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Report No:

PROJECT BRIEF

ON A

PROPOSED GRANT FROM THE
GLOBAL ENVIRONMENT FACILITY TRUST FUND

IN THE AMOUNT OF USD 6.15 MILLION

TO THE

HASHEMITE KINGDOM OF JORDAN

FOR AN

INTEGRATED ECOSYSTEM MANAGEMENT IN THE JORDAN RIFT VALLEY
(GEF) PROJECT

March 24, 2006

CURRENCY EQUIVALENTS

(Exchange Rate Effective December, 2005)

Currency Unit = Dinar (JD)
JD1.4094 = US$1

All figures in US Dollars

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ASEZA	Aqaba Special Economic Zone Authority
AEC	Arcadis Euroconsult
BSAP	National Biodiversity Strategy and Action Plan
CAS	Country Assistance Strategy
CBD	Convention on Biological Diversity
CCA	Community Conserved Area
CDEP	Community Development and Enterprise Program
CDS	Community Development Specialist
CEC	Consulting Engineering Center
CEESP	IUCN Commission on Environmental Economic and Social Policy
CIDA	Canadian International Development Agency
CITES	Convention on International Trade in Endangered Species
CTA	Chief Technical Advisor
CTT	Core Technical Team
EIA	Environmental Impact Assessment
EU	European Union
FOEME	Friends of the Earth Middle East
FOES	Friends of Environment Society
GEF	Global Environment Facility
GEF-SGP	Global Environment Facility - Small Grants Programme
GIS	Geographic Information Systems
GPS	Global Positioning System
GTZ	German Technical Assistance
HKJ	Hashemite Kingdom of Jordan
IBA	Important Bird Area
ICA	Incremental Cost Analysis
IEM	Integrated Ecosystem Management
IPM	Integrated Pest management
IUCN	the World Conservation Union
IWRM	Integrated Water Resources Management
JES	Jordan Environmental Society
JICA	Japanese International Cooperation Agency
JRF	Jordan River Foundation
JRV	Jordan Rift Valley
JRVT	Jordan Rift Valley Team
JSSD	Jordan Society for Sustainable Development
JVA	Jordan Valley Authority
LFA	Logical Framework Analysis
LUP	Land Use Plan(ning)

LUMP	Land Use Master Plan
NCARTT	National Center for Agricultural Research and Technology Transfer
MEA	Multilateral Environmental Agreement
MoA	Ministry of Agriculture
MoEnv	Ministry of Environment
MoMA	Ministry of Municipal Affairs
MoP	Ministry of Planning
MoTA	Ministry of Tourism and Antiquities
MOU	Memorandum of Understanding
MoWI	Ministry of Water and Irrigation
MSP	Medium Size Project (GEF)
NBSAP	National Biodiversity Strategy and Action Plan
NGO	Non Governmental Organization
NR	Nature Reserve
NRA	Natural Resources Authority
OPCS	World Bank - Operations Policies and Country Services Unit
PA	Protected Area
PCD	Project Concept Document
PDF	Project Development Facility
PDT	Project Design Team (AEC/CEC 2005)
PERSGA	Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aqaba
PMU	Project Management Unit
PMC	Project Management Committee
PRA	Participatory Rural Appraisal
PSU	Program Support Unit (CIDA)
RRA	Rapid Rural Appraisal
RSCN	Royal Society for the Conservation of Nature
SC	Steering Committee
SDC	Swiss Agency for Development and Cooperation
SGP	Small Grants Program (GEF)
TOR	Terms of Reference
TWG	Technical Working Group
UN	United Nations
UNCCD	UN Convention to Combat Desertification
UNDP	UN Development Program
UNESCO	UN Economic, Social and Cultural Organization
UNEP	UN Environment Program
UNFCCC	UN Framework Convention on Climate Change
USAID	US Agency for International Development
WB	World Bank
WCPA	IUCN World Commission on Protected Areas
WESCANA	IUCN Office for West Asia, Central Asia and North Africa
WHS	World Heritage Site
WWF	World Wide Fund for Nature (still World Wildlife Fund in the USA and Canada)

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Integrated Ecosystem and Natural Resources Management (GEF)

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A. STRATEGIC CONTEXT AND RATIONALE

1. Country and sector issues

Characteristics of the Jordan Rift Valley. The Jordan Rift Valley is an integral part of the Great Rift Valley and provides a globally critical land bridge between Africa, Europe, and Asia that supports a large variety of ecologically diverse habitats of international importance and funnels millions of migrating birds between these continents each year. The Valley is of strategic economic importance, linking the five countries of Egypt, Israel, Jordan, the West Bank, and Syria, which share many of its natural resources, including the Jordan River, Dead Sea, and Gulf of Aqaba. Its critical geographical location, combined with the most productive agricultural land resources in Jordan has made it a focal area for development and land conversion that threatens its unique ecological and cultural values. The Jordan Government (GOJ) has long recognized this dilemma and is seeking ways to secure the Valley's economic and ecological integrity for the benefit of its people.

Sector issues. There have been a number of individual environmental and resource protection projects in the Jordan Rift Valley (JRV). However, the weak institutional and legal framework for integrated ecosystem management (IEM) with limited capacity and knowledge, and subsequently the lack of an adequate and comprehensive land management framework has contributed to continued degradation of the fragile ecosystem, increasing losses of biodiversity. As such, there is a need for a coherent conservation-oriented integrated ecosystem management and land use strategy to build on the lessons learned from similar IEM and biodiversity projects. This is critical and necessary to stem biodiversity losses from increasing economic development pressures, expanding agriculture, and unsustainable use of water. However, this cannot be done in isolation and requires a participatory integrated resource management approach that provides for economic development and sustainable resource use to local communities. Annex 1 further details the physical and biodiversity characteristics of the Jordan Rift Valley and related sectoral issues.

Strategic choices in project design. In order to address the sector issues, three key strategic choices have been made during project preparation and design. Firstly, the project will mainstream biodiversity conservation into the land-use planning process and thus introduce and apply the principles of integrated ecosystem management in the Rift Valley. A system approach to ecosystem management improves the probability of substantial progress in conservation by promoting a truly integrated approach, linking conservation with other human activities and endeavors. Protected areas are a key part of *in situ* conservation under the Convention on Biological Diversity (CBD), but no protected area will succeed if managed in isolation. There are biological, social, and economic interdependence between places and ecosystems; moreover, the processes of interaction are complex and dynamic. In switching the focus from individual protected areas to considering the relationships among them, and putting the whole protected area network into its broader context, system planning provides the mechanism for ensuring that the total significance and effectiveness of a national protected areas system is much more than the sum of the parts.

Secondly, sufficient attention will be given to local stakeholder involvement, to a bottom up approach concerning community engagement and interventions, as well as monitoring and evaluation. It has become explicit policy to allow local communities to participate in establishing and managing protected areas. Local and regional land use plans, formulated in consultation with community members and accompanying capacity building and awareness raising activities, will be the project's primary vehicle to implement interventions and approaches relating to ecosystem management. Through participation in the planning, monitoring and evaluation of the local ecosystems, the communities will provide input to the final land use plans (LUP) and to anticipated legal and regulatory reforms, which will need to be undertaken. The project will also ensure that targeted communities will be involved in identifying and implementing eligible alternative livelihood initiatives.

Thirdly, given the limited capability in integrated resource management, participatory approaches and conservation-based LUP at local and national levels, substantial effort will be put into capacity building at all levels. Local communities and NGOs would need to be trained and empowered to take responsibility in community-based resource management and to become equitable partners in participatory planning, while national government agencies need to be trained to guide this process. This process of local and national empowerment is critical not only for the conservation of biodiversity resources but also to address the challenges of economic development and demand on water resources in the region.

2. Rationale for Bank involvement

World Bank and GEF engagement. In Jordan, the World Bank and GEF have been involved in the successful implementation of previous completed and ongoing projects in the field of biodiversity conservation. Some examples include the Conservation of the Dana and Azraq Protected Areas project; the Conservation of Medicinal and Herbal Plants project; and the Gulf of Aqaba Environmental Action project. GEF involvement in this integrated ecosystem management project allows for valuable lessons learned from previous and ongoing projects to be incorporated into the proposed project. It further provides the opportunity for an exchange of ideas and cross-fertilization with other GEF projects thus giving the possibility for the creation of an integrated ecosystem management network, including surrounding countries and regions. Thus far, national efforts to introduce, regulate, and institutionalize integrated ecosystem management are very limited. In addition, there is little integration in Jordan between conservation and rural development activities. Training programs addressing the issues and enhancing the knowledge base hardly exist. Similarly, the involvement of communities and local stakeholders in ecosystem management and land use planning is very limited, requiring a well-planned awareness-raising program.

The project and country priorities. The proposed GEF project is designed to be fully in line with Jordan's Country Assistance Strategy[1] (CAS) priority areas to (i) promote human development for poverty alleviation, including policies, strategies and programs for education, health, social insurance and assistance and the greater inclusion of women; (ii) improve governance through public sector reform, including institutional capacity building for efficient and equitable implementation of policies; (iii) enhance conditions for growth led by the private sector; (iv)

[1] Jordan's Country Assistance Strategy presented to the Board on January 21, 2003.

address resource conservation, exploitation and management, with a focus on water; and (v) include gender in development planning analysis. Annex 2 identifies major related project financed by the Bank and/or other agencies.

The project and regional priorities. The Project is also well aligned with many of the goals highlighted in the World Bank Middle East and North Africa (MENA) Regional Strategy Paper. This paper, which was updated in June 2004, identifies five areas of focus for regional development, namely (i) private sector efficiency and governance; (ii) private sector development and employment creation; (iii) education for a global world; (iv) water and (v) gender. The community development or alternative livelihood component will identify possible income generating activities and employment possibilities for community members; in this regard, special attention will be given to the involvement of women. In addition, the capacity-building component will include environmental training and workshops to enhance the knowledge and skills in the area of IEM at the institutional and community level.

3. Higher level objectives to which the project contributes

Global environmental objective. The project's goal is to secure the ecological integrity of the Jordan Rift Valley as a globally important corridor. The project would be co-financed by a GEF grant under the biodiversity conservation focal area and operational programs (OP) No. 1 "Arid and Semi-arid Zones Ecosystems" supported also by OP 12 – "Integrated Approach to Ecosystem Management" and OP 15 "Sustainable Land Management". While the main focal area of this project relates to biodiversity conservation, the project is also linked to land degradation. The project will aim to increase the institutional and local capacity to implement integrated ecosystem management and to provide alternative livelihoods and community development activities, based on stakeholder participation and needs that can deliver both domestic and global environmental benefits.

