live in rural areas, placing significant pressure on the nation's natural resources. Morocco's forests have degraded through over-harvesting of fuelwood, agricultural expansion, urban expansion, and industrial development. Terrestrial wetlands have been disturbed by agricultural expansion, pesticide run-off, erosion, and eutrophication, while uncontrolled coastal development has threatened coastal and marine biodiversity.

4. The immediate development goals of Government of Morocco include placing the economy on a sustainable high-growth path while simultaneously reducing social disparities, particularly between urban and rural areas. Medium-term priorities include improving natural resource management, implementing a coherent rural development strategy, and building a more effective and efficient public administration. In response, the World Bank's new business compact with the Government of Morocco focuses on several priority areas consistent with the Government's reform agenda, including strengthening environmental management, increasing social and rural development, and reforming the public sector. Programmed activities include developing a plan for natural resources management, particularly for water; implementing mechanisms for integrated environmental management in the most polluted zones of the country; and institutional strengthening of the newly-created Ministry of the Environment. In addition, the Government is finalizing its National Environmental Action Plan.

¹ Article 6: General Measures for Conservation and Sustainable Use; Article 8: *In-situ* Conservation; Article 11: Incentive Measures; Article 13: Public Education and Awareness.

Baseline Scenario²

5. At the national level, Morocco is committed to protect important natural resources and to preserve biodiversity. Towards these ends, in 1993 a Ministry of Environment was established with a mandate for defining strategies and policies and for coordinating and managing the environment sector. In 1994, the Ministry of Environment formulated a National Strategy for Environmental Protection and Sustainable Development as the first strategic document outlining the overall goals and fundamental principals for environmental protection. Presently, the Government of Morocco is in the process of completing a National Environmental Action Plan and National Biodiversity Strategy and Action Plan.

6. In 1990, the Moroccan authorities completed a National Protected Areas Strategy and Plan, with the assistance of the African Development Bank. With the assistance of UNEP/GEF, Morocco is now completing a National Biodiversity Strategy and Action Plan. The BSAP will identify current challenges to the conservation and wise use of the biological resources, including the effectiveness of the laws and institutions. Priorities include identifying how natural resource use is adversely impacting ecosystems and threatening species with extinction. Likewise, the BSAP will provide an important opportunity for Morocco to establish a comprehensive cross-sectoral framework to assist in prioritizing potential investments in the conservation and sustainable use of biological diversity. The Ministry of Environment has confirmed that the proposed project is consistent with the findings of the BSAP and a top priority.

7. Costs. The Government of Morocco, through the Forestry Department, Ministry of Agriculture, and Ministry of Marine Fisheries and the Merchant Marine, is undertaking a variety of programs related to forestry, watershed, and coastal zone management. Specific activities range from reforestation, soil conservation, delineation of property rights, and water pollution cleanup in coastal areas. Likewise, the Government of Morocco has begun to require environmental impact assessments (EIAs) for public investment projects and a legal framework is being established to carry out systematic EIAs. Nonetheless, the negative impact of economic activities in protected areas is unlikely to be affected by such regulations, given that the principal threats in national parks and SIBEs are not affected by large-scale public investments but rather through small-scale agriculture, forestry and tourism activities. Under the Baseline Scenario, it is expected that Government of Morocco expenditures for biodiversity conservation over the FY00-05 period will total US\$7.1 million. This includes US\$1.3 million for "National and Regional Capacity Building", US\$3.5 million for "National Parks Management", US\$2.1 million for "Management and Improvement of SIBEs" and US\$0.2 million for "Public Awareness and Information", through the central Forestry Department (AEFCS) and the regional branches (DREFs) at the regional level. Also, some contributions are expected from the beneficiaries, US\$0.75 million for "National Parks Management" and US\$0.15 million for "Management and Improvement of SIBEs"

8. At present, a number of activities underway by other development agencies are targeted towards natural resource management in general and biodiversity conservation in particular. These include:

- The World Bank Lakhdar Watershed Management Project aims to test, through a participatory approach, improvement of land use and natural resources management in mountainous areas, which in turn will lead to less soil erosion and improve the natural habitat of wildlife. Project components include forest conservation on public lands; soil and water conservation measures on public, private and collective lands; sustainable agricultural development; and capacity building with the AEFCS related to natural resource management. Total project expenditures included in the Baseline Scenario: US\$4.9 million.

² A number of activities will be near completion by the estimated starting date of the GEF Alternative, and thus are not included in the Baseline Scenario. These include the GEF / UNEP Enabling Activities for Biodiversity and three World Bank-financed projects: (i) Second Forest Development Project, which has improved Morocco's forest potential, protected watersheds, and supported institution building for nature conservation in three national parks; (ii) Environmental Management Project, which has strengthened Morocco's institutional and regulatory framework for environmental protection; and (iii) Preparation of the Sebou River Basin Environmental Protection Project, which includes a financial and institutional study of the use of revenues from forestry activities in Ifrane Natural Park. In addition, the African Development Bank's study and strategy for protected areas and management plans for national parks, upon which components of this project build, is now completed and is not included in the Baseline Scenario.

- GTZ/BMZ's community-based conservation management activities in Tazekka, Toubkal, and Souss-Massa National Parks. Total project cost: US\$1.2 million.
- Italian Cooperation/FAO's natural resources management project in Tazek. Total project cost: US\$1.0 million.
- European Union's community-based forest ecosystem management activities in the Chaouen Province, which includes a specific support to Talassemrane Natural Park: Total project cost: US\$3.0 million.
- UNDP/GEF's Regional Mediterranean coastal wetlands project. Project cost: US\$2.8 million (for the Morocco component).
- Japanese bilateral support for addressing marine pollution in the Al Hoceima area. Total project cost: US\$1.0 million.
- UNDP/GEF's proposed Rangeland Biodiversity Conservation Project (Jbel Sagho SIBE). Project Cost: US\$2.2 million.
- Agence Francaise de Developpement (AFD)'s Community Based Rangeland and Forest Ecosystems Management Project (Ifrane Area). Total Project Cost: US\$10 million.

9. The total cost of Baseline Scenario investments of the Government of Morocco and the donor community, as described above, is US\$29.1 million, not including UNDP/GEF projects totaling US\$5.0 million.

10. Benefits. Implementation of the Baseline Scenario will result in limited protection of biodiversity, increased domestic environmental benefits related to forest and watershed management as well as soil conservation, increased participation in conservation, and slight improvement protecting coastal areas in Morocco's forested areas. Likewise, progress will be made in achieving broader development goals related to strengthening environmental management and improved social and rural development.

Global Environmental Objective

11. As a consequence of the current course of action, regarded as the Baseline Scenario, Morocco's protected areas will likely continue to be degraded by overgrazing and poor pasture management, over-collection of forest products by local inhabitants, poorly-managed recreational uses, unregulated development of coastal areas, and high population growth rates within national and nature parks. The long-term implications of these activities includes the steady loss of globally significant biodiversity over the next two decades.

12. Scope. The GEF Alternative would build on the Baseline Scenario by protecting key major ecosystems; conserving highly-threatened remnant ecosystems and species; evaluating the possible re-introduction of selected raptors and mammals; providing opportunities for local populations in and around protected areas; increasing public awareness about biodiversity conservation; and supporting participatory approaches to sustainable natural resource conservation. Principal project areas benefiting from the GEF Alternative include:

- Toubkal National Park, in the Central High Atlas, includes 23 endemic species and rare mammals and endangered raptors in mountain landscapes reaching 4100 m.
- Eastern High Atlas National Park, in one of the most isolated parts of Morocco, contains high value, though not well studied, mountain biodiversity.
- Al-Hoceima National Park, which is part of a flyway for migratory birds and is likewise the home for rare marine species, including monk seals and red coral.
- Ten Sites of Biological and Ecological Importance (SIBEs) which have been selected for their global significance.

13. **Costs.** The total cost of the GEF Alternative is estimated at US\$ 41.9 million, detailed as follows: (i) rangeland and forest ecosystem management - US\$14.9 million (same as Baseline); (ii) marine pollution reduction - US\$1.0 million (same as Baseline); (iii) national parks management - US\$16.35 million (Baseline Financing - US\$9.45 million; *GEF financing - US\$4.9 million; French GEF financing - US\$2.0 million*); (iv) management and improvement of SIBEs and reserves - US\$4.85 million (Baseline financing - US\$2.25 million; *GEF financing - US\$2.6 million*); (v) national and regional capacity building - US\$3.8 million (Baseline financing US\$1.3 million; *GEF financing - US\$2.5 million*); and (vi) public awareness and information - US\$ 1.3 million (Baseline financing US\$ 0.8 million; *GEF financing - US\$0.5 million*).

14. **Benefits.** Implementation of the GEF Alternative would make possible activities and programs that would not have been possible under the Baseline Scenario. For instance, the proposed project will fill one of the key gaps in biodiversity conservation in the Mediterranean region by monitoring and evaluating the status and distribution of species and of ecosystems and facilitating information exchange with other countries. Likewise, while both the Baseline Scenario and the GEF Alternative support biodiversity conservation in Morocco's national parks and SIBEs, with both domestic and international benefits, only the latter option would ensure long-term conservation and sustainable utilization through strengthened on-site management, outreach to and involvement of local communities and local governments, and development of viable approaches to sustainable natural resource use in national and natural parks.