GEF strategic priorities. In promoting and introducing an integrated approach to environmental management, the project will contribute to the GEF strategic priorities under the biodiversity focal area, such as:

· Strategic Priority (SP) 1- *Catalyzing the sustainability of protected areas*, by strengthening the PA system and increasing the representiveness of PA systems.

· Strategic Priority (SP) 2- *Mainstreaming biodiversity in production landscapes*, by strongly promoting Integrated Ecosystem Management and focusing on integrated development planning to ensure connectivity between PAs and /or sustainable and biodiversity friendly practices around and between PA along migratory corridors.

· Strategic Priority (SP) 4- *Generating and disseminating sustainable best practices to address biodiversity issues*, through the capacity-building program and sustainable financing mechanisms.

The integrated ecosystem management approach intends to strike a balance between the interlinked objectives of biodiversity conservation and sustainable natural resources use, while keeping in mind the fair distribution and equitable sharing of benefits arising from these resources. As such the project will advance the commitment of the GOJ to a number of international conventions that have already been signed and ratified, notably the Convention on

Biological Diversity (CBD); the Convention to Combat Desertification (CCD) and the Framework Convention on Climate Change (FCCC).

Meeting regional objectives. The project would address existing and potential threats to the Jordan Rift Valley through an integrated ecosystem management and local development program. It would expand World Bank/GEF support for Jordan to meet its obligations under the CBD, including key national policies and strategies for biodiversity conservation, including the National Environment Strategy (1992), the National Environment Action Plan (1995), and the National Biodiversity Strategy and Action Plan (2003). It would also support the implementation of sustainable development strategies as recently adopted in new articles under the Agricultural and Environment Laws (2002 and 2003 respectively). These documents emphasize the GOJ's commitment to safeguarding important natural habitats and ecosystems within the framework of socio-economic and community-based approaches. Through its integrated approach, the project would be fully consistent with the CAS for Jordan by simultaneously addressing issues of land degradation, desertification, industrial pollution, and threats to natural and cultural heritage, as well as poverty alleviation and human development.

B. PROJECT DESCRIPTION

1. Lending instrument

In line with other GEF project for biodiversity conservation, the project is supported by a grant to the GOJ. The GEF grant, which funds incremental costs, is the appropriate funding mechanism for the proposed integrated ecosystem management effort.

2. [If Applicable] Program objective and Phases N/A

3. Project development objective and key indicators

Project development objective and outcome indicators. The project development objective is to mainstream integrated ecosystem management (IEM) practices in the Jordan Rift Valley pilot areas. Two key outcome indicators include: a) seven integrated land use management plans with bio-diversity conservation measures in place with participation of all stakeholders and agencies, and b) the total number of hectares in the four PAs (56,950ha) are under sustainable management, as recorded by the biodiversity-tracking tool. The intermediate results include: biodiversity conservation measures introduced into land use planning in the JRV; standard of living of local communities in the vicinity of the protected areas improved through biodiversity friendly alternative livelihoods; biodiversity management capacity enhanced in the four (Yarmouk, Fifa, Mas'uda, Qatar) protected areas (PA); mechanisms for sustainable financing of biodiversity conservation in place for the four PA; and institutional strengthening and enhanced stakeholder capacity for integrated ecosystem management practices. Annex 3 details the outcome indicators and intermediate results to achieve the development objective.

4. Project components

Introduction to the project. The project design is based on the Protected Areas Review (1999), and includes five components. The first three are designed to safeguard globally significant biodiversity and restore ecological integrity along the Jordan Rift Valley. These three components will first establish sustainable IEM throughout the Rift Valley and provide alternative livelihoods and community development program, while reinforcing the protected areas network along the Rift Valley. Two additional components were formulated to support the three primary component activities, as it pertains to securing sustainable financing, and strengthening institutional and community capacity. The Royal Society for the Conservation of Nature (RSCN), a non-government organization, will implement the project with the support of the PMU. The PMU will be guided by a Steering Committee to be chaired by the Director of RSCN. The PMU can be qualified as a semi-integrated PMU as it will use the existing facilities of the RSCN (including field offices) augmenting them with the technical support of the Advisory Team composed of national and international consultants. The project is envisaged to have a duration of 6 years at a total cost of US$ 12.6 million of which US$ 6.50 million is funded by the GEF. The following paragraphs describe all components. Annex 4 provides a detailed project description, while Annex 5 identifies the project costs.

Component 1: Assessment and Planning for Integrated Ecosystem Management
(Total USM $ 2.01: GEF USM $ 0.97 and Co-financing USM 1.04)

The objective of this component is to assist the GOJ in mainstreaming biodiversity conservation into the land use planning in the Jordan Rift Valley. The sub-component output activities include:

Output 1.1 Strategic Environmental Assessment (SEA) for the Jordan Rift Valley completed
Output 1.2 Recommended policy and institutional reforms to implement SEA
Output 1.3 Legislative and policy review to empower local communities to participate in land use planning.
Output 1.4 Recommendations identified in SEA piloted

The GEF incremental activities will create a better enabling environment and strengthen national capacity for IEM and LUP. This is inclusive of establishing a legal and institutional framework for biodiversity conservation, a critical element in confirming protected and defining mechanism for biodiversity conservation. Initially, the effort will target demonstration sites with a vision that ultimately the IEM process will result in the development of a comprehensive land use master plan (LUMP) covering the entire JRV. In order to achieve this, the role and responsibilities of the various institutions and agencies that are currently involved in the planning will be streamlined and capacity will be built in these institutions with regard to IEM and its implications for LUP. Initially, there will be the development of SEA capabilities in the various departments, which will be important to have a mutual understanding of the resources and issues. Furthermore, the legal framework will be revised if necessary to create a mechanism by which decision making power in the planning and management of natural resources and the related competences to do so are transferred to communities. The latter is based on an analysis of the

institutional and legal framework, which identified several gaps which limit the full participation of the communities in the management of their environment. The project will focus on seven IEM demonstration sites namely: Yarmouk River IEM Area, Jordan River IEM Area, Mujib North IEM Area, Mujib South IEM Area, Fifa IEM Area, Qatar IEM Area, and Ma'suda IEM Area. These seven areas were selected in partnership with counterpart organizations (ministries, agencies as well as the Steering Committee), while considering the following points: a) coverage and diversification of the major ecological zones in the JRV, b) coverage of the four selected Protected Areas and Important Bird Areas and their adjacent land areas, c) ecosystem connectivity (i.e. ensuring that a conservation corridor is ensured along the JRV), d) presence of globally significant biodiversity assets and vulnerability of local ecosystems, and e) coverage of areas with observed unsustainable development (specifically in the area of agriculture or tourism) putting the biodiversity conservation in the adjacent proposed protected areas at stake.

Component 2: Socio-economic Mitigation Measures for Alternative Livelihoods
(Total USM $ 1.96: GEF USM $ 0.06 and Co-financing USM 1.9)

The primary objective of this component is to improve community economic development through alternative livelihoods and poverty alleviation projects in a biodiversity-friendly manner. The sub-component output activities include:

Output 2.1 Community action plan for alternative livelihoods adopted
Output 2.2 Alternative livelihood activities are operational and viable in piloted areas
Output 2.3 Lessons learned from alternative livelihood demonstration projects documented and promoted

The component outcome provides supplementary or alternative livelihoods, based on the Dana NR model. Experience obtained, and lessons learned from this model need to be studied and integrated in the development of interventions for the new pilot areas. Some additional activities need to be established as for instance it is recognized that the Dana model had its limitations, especially in areas such as Fifa and Qatar, which have a limited tourism potential. It is of utmost importance that this livelihood programme should be sustainable, and does not impinge upon the conservation value of the reserve, nor has other environmental impacts. As the success and impact of some of the interventions is not known beforehand, pilot and demonstration projects will be established and the results of these alternative livelihoods programme will be closely monitored. The monitoring system will therefore include indicators and indices that are linked to and provide insight in poverty reduction and livelihood improvement. Possible indicators that could be considered in this regard are: the number of men and women employed; the increase in income at village level, the degree of diversification in employment. The PMU will be responsible for the M&E system and will ensure that regular monitoring takes place. GEF funding will primarily provide catalytic support to initiate the baseline survey for the action plan and provide incentives for possible interventions. Positive examples of interventions and alternative livelihood will be duplicated, through an extension and awareness-raising programme.

Component 3: Capacity Building for Expanded Protected Area Network
(Total USM $ 6.04: GEF USM $ 4.35 and Co-financing USM 1.69)

From the 1999 Protect Area Review, the RSCN together with specialists and officials, evaluated exitsting protected areas (PA) and identified priority area for biodiversity protection. Details of priority wetlands and migratory corridors in the JRV and the selection criteria and evaluation process for the selected PAs, are detailed in Annex 20; together with site description details, land use, and existing conditions of the PAs. Therefore, the objective of this component is to expand and improve the existing Protected Area system in the Jordan Rift Valley. The sub-component output activities include:

Output 3.1: Four new protected areas officially designated.
Output 3.2: Protected Area management plans are in place and operational.
Output 3.3: PA staff teams recruited, trained and in place.
Output 3.4: Facilities developed at four new PAs and at Mujib NR.

This will be achieved by providing RSCN with information, infrastructure and capacity building support so that this organization is equipped to implement effective PA management in new and/or expanded Protected Areas. Four new Protected Areas have been identified namely: Yarmouk, Fifa, Mas'uda and Qatar. Each of these four sites harbor more than 20 globally significant species, including threatened migratory birds, rare plants and fish, and threatened mammals, and serve to add as yet unprotected habitat types to Jordan's Protected Area network. In order to be able to optimally target management interventions in the proposed PAs, and to assess if the project is achieving its conservation objectives, a comprehensive baseline of ecological, natural resource and socio-economic status will be established. Simultaneously, management plans will be formulated for all four proposed PAs, based on a participatory approach, involving all the stakeholders. The local community members will play an important role in the implementation of the management plan. The establishment and management of four new PAs will require a significant expansion of RSCN's field-based staff: these will need to be recruited and trained, as a pool of appropriately trained specialists in the field does not exist in Jordan outside the existing PA network. In addition to that, the four new PAs will require basic facilities such as offices, meeting rooms, visitor centers and staff housing, and be equipped with reliable electricity and water supplies. Furthermore, they will require office equipment, communication systems, and transportation arrangements. Finally, the project is, apart from establishing four new PAs, expected to provide infrastructural support to the already existing Mujib NR, which was established in 1987, but needs urgent upgrading of its facilities.

Component 4: Sustainable Financing Mechanisms
(Total USM $ 1.34: GEF USM $ 0.00 and Co-financing USM 1.34)

This component has an overall objective to establish a sustainable financing system for biodiversity conservation in the JRV. The sub-component output activities include:

Output 4.1 Defining sustainable financing mechanisms
Output 4.2 Sustainable financing mechanisms in place and operational

Sub-component activities are designed to promote partnership arrangements between communities and external sources of financing outside of the GEF to sustain ecosystem management schemes. The anticipated financing sources and mechanisms could include: income generation activities (e.g. ecotourism) from private sector partnerships, funding from the state budget, donations from intra-community organisations, revenues generated from the from protected areas entrance fees, contributions from international foundations and NGOs and / or national environmental funds such as a Biodiversity Enterprise Fund.[2] One concrete example of such a financing source is the already established Jordan Fund for Nature. The project will direct activities to increase the capital base of this existing fund.

Component 5: Capacity Development and Monitoring and Evaluation
(Total USM $ 0.90: GEF USM $ 0.77 and Co-financing USM 0.13)

The objective of this component is to strengthen institutions and enhance stakeholder capacity for integrated ecosystem management practices. The sub-component output activities include:

- Output 5.1 Institutional and community needs for enhanced biodiversity conservation identified
- Output 5.2 Institutional strengthening recommendations implemented for government agencies
- Output 5.3 Enhancing capacities of NGO and community organizations
- Output 5.4 Monitoring and Evaluation Program effectively implemented
- Output 5.5 Dead Sea Panorama Center, for biodiversity conservation and environmental management operational
- Output 5.6 Project managed successfully

The component activities will strengthen capacity to enable institutions manage ecosystems. Specifically, this will include outreach activities, as well as strengthening the capacity of the RSCN, and together with the PMU manage the project and conduct the requisite monitoring and evaluations.

Institutional and community capacity development is necessary to achieve the project's intended goal of economic development and improved biodiversity conservation. To support the capacity building process in the GEF project, training at several levels and in various topics will be conducted. Initially, a capacity assessment and the training needs will be identified. Based on the assessment, a training and capacity building plan will and implemented. At the national level, the plan will address policy development, enforcement and monitoring, land use planning for government representatives. Institutional reform will focus on bringing in place mechanisms for efficient information sharing and decision-making. At the local level (PA), the plan will address training for reserves staff, local (decentralized) government officials in LUP, and support to extension services in the promotion of more sustainable agricultural techniques. At the community level, the plan will address community development, institutional strengthening of communities, training to local communities in business development, training in alternative livelihoods, inclusive of NGOs and community organisation. The PMU will be integrated into

[2] A BEF investment funds make biodiversity or conservation a critical part of the operational mission. A BEF biodiversity enterprise also support compatible economic development
http://guide.conservationfinance.org/chapter/index.cfm?Page=1

the RSCN to assist in building capacity and manage the project successfully, inclusive of overseeing and conducting the monitoring and evaluation program.

5. Lessons learned and reflected in the project design

Building on experiences in the region. Though this is the first major project in Jordan focusing on integrated ecosystem management, the project design is based on lessons learned from experiences gained in other community driven protected area and natural resource management projects detailed in Annex 2. Specifically, important lessons in the area of community involvement and the creation of alternative livelihoods in Jordan have been drawn from the GEF/UNDP Dana Nature Reserve (DNR) project, which was considered to be highly successful.[3] This project builds on the RSCN capacity building and legal and regulatory efforts initiated under the DNR and demonstrated that communities can be successfully engaged in the land use planning approach for sustainable development. In addition, strengthening the RSCN necessitates an integrated capacity building approach. In an effort to supports the Bank's recommendation that stand-alone project management units (PMUs) be mainstreamed into existing structures, the PMU will work closely with the RSCN to be consistent with the Bank's mission of capacity development and institutional strengthening.

Participation. As stressed in the GEF medicinal plants project, as in the Dana project, local participation and stakeholder engagement in the preparation and review process is critical for engagement and quality deliverables. Local knowledge and local engagement can ensure the success of a project. From the lessons learned of the GEF-SGP,[4] for successful community based activities, project design and funding should be extended for 6-8 years, to allow sufficient time for the activities to complete. As designed within this project, emphasis is placed on early and continual participation of the stakeholders, and on gaining a good assessment of the pressures relating to the social, political, and economic aspects of the project environment. Training, education and public awareness are integrated at all institutional and stakeholder levels.

Community organization. Community members are the managers of the land. They are the owners and/or users, and consequently have to take decisions with respect to land use. Different groups of people (community representatives) should be involved in planning its future use in order to ensure the accomplishment of the management objectives defined by the community members and make them committed and responsible to the required management activities. The task of improving the productivity of a planning area and preventing it from degradation is difficult. Different people in an area make different uses of the land and claim their own rights. Therefore, the task can only be implemented if community members work together, are willing to compromise and organize themselves, and develop and implement rules and regulations for the use of their land.

Controlled use of resources. Community members have to control their land use in order to manage it properly. Sustainable use of the hillsides and farmlands requires a proper timing of use

[3] In Jordan's Dana National Park local communities now profit from sales of dried fruits and ecotourism while maintaining some of the region's indigenous agrobiodiversity and native fruit trees.
[4] GEF/SGP Country Programme Strategyg for Jordan:
http://stone.undp.org/maindiv/gef/biodiversity/lesson_one/lesson_oneny.htm#hd1

in the right intensity. Hence, controlled use involves decisions on which areas should be used, how, when and by whom, as well as mechanisms for enforcement of the decisions. Improved productivity of land areas is impossible to attain without controlling these activities. It requires commitment of all users and adherence to locally determined rules and regulations with respect to agricultural development and grazing of livestock.

Agreed distribution of rights, concessions, and obligations. An agreed upon distribution of rights, concessions and obligations concerning management of hillsides and communally used lands among all interest groups involved is crucial for sustainable management.

Integrated approach. Considered within the context of an integrated conservation development project, this project will consider the lessons learned from other projects, and work within the five conditions success for any conservation effort and ensure a) there is clarity in conservation goals and objective; b) equitable and effective social processes and alliances (partnership and participations); c) appropriate incentive for biodiversity valuations and conservation; d supportive policies (local, national and international); and sufficient awareness knowledge and capacity to conserve biodiversity; and within these parameters defining clear indicators for flexible and adaptive management and sustainable use of the resources.

Gender specific. The community based land use planning should be gender specific. This means that during the planning process attention is paid to the different roles of men and women in the various land uses. In every society, women and men have different roles and responsibilities, and they have access to different resources and benefits. These differences are rooted in social organization, cultural beliefs, and values and biological make up.

Poverty orientation. Poor members of a community are usually relatively more dependent on natural resources, and poverty is one reason for the overexploitation of natural resources for achieving short-term benefits to meet a desperate need. Addressing the needs of the poor members of the communities is a prerequisite for consensus, integrated use and agreement on sharing costs and benefits. This is also realized by all major international and bilateral development organizations, including the World Bank, who have declared poverty alleviation as the over riding goal in development activities.

6. Alternatives considered and reasons for rejection

The project preparation team had considered the following alternative options in implementation strategy and approach:

- *Number of protected areas.* A "long list" of more than four new protected areas was considered before, but not all ranked sufficiently high when rated based on selection criteria (refer to the technical report on Protected Area Management). In addition, a larger number would entail too high an increase in demands for additional staff and facilities. The number of four is a compromise between reasonable increase in demands, on the one hand, and a minimum number to achieve establishment of a system of protected areas on the other hand.

- *More centralized approach to introduce IEM.* The option of a centralized top-down approach towards the introduction of IEM was rejected because of the limited capacity and ability available in government agencies in this field. In a top-down approach, all relevant agencies would have to be made fully capable of undertaking the task of implementing IEM as a blanket approach in their mandate area, before contacting local communities. This would require too large an effort going beyond the capacity of one single project. Instead, a strategic "bottom-up" approach has been formulated with a much greater emphasis on community participation (also in designation of protected areas) and starting in areas where problems of biodiversity conservation need to be tackled most urgently.

- *More IEM pilot areas and a broader scope of activities.* The same applies as for the number of protected areas: more IEM pilot areas would require more staff and facilities. Also, IEM is new to Jordan and a modest introduction rate is required in order to avoid exceeding absorption capacities.

- *Decentralized RSCN.* Currently, RSCN is present at decentralized levels through the existing protected area management teams/offices. Existing facilities in protected areas are not sufficiently large to host also many project staff. Discussions on decentralization of the head office are taking place within RSCN, independently from the present project proposals. For the project, the option has been considered of designing a more decentralized structure, parallel to, and based on, a more decentralized structure of RSCN itself. The project would then operate from decentralized, regional RSCN offices. This option was not considered feasible and has been abandoned. The time is too short to guarantee a proven successful decentralization of RSCN, serving as a basis for decentralized project implementation, before the start of the GEF project. The project already sets substantial requirements for RSCN to enlarge its structure, let alone to decentralize it.

C. IMPLEMENTATION

1. Partnership arrangements (if applicable)

The project will engage a range of partnerships, including:

The GEF's Small Grant Program: The GEF SGP has supported more than 100 projects in Jordan of which more than 50% address issues related to bio-diversity. RSCN is involved closely in the implementation and management of the Jordan country program.

The MOP's Enhanced Productivity Program (IRADA) and its support to small-scale enterprise development, with NGOs (i.e. the Jordan River Foundation's) to support the alternative livelihood efforts.

The IUCN: the organization has declared its willingness to share in financing by allocating 20% of key staff to project activities in particular in the capacity-building component relevant to protected areas development and management. RSCN and IUCN have developed and signed a memorandum of technical cooperation in 2005 and detailed agreements will be developed between the two organizations on a quarterly basis.

The Jordanian Hashemite Fund for Human Development (JOHUD): RSCN, through its agreement with IUCN, will profit from the already established cooperation between IUCN and the Jordanian Hashemite Fund for Human Development – JOHUD, active in community development and specialized in Participatory Rural Appraisal, community action plan preparation, local level training. JOHUD has a network of community development centers throughout Jordan, 10 of which are located in the Jordan Rift Valley. JOHUD has already expressed its readiness to strategic cooperation with RSCN, including cost sharing.

The Ministry of Tourism and Antiquities (MOTA): The Ministry has offered to the RSCN to manage the Dead Sea Panorama Center under a renewable 5-year agreement. The Panorama Center is a large new visitor centre situated on an elevated vantage point at the edge of Jordan Rift Valley, overlooking the Dead Sea. It has the potential to become an instrument for local community development by providing a marketing outlet for the products of the socio-economic initiatives included within the GEF project document. This arrangement will allow the RSCN to use the Centre to serve its nature conservation objectives and to retain the revenue generated by the Centre to support its running costs and activity programs.