Incremental Costs

15. The difference between the cost of the Baseline Scenario (US\$29.7 million) and the cost of the GEF Alternative (US\$42.2 million) is estimated at US\$12.5 million. This represents the incremental cost for achieving environmental benefits through strengthening policy and legal frameworks for protected areas management, developing mechanisms for sustainable resource use among local communities, and strengthening local and national capacity for conserving globally significant biodiversity. This incremental cost is expected to be financed through a GEF grant of US\$10.5 million and a French GEF grant of US\$2.0 million (Agence Française de Développement being the Implementing Agency).

COMPONENT	Cost Category	US\$ million	DOMESTIC BENEFIT	GLOBAL BENEFIT
Forest Ecosystem Management	Baseline	14.9	Increased flow of forest goods and environmental services. Increased opportunities for income generation for rural communities.	
	With GEF alternative	14.9		
	Incremental	0		
Coastal Zone Management	Baseline	1.0	Reduced water pollution near fishing areas, allowing for increased fishing yields	
	With GEF alternative	1.0		
	Incremental	0		
Conservation Management Plans for selected protected areas	Baseline	9.45		
	With GEF alternative (including French GEF)	16.35		Protection of globally significant biodiversity in three national parks. Increased opportunities for alternative income generation based upon sustainable utilization of biodiversity in buffer zones and protected areas. Increased collection and analysis of information vital for conserving endemic flora and fauna. Meaningful participation of local stakeholders and participatory schemes for sustainable natural resource management.
	Incremental	6.9 ³		
Conservation plan for SIBEs	Baseline	2.25		
	With GEF Alternative	4.85		Protection of globally significant biodiversity at SIBEs. Increased opportunities for sustainable utilization of biodiversity in SIBEs. Reintroduction of rare species which play important roles in maintaining ecosystem integrity in SIBEs. Increased monitoring of globally threatened species.
	Incremental	2.6		
Capacity building for biodiversity conservation	Baseline	1.3		
	With GEF Alternative	3.8		Increased public sector capacity to manage protected areas and SIBEs.
	Incremental	2.5		
Public Awareness	Baseline	0.8		
	With GEF Alternative	1.3		Increased public awareness of issues related to biodiversity conservation and participatory schemes with local NGOs to promote outreach and sustainable natural resource management.
	Incremental	0.5		
Totals	Baseline	29.7		
	With GEF Alternative	42.2 (\$2.0m FFEM)		
	Incremental (GEF only)	10.5		

³ Of which French GEF is \$2.0m.

Annex 5

Procurement and Disbursement Arrangements

Procurement

Procurement methods (Table A)

Procurement under this project will be in accordance with the Guidelines for Procurement under IBRD Loans and IDA Credits, January 1995, using standard bidding documents and contract forms agreed with the Bank. Contract thresholds, modalities, and Bank financing ratios are indicated in Tables A, B, and C of this Annex. Consultants will be selected in accordance with Bank's Guidelines on the selection of Consultants, January 1997, using standard contract forms agreed by the Bank.

As this project will be implemented in a decentralized manner and with the participation of local populations, the large part of the procurement is expected to be in small quantities at any one time. As such, the procurement methods will be implemented in accordance with community participation regulations to allow for flexibility and efficient procedures. As a significant part of the investments to be done under the project will be carried out together with the concerned populations it is not possible to be exact on the amounts in each category and these figures can only be indicative. These amounts have been estimated based on the priorities indicated by those populations included in the socio-economic surveys carried out during project preparation.

Procurement of works, goods and services under the "Community Development" category related to Community Development Plans will be carried out by the executing Regional Directorates of Forestry and Water (DREF), under the Ministry of Water and Forests (MWF). Procurement of goods and services related to the central structure will be carried out by the Project Management Unit (PMU).

Works: Works under the project (about US\$ 5.2 million) are described in Annex 2. These would be carried out with NCB procedures. Small community development works within the framework of PDDs may be procured through community participation.

Goods: Goods comprise essentially of vehicles and various equipment and furniture (about US\$ 1.9million), also described in Annex 2. These will be procured through NCB procedures.

Consultant Services and Training: Also described in Annex 2, these total approximately about US\$ 4.6 million, and will be procured in accordance with the Bank's Guidelines for the Selection and Employment of Consultants by World Bank Borrowers, dated January 1997 and revised in September 1997.

Community Developments

Works not exceeding US\$20,000, and estimated to cost an aggregate amount of US\$1.5 million, may be procured through community participation in accordance with procedures acceptable to the Bank which will be detailed in the Procedures Manual, in order to encourage the employment of local populations. However, where it is judged that neither national bidders nor local populations would be interested in participating in an activity, procurement may be done by force account.

Small Grants Program

The project shall finance biodiversity conservation activities (GEF funding not exceeding \$5,000 per sub-project), to be executed by participating NGOs in the various communities in accordance with procedures acceptable to the World Bank which will be detailed in the Procedures Manual. The program will be managed by a limited number of "umbrella" NGOs, not exceeding three, and implemented in the project national parks areas (i.e. Toubkal, Al Hoceima and Eastern High Atlas National Parks). These "umbrella" NGOs will be contracted by the PMU (MWF) through single source procedures and will be responsible for selecting eligible activities within the project areas. The selection committee comprises representatives from the Administration and a representative from the umbrella NGO concerned, and will meet quarterly to review sub-projects proposals. The PMU will advance the budget allocated to sub-projects to the umbrella NGO concerned, which will act as intermediary for payment of activities to be implemented. The umbrella NGO will charge a management fee of 10% of the funds paid. The total amount allocated to the sub-projects is US\$500,000 and the total management fees for the umbrella NGOs will be US\$50,000.

Prior review thresholds (Table B)

There will be no large Works or Goods contracts. Works and goods valued at more than US\$ 300,000 will be subject to prior review.

For Consultant Services and Training, in the case of consulting firms, for contracts valued at more than US\$ 100,000 terms of reference, shortlists, letters of invitation and contracts would be subject to prior review, while for contract valued at less than US\$100,000, only the terms of reference would be subject to prior review.

In the case of individual consultants, for contracts valued at more than US\$ 50,000, terms of reference, shortlists, letters of invitation and contracts would be subject to prior review, while for contracts valued at less than US\$ 50,000, only the terms of reference would be subject to prior review.

Procurement Plan

A procurement plan is included in the Project Implementation Plan.

Disbursement

Allocation of loan proceeds (Table C)

Allocation of loan proceeds by disbursement categories and percentages financed by the loan are presented in Table C.

Use of statements of expenditures (SOEs):

- Disbursements for contracts exceeding US\$300,000 for works and goods, US\$100,000 for the services of consulting firms and US\$50,000 for the services of individual consultants, and US\$20,000 for community developments will be fully documented. Documentation to support these expenditures would be maintained by the concerned DREFs with copies submitted to the PMU. These documents will be made available for review by Bank missions and for project auditing.
- All other expenditures will be made against statements of expenditures (SOEs)

Special account:

The Borrower will establish a Special Account (SA) in Moroccan Dirhams within the Kingdom General Treasury, to be managed by the SEGMA in conjunction with the PMU to facilitate disbursements. Applications for the replenishment of the SA would be submitted monthly or when one-third of the initial deposit has been utilized, whichever occurs earlier. The replenishment application would be supported by the necessary documentation, including the bank and reconciliation statements of the SA. The SA would be audited by independent auditors acceptable to the Bank.

The initial Authorized Allocation of the SA would be limited to SDR 370,000 equivalent. The maximum Authorized Allocation would reach SDR 500,000 equivalent, representing four months of estimated project expenditures, when disbursements reach US\$2 million equivalent.

Retroactive Financing

During negotiations, a retroactive financing provision in an amount not exceeding SDR 770,000 was allocated to facilitate project start-up.

Table A: Project Costs by Procurement Arrangements
(US\$ Million equivalent)

Expenditure Category	Procurement Method				Total Cost (including contingencies)
	ICB	NCB	Other	N.B.F	
1. <u>Works</u>		5.2 (2.6)			5.2 (2.6)
2. <u>Goods</u>		1.3 (1.0)	0.6 ^{1/} (0.5)		1.9 (1.5)
3. <u>Consultant Services and training</u>			4.6 ^{2/} (4.4)		4.6 (4.4)
4. <u>Community Developments</u>			2.0 ^{3/} (1.5)		2.0 (1.5)
5. <u>Small Grant Program</u>			0.5 ^{4/} (0.5)		0.5 (0.5)
5. <u>Recurrent Costs</u>				1.5 (0.0)	1.5 (0.0)
<u>Total</u>		6.5 (3.6)	7.2 (6.4)	1.5 (0.0)	15.7 (10.5)

Note : N.F.B. = Not Bank-Funded

Figures in parenthesis are the amounts to be financed by the GEF grant

- 1/ To be procured through national or international shopping.
- 2/ To be procured following the Bank's Guidelines for the Selection and Employment of Consultants by World Bank Borrowers, dated January 1997 and revised in September 1997 and January 1999.
- 3/ To be executed through participation of local communities, in accordance with procedures acceptable to the World Bank.
- 4/ For biodiversity conservation activities implemented by NGOs and not exceeding US\$5,000 per eligible sub-project, provided these activities are selected in accordance with procedures and criteria acceptable to the Bank.

Table B : Thresholds for Procurement Method and Prior Review

Expenditure Category	Contract Value (threshold)	Procurement Method	Contracts Subject to Prior Review/Estimated total Value subject to Prior Review
1. <u>Works</u>	All contracts	NCB	All contracts equal or above US\$ 300,000
2. <u>Goods</u>	Above US\$ 100,000 Up to US\$ 100,000	NCB IS	All contracts equal or above US\$300,000
3. <u>Consultants Services and training</u>			
• Firms	> US\$ 100.000	Consultants guidelines	> 100,000 (TORs, short list, LOI and contracts)
	< US\$ 100.000	Consultants guidelines	< 100,000 (TORs only)
• Individuals	> US\$ 50.000	Consultants guidelines	> 50,000 (TORs, Short list, LOI and contracts)
	< US\$ 50.000	Consultants guidelines	< 50,000 (TORs only)

Note: The contracts carried out under community developments and the small grant programs will not exceed US\$20,000 and US\$5,000 per contract, respectively. Concerning eligibility and prior review, the World Bank will have to approve all the PDDs, within whose framework the community developments will be carried out, as well as the eligibility criteria and selection procedures of sub-projects, within the framework of the small grants.

Table C : Allocation of Grant Proceeds

Expenditure Category	Amount in SDR million	Financing percentage
<u>Works</u>	1.68 (2.30)	70%
<u>Goods</u>	1.10 (1.50)	100% of foreign expenditures, 100% local expenditures (ex-factory cost), and 80% of local expenditures for other items procured locally
<u>Consultants Services and Training</u>	2.77 (3.80)	100%
<u>Community Developments</u>	1.10 (1.50)	100%
<u>Small Grant Program</u>	0.40 (0.55)	100%
<u>Unallocated</u>	0.65 (0.85)	
Total	7.70 (10.50)	

Note: Figures in parentheses reflect the US\$ equivalent calculated at the exchange rate of
 1 SDR = US\$1.37207 as of November 30, 1999 (end of month preceeding negotiations).

Annex 6

Financial Management System

A. Assessment of the Financial Management System

1. The financial management system in place in MWF, implementing agency for the project, was appraised during project preparation. The main characteristics of this system are the following:

- The financial management system in place is based on principles and procedures defined by the legal framework applicable to the public sector and more specifically to governmental institutions. This system includes three levels of control before disbursement. The first is the responsibility of the budget unit (*Ordonnateur*), the second occurs at the Ministry of Finance (MOF) level by the budget execution controller (*Contrôleur d'exécution des dépenses*), and the last one is performed by the public accountant (*Agent comptable*).
- The payments are generally centralized at the level of the Kingdom General Treasury (*Trésorerie Générale du Royaume/TGR*) which has a fiduciary responsibility of a supplementary and specific control in case of financing by external resources. Although this centralization aims to reinforce the control of the budget execution, the timing needed for the entire process is long and sometimes affects efficiency. Special disbursement arrangements can be authorized by the MOF for cases where specific revenues are earmarked for particular expenditures, and for treasury operations regulated by law. This includes the creation of special accounts of the Treasury, and the status of "*Service d'Etat Géré de Manière Autonome*" (SEGMA).
- The accounting system is based on the cash basis and the outline of budget components according to decree no. 330-66 of April 21, 1967 which includes basic rules for Government accounting. The "ordonnateurs" and the "comptables" use separate sets of accounts to record their activities: the "ordonnateurs" keep accounts of the commitments they authorize versus the budget, while the "comptables" keep accounts of their cash operations. A reconciliation takes place annually and both situations are submitted to the TGR and "*Cour des Comptes*" for control at their request. MWF's accounting books are maintained manually. Based on the fact that the cash basis system is applied, an analytical/reporting system has been developed separately by some departments for the follow up of their own activities. However, there is still considerable scope for improvement as well as the need to implement a comprehensive Management Information System (MIS) according to the computerization action plan issued in 1998. It should be noted that an integrated computerized management information system is planned but the resources needed have not yet been allocated.
- MWF's staffing seems to be adequate in terms of number and capability. However, there is no official training program for all staff to upgrade their knowledge and skills. Each department is managing its own needs separately.
- The Project Management and evaluation structure is managing many projects through international financing. However, procedures for the execution, monitoring and managing of these projects have to be defined clearly and an adequate computerized reporting system should be implemented in order to produce relevant and timely accounting and financial information related to the projects.

2. Based on the above characteristics of MWF's financial management system, inadequacies were identified as well as a considerable need for improvement to achieve effective implementation of a comprehensive management information system according to Bank procedures. MWF is in the process of addressing several issues related to these problems, but resolution will most likely take several years.

B. Financial Management System for the Project

3. In order to address the financial management weaknesses outlined above, an agreed-upon financial management strengthening plan specific to the project will be implemented. The action plan includes:

Disbursement Legal Status

4. The SEGMA mechanism will be used for the project by introducing the required changes in articles 2, 3, and 6 of the decision ("Arrêté") of the Minister of Finance related to "*Service de la valorisation des produits forestiers*". This will give the MWF an independent status to manage project funds and to implement the project efficiently.

Organization of the PMU

5. The National Protection Service would be the designated PMU of MWF and the official implementing agency for the project. The national director for the project has to be officially designated as the PMU head. He will be responsible for monitoring and evaluation as well as procurement, finance, budgeting, and accounting procedures for the project. He also has the responsibility to appoint qualified staff at the central and regional levels to assist project management, taking into account the level of activity and the segregation of duties according to internal control concepts. To establish an acceptable financial management system, the PMU head will be assisted by a qualified Financial and Accounting Officer. This person will be expected to have knowledge and understanding of World Bank procurement, disbursement, project accounting, financial reporting and auditing guidelines and procedures.

6. Selection of the Financial and Accounting Officer will be based on the following criteria :

- university degree in accounting or finance;
- at least five years experience, preferably with experience in the fields of public and private sector accounting, banking, planning and budgeting, procurement and contract management, and previous or current employment with an agency, managing project with international financing ;
- knowledge of international accounting standards and internal control policies ; and
- basic computer literacy coupled with experience in spreadsheets applications.

7. To establish an acceptable monitoring and management system, each regional office involved in the project implementation will officially designate a coordinator in charge of issuing sub-project accounts and sub-project management reports.

Financial and Accounting Policies

8. Financial and accounting policies for the project need to be developed. These policies are crucial to provide clear financial reference to the various stakeholders and finance staff, ensuring uniformity, and enforcing accountability. These policies, inter alia, cover the following aspects: (a) expenditures which would be treated as project expenditures including their classification; (b) expenditures which would be eligible for reimbursement from the GEF Grant; and (c) project accounting policies. These policies would be gradually expanded and refined to include aspects such as efficient management and deployment of funds and internal control policies. The regional office would comply with the financial and accounting policies of the project by signing a memorandum of understanding.

Project Accounting System

9. The regional offices involved in project implementation would be responsible for project financial management and accounting at the regional level. They would maintain books of accounts for project component which they manage, prepare and disseminate sub-project accounts and regional financial management reports, and

ensure timely transmission of these documents to the PMU's accounting and financial unit at the central level. This unit would be in charge, in close collaboration with the SEGMA, of: (a) the aggregation process; (b) issuing the annual project financial statements and the quarterly Project Management Report (PMR); and (c) timely submission of these documents to the Bank and to the auditors.

10. The overall principles for project accounting are outlined below:

- Books of accounts for the project would be maintained on cash basis principles. Project accounts would be maintained using the computerized accounting system which will be developed for the project and have to be operational before April 30, 2000. This system would be completed by maintaining the reporting financial system to reflect all the transactions and issuing of the quarterly PMR.
- Project accounting would cover all sources of project funds (including beneficiary contributions), and all utilization of project funds (by all implementing agencies). This would include payments and expenditures incurred. All project-related transactions (whether involving cash or not) would be taken into account in the reporting system. Disbursements made by the World Bank and the Special Account maintained by GOM would also be included in the project accounting system. Funds received from different sources would be identified separately and reflected in the project accounts.
- Project-related transactions and activities would be separate from other activities of each regional office and of the National Protection Service at the central level. This distinction would be reflected at the data-capture stage. An identifiable Trial Balance for the project capturing all project receipts, expenditures, and other payments under the project would be prepared. A Chart of Accounts for the project also needs to be set up according to expenditures and sources of funds outlined in the project documents (Project Implementation Plan, Project Appraisal Document, COSTAB model). The Chart of Accounts should clearly show data to facilitate financial reporting of project expenditures by: (i) project components; (ii) expenditure categories; and (iii) disbursement categories.
- A reconciliation system between the Project Financial Statements /financial reports and the legal books of accounts would be clearly defined.
- Physical information on key performance indicators easily linked to financial costs would be part of the project financial management system. Initially this would be maintained for some high cost items and for items of which the physical activities can be easily captured. These items need to be identified and listed in the Procedures Manual to be prepared by June 30, 2000. This list would be gradually expanded during implementation.

Procedures Manual

11. The procedure Manual will outline among others : (a) job responsibilities within the PMU as well as the internal control rules; (b) monthly and annual accounting ledger closing and reconciliation procedures, including centralization and consolidation of data; (c) chart of accounts, accounting policies and accounting guidelines; and (d) banking and cash procedures as well as disbursement procedures including those related to the activities managed through development plans of Douars (PDD) and to the component "public awareness and education" especially disbursement of small grants. It is important that this manual be in writing for distribution to all project staff and to be used as a referential.

Selection of Reporting Software

12. Adequate software for the project will be selected and implemented at the PMU level. During the selection phase, all possibilities need to be considered, more importantly: (a) purchase of standard software, or (b) development of a customized system, or (c) selection of the system to be implemented by the Ministry of Fisheries for the Pilot Fisheries Development Project after its validation in March 2000. The implementation of the system would require: (a) special adaptation to World Bank reporting requirements; (b) training of the project staff; and (c) a successful test run of the accounting and reporting system. Supporting documents related to the test should be considered official and kept as proof of test success.