The USAID: the GEF project will also coordinate with USAID, in which the general intention is to further develop eco-tourism (and associated crafts) in and around RSCN protected areas so that it provides a much bigger sector of the Jordan tourism industry and makes a major contribution to nature conservation and community development.

Donors who are interested to substantially increase RSCN's trust fund – Jordan fund for Nature.

2. Institutional and implementation arrangements

The project would be implemented over six years. Primary coordination would be provided by the Ministry of Planning (MOP) and the RSCN. The RSCN will be the executing agency. Within the context of the World Bank OPCS guidelines, the Project Management Unit (PMU) will be "semi-integrated" within the existing structure of the RSCN augmenting them with some capacity. RSCN has a mandate to manage and control protected areas and its enforcement power has been recently expanded to all aspects of the agricultural law. However, outside the protected areas, RSCN will also work closely with other institutions who have been actively involved on IEM and LUP concepts and practices, such as land communities and land owners (private owners, line ministries and regional authorities such as the Jordan Valley Authority and the Aqaba Special Economic Zone Authority). Detailed implementation arrangements are described in Annex 6.

The institutional analysis has identified that, at present, there is a weak legal and institutional framework for integrated ecosystem management in Jordan, with limited capacity and knowledge in this area. This project will be the first that addresses IEM and LUP in an integrated way and relates it to development planning. The institutional structure will be addressed by the project at two different levels. Firstly, an institutional environment will be created that supports and addresses biodiversity conservation concerns in a more focused and effective way, while setting targets and preparing development plans for the JRV. Presently, biodiversity conservation

is the explicit goal of only one ministry (Ministry of Environment – MOEnv) and of a small number of NGOs, with RSCN as the key player among them.

Secondly, capacity for IEM/LUP is to be mainstreamed in the various institutions and agencies and related functions and responsibilities are to be identified. As mentioned above several agencies are, or feel, responsible for LUP at present or for certain aspects of it (JVA, MOA, ASEZA), but all have limited or no capacity. Those who have prepared land use plans for substantial areas (JVA mandate area and ASEZA) have contracted its preparation to consultants without ensuring capacity building in the organization itself. LUP, as it has been done so far, should rather be described as land designation and is not consistent with up-to-date LUP and IEM concepts.

A comprehensive review of the legislation and regulatory and policy framework relating to IEM and LUP will be carried out. Bottlenecks for the inclusion of local stakeholders in the planning process will be identified and options to tackle these proposed and accepted. The project will support the review of the existing legal framework for environmental protection and governance and promote the enforcement of laws and regulations

Specifically the project will support this policy review through:

- Its assistance to amending or if needed promulgating laws that allow for the involvement of local communities in the planning, conservation and management of biological resources.
- Strengthening the institutional capacity of agencies responsible for Land Use Planning and Integrated Ecosystem Management.
- Drafting and implementing Land Use Plans that include activities and projects that consolidate and integrate development and resource use with biodiversity conservation and environmental protection.

3. Monitoring and evaluation of outcomes/results

Monitoring & Evaluation and reporting. The project will design a well-functioning M&E system to ensure that the financial expenditures are at par with achieving project outcomes and results. The M&E system is critical to ensure the project's timely and successful implementation. The envisaged participatory monitoring system to be established will also become a means of institutional learning. Accordingly, the role of M&E is not considered to be a control instrument but primarily a mechanism for improved planning and implementation of the program in cooperation with the stakeholders. The PMU, together with the RSCN, will be responsible for M&E. In order to monitor the project's progress and impact (especially in the area of livelihood improvement and biodiversity conservation), baseline surveys will be carried out at the start of the project. Data collected from the baselines and M&E activities will be entered in a management Information System to be established at the PMU HQ. Reporting formats for the various components and activities within them will be developed, including targeted annual performance objectives and monitoring indicators, using the Results Matrix in Annex 3 as basis. Quarterly progress reports will be prepared, which will address the progress in project implementation, the use of funds and the project's impact. The quarterly reports will be consolidated in an annual report by the PMU. The progress reports will apart from an update on

the projects achievements and progress also include a work plan and budget for the following year. The formats of the reports will be in line with Bank requirements. There would be a project evaluation after two years and four years, followed by a final evaluation. Lessons learned during the evaluations and recommendations for improvements will be used to restructure the project and adapt project interventions, if required. The RSCN is aware that GEF is in process of developing a Project Information Form for Biodiversity (PIFB). The PIFB is a critical tool to collect information to track the progress of the biodiversity portfolio against the agreed Biodiversity Strategic Priorities, particularly the targets and indicators of achievement set out in Council approved paper on GEF Strategic Planning: Directions and Targets.[5] All approved GEF biodiversity projects will be required to fill in the PIFB, which is for monitoring of project results.

4. Sustainability and Replicability

Indication of Recipient Commitment and Ownership. The importance that the Government of Jordan places on integrated ecosystem management and the conservation of biodiversity is demonstrated by a number of major steps undertaken in this direction:

- The Government of Jordan has already signed and ratified a number of international conventions, notably the Convention on Biological Diversity (CBD); the Convention to Combat Desertification (CCD) and the Framework Convention on Climate Change (FCCC);
- GOJ is fully aware of the fragility and threats towards the unique ecosystems existing in the JRV and the need for conservation measures and improved ecosystem management and land use planning. This was amongst others reflected in the National Environment Action Plan Working Paper (1995) as well as in the Jordan Country Study on Biodiversity (1998);
- The commitment of the Government of Jordan is furthermore reflected by the fact that it has been one of the most successful countries in implementing key community driven and conservation-based development projects, of which the above mentioned Conservation of the Dana Reserve Project, and the Conservation of Medicinal and Herbal Plants Project are examples;
- RSCN has been entrusted with the responsibility to manage the protected area systems and has recently been given the responsibility of implementing and enforcing the hunting law; and
- In January 2001, the GOJ signed a letter of endorsement in which it requested assistance from the World Bank and GEF in preparing a project on Integrated Ecosystem Management in the Jordan Valley and stated that the project concept was in accordance with national development and environmental priorities relating to the conservation of biodiversity.

Sustainability. The institutional sustainability of the project will be guaranteed through: capacity building in relevant areas of all stakeholders (government agencies, NGOs and community

[5] These biodiversity strategic priorities, consistent with the Operational Programs, guidance from the Conventions, and country priorities, were presented in the form of an information document (GEF/C.21/Inf.11) and can be accessed through: http://www.gefweb.org/Documents/Council_Documents/GEF_C21/C21.Inf.11-_Strategic_Business_Planning.pdf

organizations) at national, regional and local level; the adaptation of legislation and the regulatory and policy framework, in order to support IEM and community involvement in LUP; the streamlining of institutional responsibilities in the areas of IEM and LUP; the introduction of a planning process based on a SEA. In order to warrant the social-economical sustainability local communities will be organized and awareness will be created with regard to the importance of integrated ecosystem management and biodiversity conservation. The local community members will be actively involved in the planning and implementation of ecosystem management plans. Alternative livelihoods and income generating activities will be introduced based on the experienced gained in the Conservation of the Dana and Azraq Protected Areas project[6]. Part of the Dana experience is the explicit policy to employ local people as staff in protected areas. Today, the entire Dana reserve is run by the local communities and more than one thousand people benefit directly and indirectly from the income-generating activities of the reserve. The financial sustainability will be created by the expansion of the Jordan Fund for Nature, which is used to operate and maintain protected areas. A Biodiversity Enterprise grant program will be established to stimulate and support private sector entrepreneurial initiatives that generate profit and contribute to biodiversity conservation. A mechanism for revenue collection and reinvestment of income in PA and IEM activities will be developed. Technical sustainability of the project will be ensured by enhanced integrated ecosystem management through appropriate land use planning which combine habitat protection and biodiversity conservation with sustainable development through the introduction of improved agricultural practices and alternative livelihoods. Furthermore baseline surveys will be carried out which describe the ecological and socio-economic conditions in and around the Protected Areas. These data will be entered into a developed MIS system, which can be used to monitor progress and impact. Four new protected areas will be designated and registered.

Replicability. The replicability of interventions is of utmost importance and forms an integrated part of the implementation strategy, based on a process of learning by doing, which focuses on the dissemination and expansion of positive experiences in the area of IEM, and alternative livelihoods. RSCN has already identified priority areas for post-project replicability based on the Jordanian National Biodiversity Strategy and Action Plan. These areas are both located within the Jordan Rift Valley, such as the Aqaba protected area, and outside the Rift Valley such as the Burqu reserve in the Eastern Desert. Other areas for post-project replicability will be determined, based on findings from the SEA and LUMP planning process, through a similar criteria-based stakeholder engagement process used in defining the GEF project sites. The SGP's funds will be used to explore and assess the replication of the protected areas based on lessons learned from the project.

5. Critical risks and possible controversial aspects

The Government of Jordan, assisted by the Bank and the GEF has heavily invested in adequate institutional capacity to handle preparation and implementation of natural resources management projects during previous years. However, the scale and multi-disciplinary nature of the project poses a risk in identifying and implementing clear and simple institutional arrangements for effective collaboration between the government agencies, NGOs and other stakeholders. A series of consultation workshops involving all relevant stakeholders would be conducted during project

[6] UNDP JOR/92/G31

preparation to identify and agree on an appropriate institutional plan that unambiguously defines roles and responsibilities.

The critical importance of integrated land use planning to the success of the project represents a potential risk because it is currently poorly developed in rural areas of Jordan and there are no integrated land use schemes under implementation that address biodiversity conservation needs and could serve as pilots. Given this scenario, the complexity of land ownership issues, and the variety of different development objectives in the Rift Valley, the government and municipalities (and any other major stakeholder) will need to take the lead developing pilot land-use programs in the Valley at an early stage in the project's development. Detailed proposals for such pilots will be prepared during the PDF phase and approvals in principal secured before project implementation begins.

6. Loan/credit conditions and covenants

Grant conditions for effectiveness, as agreed during appraisal, are summarized in section D.7.

D. APPRAISAL SUMMARY

1. Economic and financial analyses

Project financing. The project builds on biodiversity conservation activities initiated by the DNR project. The project will fund only those incremented needed to operationalize project actives and not RSCN operations. The project financing is presented in Annex 9 and summarized in Table 1.