Information Flow for Accounting Purposes

13. The information flow will be as follows :

- Each regional department (Direction Régionale des Eaux et Forêts) will generate and maintain vouchers and supporting documentation for expenditures on activities directly managed at their level. Sub-project accounts will be issued on a monthly basis and transmitted to the PMU for control, aggregation of data, maintaining of the centralized project accounts and issuing of the project's financial statements.
- Expenditures incurred by all regional offices would be audited by the project auditors according to the international Standards on Auditing and the World Bank guidelines; and
- This system would be reviewed in the light of implementation experience, and modified as necessary.

Internal Controls

The project financial management system should include the following internal control mechanisms:

- operation of a budgeting system, and regular monitoring of actual financial performance with budgets and targets;
- adoption and operation of simple and clear financial and accounting policies which would govern financial management and accounting of the project (as described earlier). These policies and procedures will be included in the Financial Management Manual;
- at the transaction level, establishment and operation of policies, procedures and systems for ensuring standard internal controls such as checking of expenditures, appropriate documentation, levels of authorization, distribution of duties, periodic reconciliation, physical verification, and easy access to supporting documents. These policies and procedures would be reviewed and updated periodically; and
- establishment and operation of a comprehensive aggregation mechanism, including the project financial statements and the PMR at the Central level.

Guidelines for Internal Control Procedures

14. Internal control has traditionally included management policies and procedures to protect an organization's assets and to ensure the accuracy and reliability of the accounting records. Its also includes controls that deal with efficiency and adherence to management policies. The principles of an internal control system are as follows:

- *Authorization* – All transactions and activities should be properly authorized by management;
- *Recording transactions* – All transactions should be recorded and listed in financial statements to establish accountability of the assets;
- *Documents and records* - The design and use of adequate document should help to ensure the proper recording of transactions;
- *Limited access* - Access to assets should be only through management authorization;
- *Periodic independent verification*- Accounting records should be checked against the assets by a party not directly responsible for the records and assets;
- *Separation of duties* - The organizational plan should separate functional responsibilities (authorization, operating, handling assets and keeping the records);
- *Sound personnel procedures* - Sound practices should be followed in managing the staff who carry out the duties and functions.

16. This document will be included in the Procedures Manual and should reflect the PMU's activities including a description of: (a) staff positions and responsibilities, (b) transaction's flows, and (c) relations with regional offices and other departments as well as external authorities/administrations. This system would be reviewed as implementation progresses and modified as necessary.

Financial Management Reports

17. Quarterly project management (PMR) for the project would be generated from the computerized financial management system. These reports would be management-oriented (i.e., summaries rather than transactional details) and would be used for project monitoring and implementation by each regional office and at the central level. The PMR would include the three following parts :

(a) Financial Statements includes:

- Summary of sources and uses of funds
- Uses of funds by project activity
- Project balance statement of affairs
- Cash withdrawal
- Cash forecast
- Special account statement

(b) Project progress includes:

- Output monitoring report using contract management information, or
- Output monitoring report using unit variance as monitoring indicator

(c) Procurement management includes:

- Contract expenditure report – Goods and works
- Contract expenditure report - consultant
- Procurement management report – Goods and works
- Procurement management report - Consultant

18. Formats of the reports should be part of the Procedures Manual. The PMR will be transmitted to the Bank on a quarterly basis and no later than 45 days after the calendar quarter. The first report, including data related to procurement and disbursement, would be transmitted to the Bank by no later than October 31, 2000. The PMR acceptable to the Bank including parts a, b and c as previously described will be transmitted to the Bank by no later than May 15, 2001, and should be validated by the Bank no later than June 30, 2001.

19. Annually: Audited Project Financial Statements (PFS) would be submitted to the Bank. The PFS would include: (i) a statement of sources and utilization of funds or Balance Sheet, indicating funds received from various sources, project expenditures, and assets and liabilities of the project. This would also include appropriate schedules classifying project expenditures by components, expenditure categories, and regional implementing agencies; (ii) a Special Account Reconciliation Statement; and (iii) a Statement of Withdrawals from the GEF grant made on the basis of Statements of Expenditure (SOEs). The audited PFS would be submitted to the Bank not later than 6 months after the end of the Fiscal Year.

Auditing Arrangements

20. The accounts and financial statements of the project would be audited by the "Inspection Générale des Finances" (IGF), who would be the Project Auditors acceptable to the Bank. The annual project financial statements audited by IGF would be submitted to the Bank within six months of the close of GOM's fiscal year. The Terms of Reference (TOR) acceptable to the Bank would be included in the Procedures Manual, approved by the Bank and accepted by IGF.

21. The audit by the Project Auditor would be comprehensive and cover all aspects of the project (i.e., all sources and utilization of funds, and expenditures incurred). The audit will be carried out in accordance with International Standards on Auditing. The Terms of Reference of the auditors includes both audit of financial transaction, and an assessment of the operation of the financial management system, including review of internal control mechanisms. Each regional implementing agency as well as the National Protection Service would provide the auditor with access to project-related documents and records, and information required by the auditor for the purposes of the audit. The Project Auditor would carry out a concurrent audit during the fiscal year, to bring to management's attention any issues which need to be addressed. This would strengthen internal controls, and would also facilitate early completion of the annual audit.

Training of the PMU staff

22. Given the importance of the above actions, the PMU head will develop a training program for the PMU staff including the regional coordinators. The program will cover financial management procedures, internal control rules, budgeting, accounting policies, reporting procedures, and World Bank/IDA procurement guidelines. This program, as well as the timetable for its implementation, have to be submitted to the Bank.

Readiness for Implementation and Next Steps

23. The head of the PMU will need to follow this schedule to implement the financial management action plan over the next 18 months.

Action	Output	Responsibility	Effective Date
1. Preparation of TOR for the consultants to carry out a mission for the issuing of the Manual of procedures and for the staff to be appointed.	Detailed program for the implementation of the action plan and TORs	PMU & WB	December 31, 1999
2. Accounting System for the project	Chart of accounts and accounting manual	PMU & Consultant	April 30, 2000
3. Organization of the PMU and designation of the PMU's team	Organization Chart and job description	PMU & Consultant	January 31, 2000
4. Software implementation	Set-up of the system and testing	PMU & Consultant	April 30, 2000
5. Issuing of the manual of procedures	Procedures Manual	PMU & DREF & Consultant	March, 31, 2000
6. Implementation of the FM System	FMP Manual	PMU & WB	September 30, 2000
7. Issuing of the first PMR	First PMR	PMU	October 31, 2000
8. Review of the first PMR	Report on the review of the first PMR	WB	November 30, 2000
9. Training Program for PMU staff	Program : contents and timetable	PMU	October 31, 2000
10. PMU staff training	Training performance report	PMU & Consultant	December 31, 2000
11. Issuing of the second PMR	PMR	PMU & WB	February 15, 2001
12. Review of the financial management system and issuing of the third PMR	Third PMR	PMU & WB	May 15, 2001
13. Assessment of the financial management system	Final version of the PMR and report on the financial management system	PMU & WB	June 30, 2001

Annex 7

Project processing Budget and Schedule

A. Project Budget (US\$ '000)		Planned	Actual
	FY97	53.8	42.5
	FY98	134.3	171.6
	FY99	90.0	66.6
	Total	278.1	280.7

B. Project Schedule		Planned (At PCD Stage)	Actual
Time taken to prepare the project (months)		10	21
First Bank mission (identification)		6/97	6/97
Appraisal mission departure		2/98	4/99
Negotiations		1/99	12/99
Planned Date of Effectiveness		ND	4/00

Prepared by: Ministry of Water and Forests (MWF)

Preparation assistance: GEF PDF Block B (US\$250,000)

Bank staff and consultants who worked on the project included:

Mmes/Messrs. L. Msellati (Sr. Operations Officer/Task Team Leader, MNSRE), M. Bromhead (Pr. Natural Resources Economist/Task Team Leader until appraisal, ECSSD), N. Glineur (Sr. Environmental Specialist, MNSRE), Arbi Ben-Achour (Sociologist, MNSRE), C. Crepin (Environmental Economist, AFTE1), I. Pswarayi-Riddihough (Natural Resource Management Specialist, MNSRE), D. Lister (Co-Cluster Leader for Morocco, MNSRE); E. Mahe (Biodiversity Specialist, Consultant), S. Msadek (Financial Specialist, MNSRE), S. Shetty (Economist, MNSRE), F. Cuzin (Wildlife Specialist, Consultant), O. Aloui (Economist, Consultant), M. Gress (Sr. Procurement Specialist, MNAV), T. Nguyen (Disbursement Officer, LOAEL), F. Belhaj (Country Lawyer, LEGMN), S. Pittman (Team Assistant, MNSRE), L. Moudden (Team Assistant, MNCMA). The peer reviewer was John Fraser Stewart (ECSSD). At the time of appraisal, the Sector Director was Doris Koehn (MNSRE), and the Sector Manager - Water and Environment was Salah Darghouth.