Table 1 Project Financing

Component	Total costs (US $ M)	% of total	Co-financing (US $ M)	% of Co-financing	GEF Financing (US $ M)	% of GEF Financing	World Bank Financing (US $ M)	% of WB Financing
1. Assessment and Planning for IEM	2.01	16.0	1.04	17.0	0.97	14.8	0	0
2. Socio-econmic Mitigation Measures for Alternative Livelihoods	1.96	15.6	1.90	31.1	0.06	1.0	0	0
3. Capacity Building for an Expanded Area Protected Area Network	6.04	47.9	1.69	27.7	4.35	67.0	0	0
4. Sustainable Financing Mechanisms	1.34	10.6	1.34	22.0	0	0.0	0	0
5. Capacity Development and Monitoring and Evaluation	0.90	7.1	0.13	2.1	0.77	11.8	0	0
6. PDF-B	0.35	2.8	0	0	0.35	5.4	0	0
Total Project Costs	**12.60**	**100**	**6.10**	**100**	**6.50**	**100**	**0**	**0**

Incremental cost analysis. An incremental cost analysis was undertaken (see Annex 15). In this chapter, the additional costs accruing to Jordan for protecting its important biodiversity base are spelled out. The project is designed in such a way that it tries to obtain cost effectiveness by

minimizing budget impact, maximizing the involvement of local stakeholders, and building on previous experiences and lessons learned. The incremental costs are specifically targeting activities that contribute to the conservation of biodiversity and ecosystems that have a global significance. It is expected that GEF's contribution towards incremental costs would be around US$ 6.5 million inclusive of US$ 0.35 million from the PDF preparation grant, with estimated additional contributions of US$ 6.10 million through co-financing from RSCN, GOJ and others.

2. Technical

Technical gaps in capacity and knowledge in the area of IEM and LUP have been assessed during the PDF-project preparation phase and were reported in a separate report "Capacity Development and Training Needs Analysis". The analysis revealed that a large-scale capacity building and training program will be required to support the activities related to IEM and LUMP, alternative livelihood and income generation and to ensure the establishment and enlargement of the Protected Areas. In order to do this, training and awareness will be provided at several levels: the national, local and community level, involving various stakeholders. The project will work in pilot IEM areas to integrate development activities with environmental and biodiversity related concerns. Therefore, models of best practices and alternative livelihoods will be established with the goal to replicate these in other area and thus contributing towards mainstreaming IEM. In order to achieve this, the project will follow a participatory approach that includes all major stakeholders.

3. Fiduciary

Project costs and co-financing. The total costs for the implementation of the proposed project are estimated at US$ 12.60 million, inclusive of US$ 0.35 million PDF preparation funds. The contribution of the GOJ and RSCN is estimated to be US$ 1.5 million and US$ 2.0 million respectively, with an additional US$ 2.6 million to be co-financed by other agencies. This co-financing amount mainly covers a substantial contribution towards primarily national benefits. The incremental costs, which generate the global environmental benefits, will be financed through the GEF grant and will be as mentioned above at the amount of US$ 6.15 million.

Fiscal impact. The project is not expected to have a major financial impact on GOJ's budget. The total non-GEF financing during the implementation period is estimated at US$ 6.10 million. The GOJ is committed to cover US$ 1.5 million or 24.5 % of the non-GEF financing and 11.9% of project costs. RSCN has committed itself to contributing US$ 2 million, 15.8% of the total project costs. The annual contribution from the side of GOJ represents a negligible amount of its total recurrent budget.

Procurement. The procurement of goods and services will be coordinated and supervised by the Contracts and Procurement Officer in the PMU, who works under the Project Director. All procurement of goods, works, and services, financed in whole or in part by GEF funds would be by competitive bid and contracted in accordance with the World Bank procedures and guidelines. In addition, when selecting, contracting, and monitoring consultants for the project activities, the GOJ will abide by the guidelines set by the World Bank (Refer to Annex 8).

Disbursement. To facilitate project implementation and disbursement against eligible expenditures, a Special Account will be established in the Central Bank of Jordan, that will be operated under terms and conditions satisfactory to the Bank (refer to Annex 7). The Special Account would be replenished based on withdrawal applications, which have to be supported by the appropriate documentation.

Auditing. The PMU will - as mentioned above - appoint an independent auditor, acceptable to the World Bank, who will undertake an annual audit in accordance with the International Standards on Auditing. The auditor will give an opinion on: (i) the project's financial statements (project balance sheets, accounts statements and cash flow charts); (ii) the statement of expenses and the Special Account. The audited financial statements will together with the auditor's comments and opinion be forwarded to the World Bank within six months after the end of the financial year.

4. Social

The project has crosscutting social benefits as it contributes to the ecological integrity and socio-economic development in Jordan River Valley as a regional effort. At the national level, enhanced capacity in IEM of government agencies, NGOs and communities and income generation and alternative livelihoods especially geared towards disadvantaged community members and women. The primary beneficiaries of the project would be the communities living in and around the seven IEM pilot areas. Marginalized groups, including women, herders and other underprivileged groups will be actively targeted to ensure that they receive their share of benefits from project activities and are able to effectively participate in decisions regarding LUP in general and the development of their community in particular. Good management practice and alternative livelihoods will be a primary activity for sustainable economic development in the vicinities of the protected areas. Project staff - in partnership with government and NGO staff - will support communities in theses IEM areas, in participatory assessments and in the IEM/LUP preparation and implementation. Government and NGO staff will benefit from the capacity building activities and will therefore be indirect beneficiaries.

Since the project has, as one of its objectives, to introduce alternative livelihoods and income generating activities to improve the socio-economic situation of rural communities, it will ensure that community participation, social organization and mobilization activities will be carried out to form interest groups or village development organizations. Participatory approaches will thus be part of the project's IEM and LUP methodology, to ensure that the problems and concerns of local communities are incorporated in the local action plans. As part of the LUP process, and preparation of the alternative livelihood action plan, baseline socio-economic surveys will be carried out through participatory rural appraisal (PRA) and rapid rural appraisal (RRA) methods in which data on the socio-economic status of the community members and the social relationships will be collected. Through this, a sense of ownership is created and the community members are encouraged and feel responsible to implement these plans themselves. As it pertains to the OP 4.12 Involuntary Resettlement, in evaluating the status of the proposed protected areas, reviewing the current activities, consulting with the RSCN, and analyzing the proposed PA and IEM activities, it was determined that there would not be any land acquisition or physical or resettlement or economic displacement. Therefore, OP 4.12 would not be triggered; consequently, there is no need for a Resettlement Policy Framework or Resettlement Policy

Plans for each site. However, if a situation arises, during project implementation, where the issues of land acquisition or economic displacement becomes an issue, the RSCN will put in place a resettlement instrument in compliance with OP 4.12.

This process necessitates training and capacity building. The project will include participatory techniques and gender sensitization as topics in the training program. For the involvement of communities in alternative livelihood activities, the project will build upon the lessons that were learned in previous and on-going projects in the JRV. The major stakeholders that have been and are involved in the project design and implementation are described in Annex 17 (Stakeholder involvement plan). The project will interact with the different stakeholder groups, local communities, on various occasions and in different capacity. The project will establish a M&E system that will be based at PMU level. This M&E system will monitor the performance of the project towards the achievements of the social development outcomes, included in the different project components, in general and in the component relating to alternative livelihoods in particular.

5. Environment

The project is classified as a Category B project and the GOJ has prepared an Environmental Assessment (EA), consistent with the requirements of OP 4.01 and an Environmental Management Plan (EMP) was prepared as part of the EA. All activities are designed to improved the ecosystem and socio-economic conditions. Potential adverse environmental or social impacts will be minor and can be avoided or minimized through appropriate preventive actions and mitigation measures. Some of the interventions and activities to be carried out under the alternative livelihood and income generation component could potentially have a negative impact on the environment. This will be reviewed prior to implementation and mitigation measures put in place. Similarly, project activities to be financed through the Biodiversity Enterprise Grant Program will be screened on their impact on the environment prior to acceptance. The RSCN/PMU will be responsible for the development and implementation of a detailed M&E system, and implementation of the Environmental Management Plan.

6. Safeguard policies

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP/GP 4.01)	[X]	[ ]
Natural Habitats (OP/BP 4.04)	[X]	[ ]
Pest Management (OP 4.09)	[ ]	[X]
Cultural Property (OPN 11.03, being revised as OP 4.11)	[ ]	[X]
Involuntary Resettlement (OP/BP 4.12)	[ ]	[X]
Indigenous Peoples (OD 4.20, being revised as OP 4.10)	[ ]	[X]
Forests (OP/BP 4.36)	[ ]	[X]
Safety of Dams (OP/BP 4.37)	[ ]	[X]
Projects in Disputed Areas (OP/BP/GP 7.60)*	[ ]	[X]
Projects on International Waterways (OP/BP/GP 7.50)	[ ]	[X]

* *By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas*

7. Policy Exceptions and Readiness

a) Year-one procurement plan will be prepared prior to appraisal.
b) The Terms of Reference for the RCSN and PMU prepared and agreed upon prior to negotiations.
c) The members of the Project Steering Committee are identified and Terms of Reference prepared prior to negotiations.
d) The Manual of Procedure and Project Implementation Plan is in form and substance acceptable to the Bank.

Annex 1: Country and Sector or Program Background

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

Jordan Rift Valley physical and biodiversity characteristics

The Jordan Rift Valley is part of the Great Rift Valley, and extends from Yarmouk in the north, to the Gulf of Aqaba in the south, over a length of 370 km. The Jordan River has a basin of 18,194 km² and flows southwards for a total length of 230 km through Lebanon, Syria, Israel, West Bank and Jordan and finally into the Dead Sea. The Jordan Valley in Jordan consists of the Northern Ghor (11,586 ha), Middle Ghor (7,875 ha) and the Southern Jordan Valley (11,500 ha). The Jordan Valley is about 10 km wide in its northern part, narrowing to 4 km in its middle section, and widening again to about 20 km in its southern part. The elevation of the Jordan River drops from 212m below sea level at Lake Tiberias, to more than 400 m below sea level at the Dead Sea.

South of the Dead Sea, the Jordan Rift Valley is drained by the Wadi Araba (or Arava), which flows in a northerly direction when in spate. This southern section is about 160 km long, and up to 25 km wide (it is at its widest between Jabal Fidan and Umm Muthla). The valley bottom is bordered by highland (or jebel) ranges, in fact escarpment zones, that run parallel to the Jordan valley. In local geomorphologic terms, these are known as the Mountain Ridges and Northern Highlands East of the Rift. These highlands are more than 50 km wide in the north, but narrow to about 10 km near Aqaba. For the purpose of the Project, the Jordan Rift Valley will be considered in its broadest sense, and includes both the valley floor (i.e. the Jordan River Valley, Wadi Araba, and its extension up to Aqaba) and the adjacent escarpment zones parallel to the valley bottom.