Annex 8

Documents in the Project File *

A. Project Implementation Plan

A project implementation plan has been prepared and includes the following sections:

Rapport de synthèse
Annexe 1 – Récapitulatif de la conception et justification du projet
Annexe 2 – Composante Parc National SIBE
Annexe 3 – Réserves SIBE
Annexe 4 – Formation, recherche, base d'information
Annexe 5 – Sensibilisation publique
Annexe 6 – Approche participative
Annexe 7 – Plan d'action & Calendrier
Annexe 8 – Coûts
Annexe 9 – Programme détaillé : Première année

B. Bank Staff Assessments

Appraisal BTO Report (June 4, 1999) and Aide Mémoire (May 14, 1999)

World Bank. May 1997. "Kingdom of Morocco – Environmental Review" (2 Volumes).
Report No. 16750-MOR

C. Other

Franchimont, J., - Saadaoui, M., Octobre 1998. "*Etude Nationale sur la biodiversité*". ONEM/PNUE.
(1 rapport de synthèse, 12 rapports thématiques).

Etude de définition d'un réseau d'Aires et Sites Protégés et Elaboration des Plans de Gestion des Parcs nationaux du Maroc. Ministère de l'Agriculture, du développement rural et de la pêche maritime 1996
(7 tomes, 17 volumes).

Documents prepared for Negotiations:

- MWF Decision to transfer two additional staff (a national parks management specialist and a financial management specialist) to the Nature Protection Service and allocate adequate office space
- Proposal to revise the "*Arrêté*" concerning the financial and accounting organization of the "SEGMA pour la valorisation des produits forestiers".
- MWF Decision establishing the The National Coordination Committee.
- Detailed first year's investment program.

*Including Electronic File

Annex 9

Project's Social and Institutional Feasibility

1. This annex analyzes the social and institutional feasibility of the project, with particular emphasis on:
 - institutional and social context of the project;
 - identification of the different actors implied in the project and their respective roles;
 - consultation process during preparation and assessment phases of the project; and
 - institutional mechanisms proposed to ensure its smooth implementation with stakeholders' participation

Institutional and social context of the project

2. Depending on the nature of the rights and prerogatives that they will exercise during project implementation, the actors can be classified in three groups : (i) those who have a tutelage (administrative, technical or financial), (ii) those who have rights (property, right of use), (iii) those who play other roles (research, media or NGOs).

Administrative, technical and financial tutelage

3. The concept of "tutelage" allows to define the responsibilities of the various administrations in place in the areas of intervention and the activities anticipated in the project. The conservation of SIBEs can be done in Morocco by way of three legal means: delimitation of a park, permanent hunting reserve and controlled areas prohibited to grazing for regeneration. With respect to the administrative tutelage, the three provisions are governed by the Ministry of Water and Forests (MWF)⁴.

4. With respect to the technical tutelage however, land improvement and management of protected areas implies the intervention of various services that assume a technical tutelage over a range of activities. Matrix 1 below illustrates the breakdown of functions between the various administrative services for the key activities of the project.

5. The matrix shows that the role of WF districts and DREF will be essential to the success of the project main activities. This is why the training program planned during the first component is focused on the whole of forestry staff. The project financial tutelage will rest with the Ministry of Finance, in accordance with provisions described in Annex 6.

Ownership rights and rights of use in the areas to be developed

6. In SIBEs, privately-owned agricultural land is rare. Land and resources are mainly owned by the State, which grants individual or collective right of use with more or less exclusive management autonomy⁵. Multiple rights of use prevail on collective and national land. Regulation is ensured either by forestry services (this is the case for hunting and fishing in continental waters for instance) or by the assembly of *naïbs* in the communes (this is the case for grazing and also sometimes for excess irrigation water). Matrix 2 below summarizes the land tenure status and the rights of use prevailing on land located in the SIBEs.

⁴ Hence, attributions of the parks and natural reserves services stipulate that they "ensure the carrying out of studies relating to land improvement....., that they supervise the implementation of land improvement plans....., that they ensure rehabilitation of endangered species....., that they ensure sanitary conditions of the parks and report any abnormality to the specialized research centers....., that they coordinate with the districts hunting, fishing and nature conservation activities...".

⁵ This refers for example to the access rights of transhumants.

7. Experience in land improvement of national and collective forests in Morocco indicates the need to pursue a well-thought two-tiered approach with the statutory beneficiaries and the non beneficiary users.

Other institutions

8. In the area of research and awareness, the project's actors will be the various research institutions, media and non governmental organizations.

9. Elected community officials which strictly speaking are not considered to be acting as the tutelage entity and are not necessarily the owners, supervise land improvement regulations by means of different kinds of authorizations.

Identification of actors and roles

10. The notion of actors encompasses administrative services, institutions and social groups and/or lobbying groups directly or indirectly concerned by the project. The actors' role may be passive (the one who is putting up with the project's consequences) and/or active (the one who has an effect on the project's execution).

11. Matrix 4 describes the role of the actors by establishing a distinction between interests at stake, anticipated impact of the project and expected influence of the actor on the project. The three categories of the project actors are represented. It appears very clearly that the land improvement and management components of the SIBEs group the largest number of actors. This is the reason why special attention has been paid to their preparation in collaboration with the various stakeholders.

12. With regard to tutelage, the project presents a high degree of interest as it deals with important issues such as the national strategy for protected areas, international accountability, sustainable development and mobilization of financial assistance on a additional basis. The impact of project is restricted to the development of know-how and a limited reallocation of public funds in favor of biodiversity. On the other hand, the influence of tutelage on the satisfactory implementation of the project is essential because of the project characteristics.

13. For residents, the project puts emphasis on conservation and upgrading of their heritage. Its impact will be negative in terms of restricted access to certain areas that need to be protected, and positive in terms of opportunities to generate alternative sources of income (see *douars* development projects) or income derived from conservation activities (essentially ecotourism). Indeed, the majority of SIBEs are already protected by the forestry services, except for some income derived from wood cutting for use by the communes (in the High Atlas SIBEs) or some provincial hunting reserves (Al Hoceima). Under these circumstances, compensation through access to non protected areas can be envisaged.

14. For institutions involved in research and NGOs, the project offers both an opportunity and new responsibilities. Their integration will ensure a quality scientific framework to the project as well as social support.

15. As for elected officials and agents in charge of rural and urban communes, the project offers an opportunity to demonstrate their commitment to sustainable development and conservation. The project will have impacts on the image of the commune as well as on its revenue. The negative impact on the commune revenues, which benefit from forestry income, will remain marginal to the extent that exploitation of the areas to be protected is already limited. The positive impact will also remain marginal because agricultural activities and ecotourism are not subject to local taxation.

Consultation process during preparation

16. During project preparation, the various actors were consulted on the issue of conservation and biodiversity, as well as on constraints induced by, and opportunities offered by, conservation. The most in-depth consultations focused on: (a) administrative tutelage with several working sessions to discuss the institutional framework of the project;

(b) population using the restoration sites by means of outreach activities and participatory elaboration of development plans in the six *douars*; (c) research institutions which collaborated with the team to prepare an inventory of knowledge and qualifications; and (d) NGOs surveyed by the team in charge of project preparation. The participatory approach methodology is used in the implementation plan administration of the proposed project.

17. During appraisal, in-depth consultations focussed on the administrative and financial tutelage of the project, in particular several working sessions took place to review financing mechanisms.

Implementation mechanisms

Overall principles

18. Following consultations and studies carried out during project preparation, four implementation principles have been defined.

- The first principle consists in decentralizing technical and financial implementation which will de facto delegate management to the project's districts, use the services of the provincial technical committees and establish cooperation between technical services and NGOs.
- The second principle is to gradually integrate resident owners and users to the project's objectives which will be reflected by outreach and development activities taking place at the level of the *douars*. Programming of actions in collaboration with the population will take place over three years so as to be able to gradually integrate the project's objectives after trust has been established and dialogue has been restored between the various local actors.
- The third principle is compensation of non resident users, which will imply agreements between the various stakeholders as necessary.
- The fourth principle relates to the crucial nature of monitoring and evaluation activities at the central level, which will resort to a permanent technical assistance.

Participation mechanisms

19. They concern all components of the project and all actors according to their degree of involvement. Three levels of participation are to be distinguished: participation in decision-making, participation in programming and implementation and participation in monitoring and evaluation activities. The mechanisms set in place to ensure a good level of participation by the various actors are detailed in Annexof the implementation Plan and resumed hereunder.

20. Basically, there are participation mechanisms for local population and NGOs which take the form of a priori consultations, agreements or contracts.

21. At the provincial level, districts will be responsible for developing, on the basis of land improvement studies and of results of outreach activities, an annual program of intervention and ensuring its approval and implementation with the participation of other ministerial directorates by means of local commissions coordinated by the Provincial Technical Committee. Activities at the level of the reserves will be organized according to a similar plan with regards to the Parks & Reserves services of the DREF.

22. At the national level, the management and the PMU will ensure administration of national components, delegation to external services and monitoring and evaluation activities. Along side the management, a national coordination committee for the project will be established composed of representatives of the key ministries involved in the project (see matrix relating to technical tutelage).