The Great Rift Valley is a globally important ecological corridor and the Jordanian section represents a strategically crucial component, since it is a major fly-way between Africa and northern Europe used by millions of migrating birds each year. The sharp physical boundaries of the Jordan Rift Valley, clearly visible from the air, provide a navigational guiding system for these birds and the habitats it contains provide vital resting and refueling stations, without which they are unable to complete their long journeys. Not surprisingly, Birdlife International's document on Important Bird Areas in the Hashemite Kingdom of Jordan (2000), suggests 27 sites for Jordan of which 17 are located in the Jordan Rift Valley.

Apart from its significance for birds, the Jordan Rift Valley also holds many large and internationally important ecosystems, including desert, mountains, wetlands, sea and forest; e.g. the Dead Sea, the Gulf of Aqaba and the Jordan and Yarmouk river systems, as well as numerous specialized or unique habitats of regional importance such as the *Quercus aegilops* oak forests of Yarmouk. To date only one wetland of international importance has been designated, in Jordan, namely the Azraq marshes in the central eastern part of the country, well outside the Rift Valley. The Directory of Wetlands of the Middle East (Budieri, 2005) however, recognizes at least six notable wetland sites in the Jordan Rift Valley. Furthermore, the Dead Sea itself is the lowest and most saline water body on Earth and is noted as one of the World's "biodiversity hot spots" because its extremely harsh environment has engendered a high level of endemism.

Sector issues affecting biodiversity of the Jordan Rift Valley

Previous GEF activities in the country have revealed the presence of many globally threatened species, including several endemics. The persistent causes of habitat degradation and loss are deforestation, overgrazing, inappropriate agriculture, urbanization and population growth. The growth in mass tourism has also been cited as a 'new' threat to environmental quality in the JRV (NEAP Working Paper 1995).

Habitat degradation and species loss in the JRV is serious and accelerating, largely as a result of increasing development pressure, inappropriate agricultural practices and population growth.

a) Fragile ecosystem and loss of biodiversity

The Jordan Country Study on Biological Diversity was carried out in 1998 by the General Corporation for Environment Protection (since 2003 incorporated into the Ministry and Environment) with the technical support from the United Nations Environmental Program (UNEP) and funding from the Global Environment Facility (GEF). One of the objectives of the study was to ensure the protection and conservation of the broadest possible range of biodiversity, while allowing its sustainable use. The study recommended carrying out extensive work to protect Jordan's rich biodiversity. In relation to the Jordan Rift Valley, which was highlighted as an area of exceptional ecological value, the study made several key recommendations, including the establishment of a network of protected areas, strengthening the land use and enforcement systems, monitoring agricultural practices and developing socio-economic projects.

The recommendation of a network of Protected Areas (PAs) was not new. It was first suggested as early as in 1963 by a British expedition (Mountford, 1963; quoted in Clarke, 1979). The establishment of protected areas was hampered though, by the fact that legislation was not in place – a national parks law had been drafted in 1970, but this was not incorporated into national legislation. Consequently, by 1975, only two small PAs had been established in the Rift Valley by the Ministry of Tourism and Antiquities, namely Dibbeen and Zarqa Ma'in. The IUCN/WWF report on "Development of Wildlife Conservation in Jordan II: A Proposal for Wildlife Reserves in Jordan" (Clarke, 1979) also recommended the establishment of a network of protected areas, based on an evaluation of ecosystems and land types. The Jordan Government endorsed this recommendation, declared it a priority both in the National Environment Strategy (1992) and the National Environment Action Plan (1995), and listed it as one of the priority projects in the National Biodiversity Strategy and Action Plan - NBSAP (2003).

Concurrently, six of the twelve sites proposed in all by Clarke (1979) have been formally Registered. However, the total area Registered in the Rift Valley proper is still relatively small. Also, as indicated in an evaluation on *Protected Areas Network Review* by RSCN (undated; around 2000), many habitats are not adequately protected. In this Review, RSCN evaluated major vegetation types not represented or only poorly represented within existing PAs and produced a list of potential areas that contain significant examples of 'missing' habitat types. In addition to the areas originally proposed by Clarke (1979), six additional sites were proposed, all of which are located in the Jordan Rift Valley or immediately adjacent. These newly proposed sites were Dibbeen (Dibbin) Protected Area, Jordan River PA (called Baptism Site or Maghtus), Qatar PA, Aqaba PA, Fifa PA and Yarmouk PA. In the meantime, Dibbeen has also been Registered[7] (2005), leaving five potential sites proposed by RSCN.

At present, there are many threats to the ecological integrity of the Rift Valley in general and the habitat extent of endangered species in particular, that need to be addressed as part of one unified approach. Main threats are: agricultural expansion, unsustainable water extraction, pollution, inappropriate agricultural practices, excessive hunting, poorly planned and incremental tourism development, uncontrolled urban expansion, and overgrazing. Many of the environmental problems of the Rift Valley result from over consumption (e.g. water) or degradation of natural resources.

[7] This area is the focus of a separate GEF-funded project, *Conservation and sustainable use of biodiversity in Dibbeen Nature Reserve* – a medium-sized project being implemented by UNDP.

b) Need for a coherent conservation-oriented integrated ecosystem management and land use strategies

The Jordan Rift Valley is a strategically important corridor for Jordan's economic development (transport, minerals, tourism, water supply and agriculture) as well as for biodiversity conservation. With such a key economic role and many development pressures, there is a need to have clear land use and development strategies that acknowledge both the development potential and its ecological importance. Although there have been some land use planning initiatives in recent years, these have hardly looked at the Jordan Rift valley as one linear ecological system.

The need for Land Use Planning (LUP) capacity and for a national land use plan in Jordan has already been stressed in the National Environment Strategy (1991) - NES and the National Environment Action Plan – NEAP (1996). The Jordan Country Study on Biodiversity - JCSB (GCEP/UNDP/UNEP, 1998) states in this regard: "A comprehensive land use scheme is lacking on the national, regional and local levels. Being a prerequisite for nearly all decisions, in the water sector for the location and design for waste water treatment facilities, in the transportation sector for the design and construction of roads, for agriculture, industrial facilities, mining, and the protection of nature reserves, lack of land use planning creates serious threats for the environment as well as for public health."

More recently, MOA has expressed the need for LUP expertise and related capacity building at all levels in its Strategy for Agricultural Development for 2002-2010. The National Biodiversity Strategy and Action Plan - NBSAP (2003) strongly promoted integrated land use planning and related capacity building towards a "biodiversity-oriented" society.

There have been regional initiatives by JVA and ASEZA in recent years but there has been little coordination between them.

A review of documentation on previous planning activities and discussions with RSCN and various other institutions with a planning mandate, has led to the conclusion that the concept of LUP with proper attention to biodiversity conservation has not established to its full extent in Jordan. Experience in comprehensive land use planning is still limited. There is no institution with an explicit mandate and ability for overall LUP.

In 1994, the Jordan Valley Authority carried out a study on Integrated Development of the Jordan Rift Valley (World Bank supported). This was the first planning exercise at the regional level that recognized the value of the Rift Valley as a single ecological feature. This plan acknowledged the environmental significance of the Valley and proposed a number of projects. However, its recommendations were largely site specific and it did not detail ways of integrating nature conservation into broader land use strategies throughout the length of the Rift corridor.

In 1996, the Jordan Valley Authority carried out a study on Tourism Development at the East Coast of the Dead Sea (referred to as the Sigma Study) including a zoning of tourism areas. More recently (2004), the Jordan Valley Authority identified the need for "land zoning" in the Jordan valley and contracted a consultant to prepare a Land Use Master Plan (LUMP) for the JVA mandate area, with support from USAID. The LUMP includes an Atlas and provides the near-future land designation pattern, by land use category, for the Strategic Plan 2003-2008 period. A zoning plan has also been prepared for the Aqaba Special Economic Zone by ASEZA. Both these exercises qualify as a land designation plan with limited participation of stakeholders in the planning process.

LUP at the local level is virtually nonexistent. MOA is currently involved in a government funded program of on-farm agricultural development through preparation and implementation of conservation

plans, farm plans, water harvesting measures, and agricultural roads. RSCN has taken some land management or land use management measures, notably in relation to the Protected Areas. This implied designation of the Protected Area and land use arrangements such as agreements on grazing control. Both measures were based on (mostly ecological) resource surveys but only the latter have been the result of consensus-building with local stakeholders. The process leading to these arrangements is in compliance with standards of local land use planning but in a simplified way.

c) Lack of participatory integrated resource management approaches and activities that provide for economic development and sustainable resource use to local communities

Many of the environmental problems of the Rift Valley result from over consumption (e.g. water) or degradation of natural resources. Introduction of intensive irrigated agriculture in the Jordan Valley – which is mainly based on the construction of the 110 km long King Abdullah Canal all along the valley - has contributed greatly to economic development, but has aggravated environmental problems such as chemical pollution, uncontrolled waste disposal, water shortages in other sectors and soil salinization.
The northern part of the Jordan Rift Valley has become a major producer of fruit and vegetables such as bananas, melons and tomatoes. Widespread irrigation for these crops and preference for water demanding crops are among the main reasons for Jordan's acute water deficit. In addition, increased water extraction from deep wells is threatening the sustainability of ground water resources. Apart from the risks to human health, the over consumption of water and use of chemicals is a threat to ecological systems and needs to be addressed.

There are increasing problems from the growing population within the subsistence and nomadic tribal communities, who are finding it more difficult to subsist on arid, marginal land. Historic land use restrictions and inhibitions on nomadic lifestyles have led in part to overgrazing of rangelands and illegal woodcutting. Although local communities are contributing to the degradation of the resource base, they have in most instances been left out of the land use planning processes implemented so far. The most recent planning process for the LUMP involved a degree of stakeholder participation, although this was not very intensive. The planning exercise was a single event instead of an iterative planning process. Representatives of different types of stakeholders were consulted in focus group consultation meetings, but stakeholders have not been involved in a full iterative planning and decision making process.