Table 1: Technical tutelage

Component and activities	Technical tutelage	Concerned SIBE
Ecosystem restoration component		
Forest management	DREF and WF districts	All except Khnifiss
Forestry regeneration	DREF and WF districts	Toubkal, EHA and Al Hoceima NP
Fencing	DREF and WF districts	Toubkal NP-thurifera-
Sylvo-pastoral activities	DREF, and WF districts Agricultural services	Eastern High Atlas NP, Bou Iblane, Tichoukt, Bou Nacer, Chekhar & Krouz reserves
Protection and management of wildlife	DREF and WF districts	All SIBEs
Protection and management of marine flora and wildlife	Ministry of Fisheries	Al Hoceima NP
Participatory rural development component		
Intensification of irrigated agriculture	Agricultural services	Toubkal, EHA and Al Hoceima NP
Anti-erosion control	DREF, and WF districts Agricultural services	Toubkal, EHA and Al Hoceima NP
Fruit plantations	DREF, and WF districts Agricultural services	Toubkal, EHA and Al Hoceima NP
Ecotourism component		
	Ministry of Tourism Rural and urban communes	All SIBEs

Table 2: Uses and rights

Status of land	Owner	Uses by riverside residents	Other uses and users
National forest land	State	Grazing/Collection of dead wood Collection of wood and secondary species	Grazing/Forestry exploitation Hunting/Fishing Tourism/Mining extraction
Common land	Traditional collectivities under the tutelage of the DAR	Primarily pastoral use According to the decisions taken by the <i>jemaa of naibs</i> , beneficiaries may use it for agricultural or other purposes	Depending on local customs, non beneficiaries may be included
"Melk" land	Individuals	Primarily agricultural use	

Table 3: Consultation and participation of actor during preparatios

Actor	Preparation		Appraisal	
	Rapid consultation	In-depth consultation	Rapid consultation	In-depth consultation
Administrative tutelage		X		X
Technical tutelage	X		X	
Financial tutelage	X			X
Resident owners and users	X	X	X	
Non resident owners & users	X		X	
Research institutions		X	X	
NGOs		X	X	
Rural and urban communes	X		X	

Table 4: Role of actors

Actor	Interests at stake	Project impact	Influence on the project
Tutelage			
Administrative tutelage (MEF)	National strategy International responsibility	Development of the management capacity of the protected areas	Entrust the project with sound land improvement and management plans
Technical tutelage (MEF, Research institutions)	Sustainable development	Establishment of sustainable land improvement models in partnership	Ensure technical sustainability of land improvements
Financial tutelage (MEF, Min. Finance, Min. General Affairs)	Raise international financial assistance	Budget recording	Ensure flexibility of implementation
Owners and users			
Resident owners and users	Conservation and upgrading of stock	Restrictions on abusive uses Alternative income Income linked to conservation	Ensure integration of conservation objectives Ensure viability of conservation measures
Non resident owners and users	Preservation and upgrading of access right	Restriction on abusive uses Compensatory measures	Ensure viability of conservation measures
Other institutions			
Research and training institutions	Pursue research in fields of scientific interest International status Continue training	Recovery of databases Research contracts Development of partnership	Endow the project with scientific data Ensure monitoring of ecosystems
NGOs	Public awareness Strengthening the social role of organizations Increase the impact of lobbying groups in favor of conservation	Increase responsibility Improved management capacities Deepen partnership with administrations	Ensure independent follow-up of tutelage Improve technical framework and social integration of the project
Rural and urban communes	Accountability of elected officials vis-à-vis voters and local community	Image of the commune Revenue of the commune	Facilitate adoption of land improvement measures

Annex 10
Status of Bank Group Operations in Morocco
Operations Portfolio
As of 29-Mar-99

				Original Amount in US\$Millions				Difference Between expected and actual	
Fiscal								Disbursements a/	
Project ID	Year	Borrower	Purpose	IBRD	IDA	Cancellations	Undisbursed	Orig	Frm Rev'd
Number of Closed Projects: 104									
Active Projects									
MA-PE-5519	1999	GOV'T OF MOROCCO	LAKHDAR WATERSHED MG	4.00	0.00	0.00	4.00	0.00	0.00
MA-PE-5524	1999	GOVERNMENT	FES-MEDINA REHAB.	14.00	0.00	0.00	13.73	0.00	0.00
MA-PE-5525	1999	GOV.OF MOROCCO	HEALTH MANAGEMENT	66.00	0.00	0.00	67.20	4.67	0.00
MA-PE-40566	1998	GOVT OF MOROCCO	RURAL W.S.& SANITATN	10.00	0.00	0.00	9.95	3.67	.84
MA-PE-5521	1998	GOVT OF MOROCCO	WATER RESOURCE MGMT.	20.00	0.00	0.00	19.90	2.00	0.00
MA-PE-5523	1998	FEC	MUNICIPAL FINANCE II	70.00	0.00	0.00	57.72	24.98	0.00
MA-PE-38978	1997	GOVERNMENT OF MOROCCO	PSD III-VOC TRG.	23.00	0.00	0.00	19.76	10.97	2.30
MA-PE-43725	1997	ONCF	RAILWAY RESTR & PRIV	85.00	0.00	0.00	67.23	7.68	0.00
MA-PE-42414	1996	GOVT OF MOROCCO	COOR/MON SOCIAL PRO	28.00	0.00	0.00	23.72	2.16	0.00
MA-PE-42415	1996	GOVT OF MOROCCO	SPI - HEALTH	68.00	0.00	0.00	52.48	-.54	0.00
MA-PE-5501	1996	GOV. OF MOROCCO	SPI - EDUCATION	54.00	0.00	0.00	36.20	7.60	0.00
MA-PE-5503	1996	KINGDOM OF MOROCCO	SEW.& WATER REUSE II	40.00	0.00	0.00	39.11	7.91	0.00
MA-PE-5489	1995	KINGDOM OF MOROCCO	SECONDARY ROADS	57.60	0.00	0.00	51.44	41.36	0.00
MA-PE-5435	1994	KINGDOM OF MOROCCO/ONEP	WATER SUPPLY V	160.00	0.00	40.00	71.57	67.87	12.84
MA-PE-5499	1994	GOV. OF MOROCCO	IRR. AREAS AGR. SERV	25.00	0.00	7.99	10.56	15.66	1.05
MA-PE-5504	1994	KINGDOM OF MOROCCO	ENVIRONMENT MANAGEME	6.00	0.00	2.54	1.54	3.80	1.39
MA-PE-5462	1993	GOVERNMENT	SECOND LSI IMPROVEME	215.00	0.00	71.12	59.65	55.44	14.31
MA-PE-5514	1993	GOV. OF MOROCCO	LAND DEVELOPMENT	130.00	0.00	24.00	41.39	62.81	39.35
MA-PE-5517	1993	GOV.OF MOROCCO/FEC	MUNICIPAL FINANCE I	104.00	0.00	4.00	1.33	5.34	-1.16
Total				1,179.60	0.00	149.65	648.48	323.38	70.92
		Active Projects	Closed Projects	Total					
Total Disbursed (IBRD and IDA):		372.32	6,014.14	6,386.46					
of which has been repaid:		4.75	3,081.21	3,085.96					
Total now held by IBRD and IDA:		1,025.20	2,953.72	3,978.92					
Amount sold :		0.00	20.11	20.11					
Of which repaid :		0.00	20.11	20.11					
Total Undisbursed :		648.48	8.36	656.84					

a. Intended disbursements to date minus actual disbursements to date as projected at appraisal.

Note: Disbursement data is updated at the end of the first week of the month and is currently as of 28-Feb-99.

Morocco
STATEMENT OF IFC's
Committed and Disbursed Portfolio
 As of 28-Feb-99
 (In US Dollar Millions)

FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic	Loan	Equity	Quasi	Partic
1987/90	CIH	19.96	0.00	0.00	1.07	19.96	0.00	0.00	1.07
1987/93	SETAFIL	2.98	1.20	0.00	0.00	2.98	1.20	0.00	0.00
1990	ENNASR	.94	0.00	0.00	0.00	.94	0.00	0.00	0.00
1994/96	Mediafinance	0.00	1.16	0.00	0.00	0.00	1.16	0.00	0.00
1995	Attijari	0.00	.49	0.00	0.00	0.00	.26	0.00	0.00
1999	Settavex	5.04	9.00	0.00	0.00	5.04	9.00	0.00	0.00
Total Portfolio:		28.92	11.85	0.00	1.07	28.92	11.62	0.00	1.07
Approvals Pending Commitment									
		<u>Loan</u>	<u>Equity</u>	<u>Quasi</u>	<u>Partic</u>				
Total Pending Commitment:		0.00	0.00	0.00	0.00				

Annexe 11 Morocco at a glance

9/9/99

POVERTY and SOCIAL

1998

	Morocco	M. East & North Africa	Lower-middle-income
Population, mid-year (millions)	27.8	285	908
GNP per capita (Atlas method, US\$)	1,250	2,050	1,710
GNP (Atlas method, US\$ billions)	34.8	586	1,557

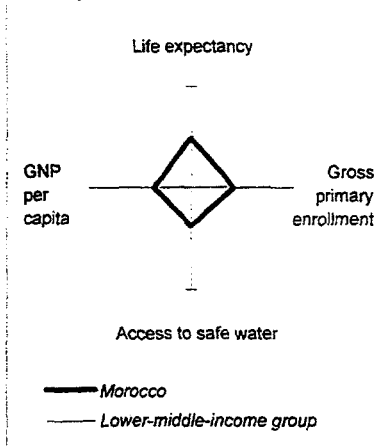
Average annual growth, 1992-98

Population (%)	1.8	2.2	1.1
Labor force (%)	2.2	3.0	1.5

Most recent estimate (latest year available, 1992-98)

Poverty (% of population below national poverty line)	13
Urban population (% of total population)	54	58	58
Life expectancy at birth (years)	67	67	68
Infant mortality (per 1,000 live births)	51	49	38
Child malnutrition (% of children under 5)	10	14	..
Access to safe water (% of population)	57	81	75
Illiteracy (% of population age 15+)	54	38	14
Gross primary enrollment (% of school-age population)	86	96	103
Male	97	103	105
Female	74	89	100

Development diamond*

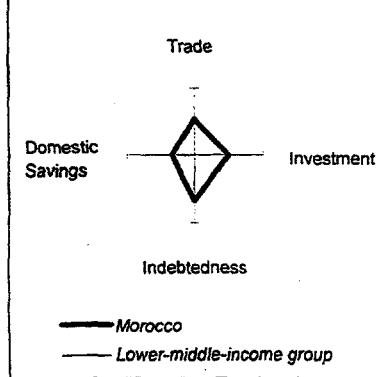


KEY ECONOMIC RATIOS and LONG-TERM TRENDS

	1977	1987	1997	1998
GDP (US\$ billions)	11.0	18.7	33.4	35.1
Gross domestic investment/GDP	34.2	21.1	28.7	22.6
Exports of goods and services/GDP	16.9	23.6	27.6	27.3
Gross domestic savings/GDP	13.8	16.8	13.6	14.7
Gross national savings/GDP	17.1	22.1	20.4	22.3
Current account balance/GDP	-16.6	1.0	-0.3	-0.1
Interest payments/GDP	1.8	3.6	3.1	2.8
Total debt/GDP	48.3	110.2	57.8	55.8
Total debt service/exports	14.5	29.5	26.6	23.4
Present value of debt/GDP	51.3	..
Present value of debt/exports	148.6	..

	1977-87	1988-98	1997	1998	1999-03
(average annual growth)					
GDP	4.1	2.4	-2.3	6.5	..
GNP per capita	1.5	0.6	-3.9	4.5	..
Exports of goods and services	4.5	6.5	6.3	3.6	7.7

Economic ratios*

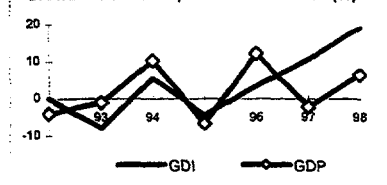


STRUCTURE of the ECONOMY

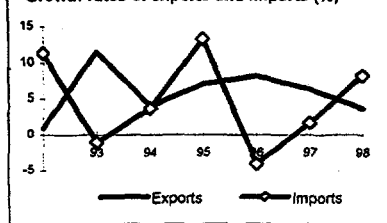
	1977	1987	1997	1998
(% of GDP)				
Agriculture	16.4	15.4	15.4	16.6
Industry	32.6	32.9	33.0	32.0
Manufacturing	16.6	18.2	17.7	17.1
Services	51.1	51.8	51.6	51.4
Private consumption	65.6	67.5	68.7	67.2
General government consumption	20.6	15.7	17.8	18.2
Imports of goods and services	37.3	27.8	34.7	35.2

	1977-87	1988-98	1997	1998
(average annual growth)				
Agriculture	4.1	-0.7	-26.5	23.6
Industry	2.3	3.0	8.1	1.8
Manufacturing	4.1	3.1	3.3	2.4
Services	5.2	3.0	0.8	4.9
Private consumption	2.9	2.5	-3.9	3.6
General government consumption	5.3	1.3	-13.2	9.5
Gross domestic investment	..	1.5	10.6	19.1
Imports of goods and services	-0.4	5.2	1.6	8.2
Gross national product	3.8	2.5	-2.2	6.4

Growth rates of output and investment (%)



Growth rates of exports and imports (%)



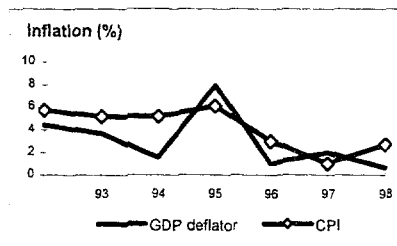
Note: 1998 data are preliminary estimates.

* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

Morocco

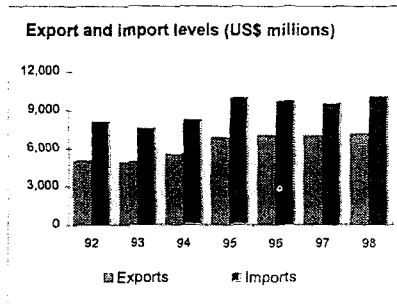
PRICES and GOVERNMENT FINANCE

	1977	1987	1997	1998
Domestic prices				
(% change)				
Consumer prices	12.6	2.8	1.0	2.7
Implicit GDP deflator	15.7	3.9	2.0	0.7
Government finance				
(% of GDP, includes current grants)				
Current revenue	21.7	16.0	24.7	25.1
Current budget balance	3.1	0.3	2.6	3.1
Overall surplus/deficit	2.7	-5.7	-3.6	-3.1



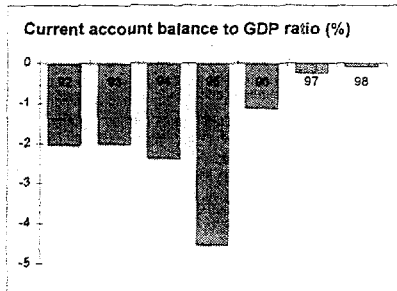
TRADE

	1977	1987	1997	1998
(US\$ millions)				
Total exports (fob)	1,314	3,068	7,039	7,185
Other agriculture	429	858	1,374	1,362
Phosphorus	469	368	435	453
Manufactures	218	876	1,467	1,490
Total imports (cif)	3,237	4,388	9,522	10,120
Food	432	476	1,065	1,167
Fuel and energy	371	738	1,296	905
Capital goods	1,104	881	1,661	2,213
Export price index (1995=100)	..	71	84	87
Import price index (1995=100)	..	76	89	97
Terms of trade (1995=100)	..	94	95	90



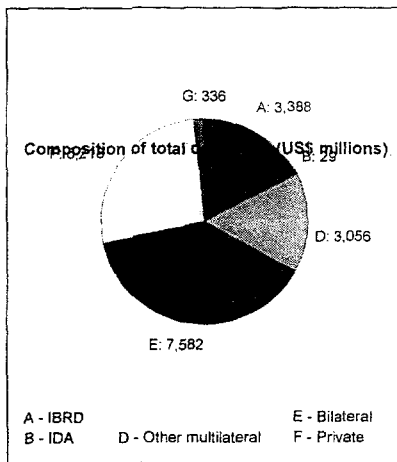
BALANCE of PAYMENTS

	1977	1987	1997	1998
(US\$ millions)				
Exports of goods and services	1,839	4,420	9,510	9,964
Imports of goods and services	4,041	5,218	10,627	11,210
Resource balance	-2,202	-799	-1,117	-1,247
Net income	-192	-767	-1,175	-1,090
Net current transfers	560	1,759	2,205	2,304
Current account balance	-1,834	194	-87	-32
Financing items (net)	1,832	94	640	268
Changes in net reserves	2	-288	-553	-236
Memo:				
Reserves including gold (US\$ millions)	531	427	4,620	4,951
Conversion rate (DEC, local/US\$)	4.5	8.4	9.5	9.7



EXTERNAL DEBT and RESOURCE FLOWS

	1977	1987	1997	1998
(US\$ millions)				
Total debt outstanding and disbursed	5,335	20,651	19,321	19,609
IBRD	340	2,558	3,271	3,388
IDA	38	41	31	29
Total debt service	357	1,779	3,081	2,841
IBRD	41	345	532	505
IDA	0	1	2	0
Composition of net resource flows				
Official grants	60	77	269	225
Official creditors	648	481	-753	-284
Private creditors	1,144	294	-141	-181
Foreign direct investment	57	60	1,200	800
Portfolio equity	0	0	243	174
World Bank program				
Commitments	168	802	155	130
Disbursements	71	405	141	291
Principal repayments	17	164	295	299
Net flows	54	240	-154	-8
Interest payments	24	182	238	207
Net transfers	31	58	-392	-214



Annex 12

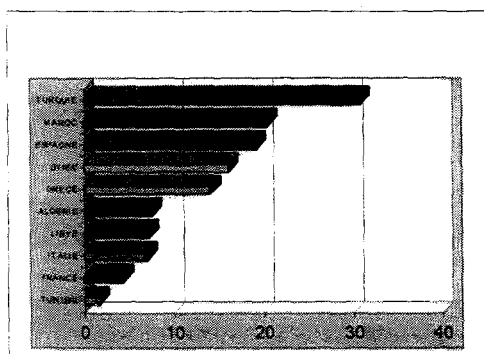
Rationale for Biodiversity Conservation

1. Importance of Moroccan Biodiversity in the Mediterranean Context

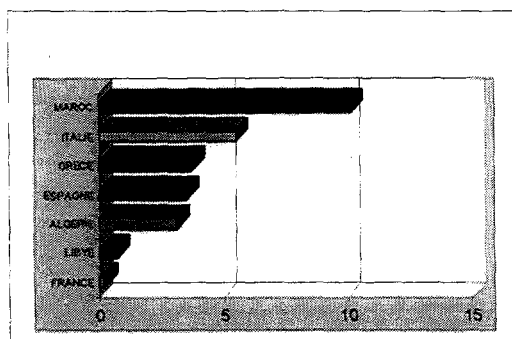
The Mediterranean Basin is one of the richest areas in the world in regards to its endemic biodiversity, with more than 50% taxa, whereas vast regions like Australian or Indian areas do not reach 40%. It is only recently that the worldwide importance of biodiversity in the Mediterranean region has been perceived and many scientific works have now been undertaken. So the link has been identified between these values and mountains and islands habitats which are the main Mediterranean endemism centers, with a growing latitudinal gradient (north-south) and also altitudinal gradient (habitats over 1 700 m).