There involvement is of utmost importance since there is a need to develop alternative livelihoods for many communities in the Rift Valley that are more sustainable and focused on and compatible with the protection of biodiversity. Positive experiences with the development and introduction of alternative livelihood activities can be drawn from the Dana Reserve Project, which was funded by GEF and implemented from 1994-1997. Valuable lessons are available with regard to the creation of products and services target at tourists. Furthermore positive examples exist in relation to the introduction of Integrated Pest Management, organic farming and the introduction of crops requiring less water. The project will strive towards expansion of these experiences in the project area.

d) Weak institutional and legal framework for integrated ecosystem management with limited capacity and knowledge

There is no real lead agency which means that there is some confusion over agencies' roles and authorities and in other instances there is duplication of effort. At the same time the legal framework is not clearly spelled out and more important there are serious problems in enforcing environmental law. Financial constraints and a lack of equipment, trained personnel and general awareness are inhibiting the consistent application and enforcement of environmental laws within the Rift Valley. There are currently several agencies with some degree of responsibility or influence with regard to integrated ecosystem management and Land Use Planning related issues; among them: Ministry of Environment, Ministry of

Planning, Ministry of Tourism and Antiquities, Ministry of Agriculture, Ministry of Water and Irrigation, Jordan Valley Authority (JVA), Natural Resources Authority, Aqaba Special Economic Zone Authority (ASEZA), Higher Council for Science and Technology (Badia Project), Department of Land and Surveys, Ministry of Municipal and Rural Affairs, and Royal Society for the Conservation of Nature (RSCN). As often, with so many players there is some confusion over their roles and authorities and in other instances duplication of effort.

JVA is the most influential organization in most of the Rift Valley Project area, and is presently the most advanced with regard to regional LUP initiatives and other development activities in the Jordan Valley. The strong position of JVA can, to a great extent, be attributed to the fact that all technical ministries are represented in its management board. Currently, JVA seems to act rather as a regulatory organization than a planning organization. Its actual capacity/capability for comprehensive land use planning and integrated ecosystem management requires strengthening.

The Aqaba Special Economic Zone Authority (ASEZA), formerly the Aqaba Regional Authority (ARA) was created in 2000 to accelerate economic development in the free zone around Aqaba town. The free zone covers part of the former Aqaba Governorate. In the free zone, ASEZA has full ownership and development responsibility.

The Royal Society for the Conservation of Nature (RSCN), as the implementing agency, is obviously the prime institution for the project. RSCN is one of the institutions most strongly involved in biodiversity conservation. It has a mandate to manage and control protected areas and is exerting this already in the escarpment zones of the Rift Valley in Mujib and Dana Nature Reserves. It has enforcement power with regard to violations of the law. Before, this applied only for illegal hunting but, since recently, this has been expanded to all aspects of the Agricultural law. RSCN's own enforcement capacity on the ground is very limited and it leaves enforcement up to the Jordanian Police Force, with whom it has developed a good working relationship and partnership over the years.

As a consequence of undefined roles and responsibilities, there are still some land use decisions which appear to be forthcoming with relatively little attention and concern to their impact on biodiversity conservation, despite official policy pronouncements and the adoption of the National Biodiversity Strategy and Action Plan (NBSAP, 2003).

The long-standing issue concerning land use policy coordination and enforcement has recently shown improvements. Various documents in the past (e.g. the Jordan Agenda 21, the Jordan Country Study on Biological Diversity and the national Biodiversity Strategy and Action Plan) mentioned the lack of harmonization between government institutions with regard to legislation and regulatory issues relating to ecosystem management and LUP. Aspects of LUP and nature conservation have now been incorporated in various laws, although these laws are not fully designed in a coordinated way yet and are not necessarily supportive one to another. Some of the relevant laws in this respect are:

- Environment Protection Law (2004),
- Environmental impact assessment By-law (2004),
- Soil Protection By-law (2004),
- Natural reserves and national parks By-law (2004),
- Environmental by-law for nature protection (2004?)
- Law on urban and architectural heritage protection (2004?)

The principal issue today is not the adequacy of laws and regulations but their enforcement. Financial constraints and a lack of equipment, trained personnel and general awareness are inhibiting the consistent application and enforcement of environmental laws within the Rift Valley and throughout Jordan.

Annex 2: Major Related Projects Financed by the Bank and/or other Agencies

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

The project strongly complements several ongoing and planned World Bank projects, and other donor interventions. Relevant in this respect are:

a) the ongoing Jordan-Gulf of Aqaba program (1996 – 2005), which is part of the Coral Reef Program and has a GEF component,

b) the Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aqaba (PERSGA) is since 1997 receiving financial support from the GEF program for the conservation efforts,

c) the GEF project "Conservation of Medicinal and Herbal Plants" (May 2003- December 2008),

d) the GEF/UNDP funded project Conservation and Sustainable Use of Biodiversity in Dibbeen Nature Reserve (January 2004 – January 2008) and

e) the GEF financed PDF for the Project Conservation of soaring migratory birds in the eastern sector of the Africa-Eurasia flyway system (Rift Valley and Red Sea flyways), implemented by Birdlife International and its partner institutions(August 2004 – November 2005).

The Gulf of Aqaba and Red Sea initiatives are of relevance, since both of these marine areas occupy part of the Rift Valley.

The proposed project will build on the experiences obtained in recently completed projects. The most important experience is that of the GEF Dana Nature Reserve Project (October 1996 – July 1998), which integrated biodiversity conservation activities with community development, especially income-generating activities implemented by local communities. The project could further benefit from the outcome of the UNDP/GEF funded "Self Assessment of National Capacity in Jordan for Global Environmental Management" (January 2004 – June 2005) and the UNDP/UNSO financed "Establishment of a National Strategy and Action Plan to Combat Desertification in Jordan" (February 2002 – October 2004); both executed by the Ministry of Environment.

Sector Issue	**Project**	**Latest Supervision (PSR) Ratings (Bank financed projects only)**	
		Implementation Progress (IP)	Development Objective (DO)
Bank-financed			
Biodiversity Conservation	Second Tourism Development Project (JO-PA 35997, US$ 44 million, completed in June 2005)	To be identified	To be identified
	Conservation of the Dana and Azraq Protected Areas (Jor/92/G31/A/1G/99; GEF UNDP US$ 6.3, completed)	To be identified	To be identified
	Conservation of Medicinal and Herbal Plants Project (P069847 GEF US$ 5 million, ongoing)	To be identified	To be identified

Other Development Agencies	Establishment of a National Strategy and Action Plan to Combat	N/A	N/A
UNDP/UNSO	Desertification in Jordan (JOR/0/006, completed)		
	Self Assessment of National Capacity	N/A	N/A
UNDP/GEF	in Jordan for Global Environmental Management (UNDP/GEF US$0.2 million)		
UNDP/GEF/Government of France	Conservation and Sustainable Use of Biodiversity in Dibbeen Nature Reserve (GEF US$ 1 million, French Government US$ 2.2 million, ongoing)	N/A	N/A
GEF/BirdLife International	Conservation of soaring migratory birds in the eastern sector of the Africa-Eurasia flyway system (Rift Valley and Red Sea flyways) (GEF PDF-B 0.475 million, ongoing; 3.2 million co-financing, GEF 5.7 million, pipeline)	N/A	N/A
GTZ	Use reclaimed Water in the Jordan Rift Valley (2003-2006; ongoing € 3 million)	N/A	N/A
GTZ	Management of water Resources in irrigated Agriculture (2001-20006, ongoing, € 3.02 million)	N/A	N/A
GTZ	Using GIS for Water Resources Management (2004-2006)	N/A	N/A
MREA/France	Irrigation Optimization in the Jordan Rift Valley	N/A	N/A
MREA/France	Comprehensive assessment of water management in Agriculture	N/A	N/A
MREA/France	The Development of the Jordan River basin; the Main Historical Steps Study	N/A	N/A
USAID	Kafa'a Project (2003-2008, US$ 10 million)	N/A	N/A
EU/CARE International	Participatory Water Resources Management Project (2003-2007)	N/A	N/A

Annex 3: Results Framework and Monitoring

Jordan: Integrated Ecosystem Management in the Jordan Rift Valley

1. Results Framework

Project Development Objective Global Environmental Objective	Outcome Indicators	Use of Outcome Information
PDO Mainstream integrated ecosystem management (IEM) practices in the Jordan Rift Valley pilot areas **GEO** Secure the ecological integrity of the Jordan Rift Valley as a globally important corridor	- Seven integrated land use management plans with bio-diversity conservation measures in place with participation of all stakeholders and agencies - Total number of hectares under sustainable management in all four PAs (59,650ha)	Outcome information will be utilized for the design and development of similar national and regional projects (in Middle East)
Intermediate Results **One per Component**	**Results Indicators** **for Each Component**	**Use of Results Monitoring**
Component One: Biodiversity conservation measures introduced into land use planning in the JRV	**Component One:** - SEA findings for biodiversity conservation considered in updating and preparing seven land use management plans. - Recommendations from a comprehensive legislative and policy review for land use planning developed	**Component One:** Results will refine and be adapted to integrated ecosystem management practices.
Component Two: Standard of living of local communities in the vicinity of the protected areas improved through biodiversity friendly alternative livelihoods	**Component Two :** - Community Livelihood Action Plans developed and implemented for the Yarmouk, Fifa, Mas'uda, and Qatar communities - Average income of those participating in alternative livelihood increase 10 percent in the four communities as a direct consequence of the project intervention	**Component Two:** Adoption rate of alternative livelihood activities will be used to revise interventions Positive results will be used for replication in other areas

Intermediate Results One per Component	Results Indicators for Each Component	Use of Results Monitoring
Component Three: Biodiversity management capacity enhanced in the four (Yarmouk, Fifa, Mas'uda, Qatar) protected areas (PA)	**Component Three:** - Four new PAs (Yarmouk, Fifa, Mas'uda, Qatar) officially registered with the GOJ -Rate of generation or regeneration of vegetative cover/biomass in all four PAs (see note below) -Reestablishment of the threatened animal populations -Increase in the number of bird passing along the JRV - Number of Community Development Plans prepared and implemented in consultation with local communities - Number of trained staff in PA facilities	**Component Three:** Lessons learned to replicate PAs establishment and management in other areas.
Component Four: Mechanisms for sustainable financing of biodiversity conservation in place for the four PA	**Component Four:** - Sustainable financing programs established for the four PAs (20 socio-economic projects around PAs in place at end of project) - 10% increase private sector financing of biodiversity friendly development activities - The "Jordan Fund for Nature" endowment is capitalized according to proposed targets	**Component Four:** Replication of sustainable for biodiversity conservation in other protected areas
Component Five: Institutional strengthening and enhanced stakeholder capacity for integrated ecosystem management practices	**Component Five:** - Needs assessment actions plan for capacity building in place and implemented - Participatory Monitoring & Evaluation (M&E) system in place in year two -Implementation of a program for increased public awareness of the importance of biodiversity conservation - M&E targets met annually - RSCN manages Dead Sea	**Component Five:** Results will be used to review effectiveness of the training and capacity building program