The geological history of the Mediterranean Sea and the slow changes it has experienced are the major cause for this endemism that has been progressively created from numerous isolate systems. Within this vast region, two big countries stand clearly out in relation to their endemism, Turkey and Morocco. If because of its flora Turkey occupies an exceptional first place immediately followed by Morocco, this latter represents the main sanctuary for superior vertebrates.

VASCULAR PLANTS ENDEMISM RATE



SUPERIOR VERTEBRATES ENDEMISM RATE



A biodiversity conservation is part of the preservation of sectors with a large endemics concentration, but is especially part of the safeguard of more or less relictual taxa local centers (paleo- and patroendemic). For the Mediterranean Basin, the sanctuary areas for its biodiversity are mainly in the western biogeographic body, with in particular the Betic-Rif flora unit and the Moroccan Atlas. Morocco, and in particular its Atlas and Rif mountains, appear to be first class representative elements of the Mediterranean biodiversity. Therefore they must be preserved in order to ensure the sustainability of founding taxa of this exceptional wealth.

Within the Moroccan mountains holders of biodiversity, some ecosystems play a more decisive part than others. According to what is known so far, steppes and forestry altitude ecosystems resulting from habitats fractioning due to ancient orogenesis, conceal the highest proportions of vegetal and animal endemics, reptile family in particular.

It should be noted that 76% of the SIBEs selected for the GEF project are located in mountainous areas.

2. Ecological Representativity of the GEF Project 13 SIBEs

With its biogeographic amplitude, the GEF project covers a large series of ecosystems which both represent Morocco's natural patrimonial richness and habitats founders of Moroccan biodiversity. The SIBEs network selected for the GEF project accounts for 70% of the 39 main ecosystems registered in Morocco.

Considering Morocco's most important and most threatened ecosystems (priority ecosystems in the National Strategy) in relation to their biodiversity, the project is addressing 64% of them, i.e.:

MEDITERRANEAN	SAHARIAN
<i>Cedrus atlantica</i>	steppe des reg
<i>Tetraclinis articulata</i>	
<i>Juniperus phoenicea</i>	
<i>Juniperus thurifera</i>	
Xérophytes épineux	
<i>Pinus maghrebiana</i>	
<i>Pinus alepensis</i>	
<i>Stipa tenacissima</i>	
<i>Cupressus atlantica</i>	
<i>Ceratonia siliqua</i>	
<i>Olea oleaster</i>	
<i>Quercus rotundifolia</i>	
<i>Quercus suber</i>	
<i>Quercus pyrenaica</i>	
<i>Quercus faginea</i>	
<i>Quercus coccifera</i>	
Végétation des tourbières	

Representativity must also be related to the geographic amplitude on the one hand, and the bioclimatic amplitude on the other. Also, the GEF network covers 8 of Morocco's 14 biogeographic subdivisions and the full bioclimatic spectrum. Therefore this project's representativity may be considered as very high, especially for a first operation in this area. More detailed information is given in Annex .. of the Project Implementation Plan, in particular on the distribution of main ecosystem types registered by biogeographic region, according to the list of SIBEs of the GEF project and the bioclimatic distribution of SIBEs by ecosystems.

3. Ecological Validity of Proposed Actions

Actions in National Parks

In relation to protection and restoration, the forestry ecosystems covered by the initial program of action are as follows:

- <i>Cedrus atlantica</i>	PN Haut Atlas Oriental
- <i>Tetraclinis articulata</i>	PN Al Hoceima
- <i>Juniperus thurifera</i>	PN Toubkal
- <i>Quercus rotundifolia</i>	PN Al Hoceima
- végétation de ripisylve	PN Toubkal

With the exception of ripisylve vegetation, all these ecosystems are classified as a "priority" in the Moroccan Strategy and some of them like *Juniperus thurifera*, are even considered as the most currently threatened (degradation of anthropic nature).

The fauna species in need of a protectionist action are as follows :

- le mouflon (<i>Ammotragus lervia</i>)	PN Toubkal + PN Haut Atlas Oriental
- la gazelle de Cuvier (<i>Gazella Cuvieri</i>)	PN Haut Atlas Oriental
- les carnivores	PN Toubkal + PN Haut Atlas Or.+ PN Al Hoceima
- le magot (<i>Macaca sylvanus</i>)	PN Toubkal + PN Haut Atlas Oriental
- la loutre (<i>Lutra lutra</i>)	PN Haut Atlas Oriental
- les rapaces	PN Toubkal + PN Haut Atlas Or.+ PN Al Hoceima
- le balbuzard (<i>Pandion haliaetus</i>)	PN Al Hoceima
- le goéland d'Audouin (<i>Larus Audouinii</i>)	PN Al Hoceima
- la faune marine	PN Al Hoceima

Ammotragus lervia, *Gazella Cuvieri*, *Pandion haliaetus* and *Larus Audouinii* are among the rare species in Morocco. *Macaca sylvanus* is one of the rare endemic mammals of North Africa. *Lutra lutra* is a remarkable species currently highly threatened in Morocco.

The generally carnivorous populations (such as *Hyaena hyaena*, *Canis aureus*, *Mustela putorius*, *Genetta*, *Vulpes*,...) are strongly regressing everywhere and their conservation requires a full stop to poisoning and trapping for which they are the major victims as well a rehabilitation of their habitats.

Morocco was once the home to the most remarkable raptors population in North Africa. While their number has strongly diminished, diversity is still present and a strong action aiming at protecting the breeding areas, stopping poisoning and trapping and raising public awareness can contribute to put an halt to the actual regression trend.

Actions in Reserves

In relation to protection and restoration, the ecosystems covered by the initial program of action are as follows :

1. <i>Cedrus atlantica</i>	Bouhachem, Bou Iblane
2. <i>Tetraclinis articulata</i>	Tamga
3. <i>Juniperus phoenicea</i>	Jbel Krouz
4. <i>Juniperus thurifera</i>	Bou Iblane
5. <i>Juniperus communis</i>	Jbel Tichoukt
6. Xérophytes épineux	Bou Iblane, Bou Naceur, jbel Tichoukt
7. <i>Pinus maghrebiana</i>	Bou Iblane
8. <i>Pinus alepensis</i>	Tamga
9. <i>Stipa tenacissima</i>	Chekhar, jbel Krouz,
10. <i>Cupressus atlantica</i>	Aghbar
11. <i>Pistacia atlantica</i>	Jbel Krouz
12. <i>Quercus rotundifolia</i>	Bou Iblane, Bou Naceur, jbel Tichoukt
13. <i>Quercus suber</i>	Bouhachem
14. <i>Quercus pyrenaica</i>	Bouhachem
15. <i>Quercus faginea</i>	Bouhachem
16. <i>Quercus coccifera</i>	Jbel Moussa, Bouhachem
17. végétation des tourbières	Bouhachem, Bou Naceur, jbel Tichoukt
18. végétation des regs	Lagune de Khnifiss
19. végétation des ergs	Lagune de Khnifiss
20. végétation halophile	Jbel Krouz, lagune de Khnifiss

Except for *Juniperus communis*, *Pistacia atlantica*, regs, ergs and halophile vegetation, all these ecosystems are classified as a "priority" in the Moroccan Strategy and 30% of them are even considered as the most currently threatened (degradation of anthropic nature).

The fauna species in need of a protectionist action are as follows :

- le mouflon (<i>Ammotragus lervia</i>)	Bou Naceur
- la gazelle de Cuvier (<i>Gazella Cuvieri</i>)	Chekhar, Jbel Krouz
- la gazelle Dorcas (<i>Gazella dorcas</i>)	Jbel Krouz
- les carnivores	Tous les SIBE
- le Magot (<i>Macaca sylvanus</i>)	Jbel Moussa, Bouhachem, Tichoukt, Tamga
- les rapaces	Tous les SIBE
- la faune marine lagunaire	Khnifiss

Scientific Studies Program

This program is three-pronged:







- A) ensure SIBEs ecosystems and biodiversity scientific monitoring (design of a data bank and data entry)
- B) undertake studies needed for phylogenetic characterization of certain species
- C) bring about reference elements for biodiversity protection

The rationale for action is obvious for A), as it is impossible to consider setting up the ecosystems patrimonial management without a scientific monitoring which allows the understanding of problems and dynamics.

In relation to B), there are a number of species whose genetic status is still uncertain and therefore their patrimonial value cannot be adequately appreciated. These species belong to the flora and the fauna. These studies would allow to identify the exact endemic level of plants and vertebrates, contributing therefore to biodiversity characterization of Morocco as well of North Africa. For species that are apparently unique such as Toubkhal lacertidés, Barbary hawk of the last herd of *Gazella dorcas* in the Northern Atlas plains, the discovery of a speciation range at the sub-species level (currently suspected), would concern the national biodiversity. For amphibians and fish (such as brills, phoxinellus or rana), it would concern biodiversity of North Africa.

In relation to C), studies would mainly focus on defining the exact status of Moroccan raptors on the one hand, and extremely rare reptiles on the other, for which Morocco is either the only sanctuary or one of the very rare centers in the world (*Chalcides ebneri*, *Psammodromus microdactylus*), in order to determine specific protection measures for these animals and ensure to the extent possible their sustainability or at least the growth of their population.

[illegible]

 RIVERS
 PROVINCE CAPITALS
 NATIONAL CAPITAL
 PROVINCE BOUNDARIES
 INTERNATIONAL BOUNDARIES
 INTERNATIONAL BOUNDARIES (APPROXIMATE)

IBRD 30225
282