	Panorama Center according to MOU - The databank (DB) on biodiversity of each PA is updated - The GIS is widely used	

Note: Below are the targets established by RSCN in terms of vegetation cover to achieve by the end of the project period:

Proposed PA	Vegetation Type	Target Cover (%)
Yarmouk	Deciduos Oak	5.81%
Fifa	Saline Tropical	0.57% 5.51%
Qatar	Acacia Mudflat Saline	0.34% 3.05 1.59%
Jabal Mas'ada	Mediterranean Non-Forest Steppe Acacia Juniperus Forest	0.78% 1.56% 1.09% 17.60%

Source: BSAP & RSCN, 2000

2: Arrangements for Results Monitoring

Outcome Indicators	Base Line	Target Values						Data Collection and Reporting		
	Values	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Frequency of Reports	Data Collection Instruments	Data Collection Responsibility
IEM practices are integrated into planning and development activities at all levels in JRV	None	0	0	10%	20%	30%	40%	Annually	Planning outcomes of different agencies	PMU
Total number of hectares under sustainable management in 4 PAs (56,950ha)	Baseline indices	0	0	20%	40%	70%	100%	Annually	Reports of different agencies	PMU
Results Indicators for Each Component										
Component 1: SEA findings for biodiversity conservation considered in updating and preparing land use management plans (LUMPS)	0 SEA	0	0	0	50 % completed	75% completed	100 % completed	Annually	Preparatory field survey for SEA Existing environmental and biodiversity information on JRV	PMU
Recommendations from a Comprehensive Legislative and Policy Review for land use planning developed	0 Comp. Legislative and Policy Review	0	50% completed	100% completed	0	0	0	Annually	Legal documents Policy documents LUMP Legislative Policy Review	PMU
Seven land use management plans in place (LUMPS) with participation of all stakeholders and agencies	0 LUMPS	0	0	7 LUMPS	0	0	0	Annually	SEA Legislative Policy Review Community Participation Program	PMU +IEM field teams
Component Two: Community Livelihood Action Plans developed and implemented for the Yarmouk, Fifa, Mas'uda, and Qatar communities	0 Action Plans	0	4 Action Plans	0	0	0	0	Annually	Baseline Economic Survey Work plans Alternative Business models progress reports	PMU + IEM Field teams
Average income, of those participating in alternative livelihood, increases 10 percent in the four communities (above increase in non-participating communities)	US$ 900 av. personal income (2004), 10 % increase	0	0	5%	6%	8%	10%	Annually	Baseline Economic survey Personal Income Survey Progress Reports	PMU + IEM field teams

Outcome Indicators	Base Line	Target Values						Data Collection and Reporting		
	Values	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Frequency of Reports	Data Collection Instruments	Data Collection Responsibility
Component Three: Four new PAs (Yarmouk, Fifa, Mas'uda, Qatar) officially registered with the government of Jordan	0	0	3 PAs (Yarmouk, Fifa,, Qatar	1 PA Mas'uda	4 PAs registered	4 PAs registered	4 PAs registered	Annually	Official documents	PMU
Rate of generation or regeneration of vegetative cover/biomass in all four PAs	% of vegetation cover in all four PAs	% increase in vegetation cover in all four PAs	% increase in vegetation cover in all four PAs	% increase in vegetation cover in all four PAs	% increase in vegetation cover in all four PAs	% increase in vegetation cover in all four PAs	% increase in vegetation cover in all four PAs	Annually	Survey Progress Reports	PMU
Reestablishment of the threatened animal populations	X number of threatened animal species	% decrease in number of threatened animal species	% decrease in number of threatened animal species	% decrease in number of threatened animal species	% decrease in number of threatened animal species	% decrease in number of threatened animal species	% decrease in number of threatened animal species	Annually	Survey Progress Reports	PMU
Increase in the number of bird passing along the JRV corridor	X number of bird	% increase in number of bird	% increase in number of bird	% increase in number of bird	% increase in number of bird	% increase in number of bird	% increase in number of bird	Annually	Survey Progress Reports	PMU
Management plans prepared and implemented in consultation with local communities	0 plans 0% implemented	50% prepared 0% implemented	100 % prepared 0% implemented	25% implemented	50% implemented	75% implemented	100% implemented	Bi-annually	Community Outreach Program Public Hearings Management Plans	PMU
Number of trained staff in PA facilities	0 facilities/ 0 staff	0	0	3 facilities/ 22 staff trained	1 facility/ 14 staff trained	4 facilities 36 staff trained	4 facilities/ 36 staff trained	Annually	Facilities Plans Training Program	PMU
Component Four: Sustainable financing program established for the four PAs (20 socio-economic projects around PAs in place at end of project)	0 socio-economic projects	0	4 socio-economic projects	8 socio-economic projects	12 socio-economic projects	16 socio-economic projects	20 socio-economic projects	Annually	Financial reports	PMU
10% increase private sector financing of biodiversity friendly development activities	Limited private financing (Wild Jordan, Jordan River Foundation)	0	0	0	5%	7%	10%	Annually	Audit reports	PMU

Outcome Indicators	Base Line	Target Values						Data Collection and Reporting		
	Values	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Frequency of Reports	Data Collection Instruments	Data Collection Responsibility
The "Jordan Fund for Nature" endowment is capitalized according to proposed targets	US$11 million by end of 2005	100%	100%	100%	100%	100%	100%	Annually	Audit reports	PMU
Component Five: Needs assessment actions plan for capacity building in place and implemented	0 Needs Assessment Action Plans	TNA 100%	25% implementation of AP	50% implementation of AP	75% implementation of AP	100% implementation of AP	N/A	Annually	Training reports	PMU
Participatory Monitoring & Evaluation (M&E) Plan in place in year two and targets met	0 M&E Plan	50 % M&E Plan in place	100 % M&E Plan in place	100% First Year targets achieved	100% Second Year targets achieved	100% Third Year targets achieved	100% Fourth Year targets achieved	Annually	Survey Monitoring and Evaluation Compliance Reports	PMU
RSCN manages Dead Sea Panorama Center (Ministry of Tourism) according to MOU	MOU signed	100% conditions maintained	100% conditions maintained	100% conditions maintained	100% conditions maintained	100% conditions maintained	100% conditions maintained	Annually	Minutes of RSCN Board meeting; Amendment to MOU	PMU
Implementation of a program for increased public awareness of the importance of biodiversity conservation	No program	50% of program prepared	100% of program prepared	Program implemented in one PA	Program implemented in one PA	Program implemented in one PA	Program implemented in one PA	Annually	Survey Monitoring and Evaluation Compliance Reports	PMU
The databank (DB) on biodiversity of each PAs is updated		DB updated	DB updated	DB updated	DB updated	DB updated	DB updated	Annually	Surveys Progress Reports	PMU
The GIS is widely used	0	All data on bio-diversity are properly mapped	All data on bio-diversity are properly mapped	All data on bio-diversity are properly mapped	All data on bio-diversity are properly mapped	All data on bio-diversity are properly mapped	All data on bio-diversity are properly mapped	Annually	GIS techniques	PMU

Annex 4: Detailed Project Description

Jordan:Integrated Ecosystem Management in the Jordan Rift Valley

Component 1: Assessment and Planning for Integrated Ecosystem Management
(Total USM $ 2.01: GEF USM $ 0.97 and Co-financing USM 1.04)

Output 1.1 Strategic Environmental Assessment (SEA) for the Jordan Rift Valley completed.
Output 1.2 Recommended policy and institutional reforms to implement SEA
Output 1.3 Legislative and policy review to empower local communities to participate in land use planning.
Output 1.4 Recommendations identified in SEA piloted

GEF incremental activities will complement this effort by creating a better enabling environment and strengthen national capacity for IEM and LUP planning process. These will first be targeted at pilot areas and the vision is that ultimately IEM will result in the development of a LUMP covering the entire JRV. In order to achieve this, the role and responsibilities of the various institutions and agencies that are currently involved in the planning will be streamlined and capacity will be built in these institutions with regard to the principles and processes of the IEM and its implications for LUP. The Strategic Environmental Assessment (SEA)[8] for the Jordan Rift Valley will provide a comprehensive review of the socio-economic and environmental conditions of the JRV further providing the baseline information needed for the planning purposes and further developing the Protected Area networks, as part of Compmonent 3 activities and further for potential future PAs. In addition to the standard requiremets of an SEA, this will involve carrying out of ecological and natural resource surveys, and conducting PRAs in villages around the PAs. It will also include surveying cultural and archeological remains, which are known to occur in at least several of the proposed PAs and have special management requirements. This will ultimately lead to the development of SEA capabilities in the various departments. Furthermore, the legal framework will be revised if necessary to create a mechanism by which decision making power in the planning and management of natural resources and the related competences to do so are transferred to communities. The latter is based on an analysis of the institutional and legal framework, which identified several gaps which limit the full participation of the communities in the management of their environment

The project will focus on seven IEM demonstration sites namely: Yarmouk River Area, Jordan River Area, Mujib North Area, Mujib South Area, Fifa Area, Qatar Area and Ma'suda IEM Area. These seven areas were priority areas selected in partnership with counterpart organizations (ministries, agencies as well as the Steering Committee), while giving consideration to the following points:

- Coverage and diversification of the major ecological zones in the JRV,
- Coverage of the four selected Protected Areas and Important Bird Areas and their adjacent land areas,
- Ecosystem connectivity (i.e. ensuring that a conservation corridor is ensured along the JRV),
- Presence of globally significant biodiversity assets and vulnerability of local ecosystems, and
- Coverage of areas with observed unsustainable development (specifically in the area of agriculture or tourism) putting the biodiversity conservation in the adjacent proposed protected areas at stake.

Three IEM Field Teams will be established to cover all the seven IEM working areas. These Field Teams will be supported by the Technical Core Team which is centrally based so that they can provide assistance to the different regions. The distribution of the teams will be as follows:

[8] Inclusive of language from Output 3.1: Ecological, natural resource and socio-economic baseline surveys completed for the proposed PAs

- IEM Team 1 – to undertake project activities in Yarmouk (covering the Yarmouk River and the Jordan River Valley IEM areas)
- IEM Team 2 – to undertake projects in Mujib and Fifa (including the Mujib North, Mujib South and Fifa IEM areas)
- IEM Team 3 – to undertake projects in Qatar and Masuda (thus covering Qatar and Masuda IEM areas)

The three teams will cooperate with the local organizations and agencies and will target local communities. Improved or alternative agricultural practices such as integrated pest management, the introduction of organic farming and the use of crops that have lower water requirements are important aspects of IEM as they contribute to sustainability and biodiversity conservation. The project will contribute to the adoption of these practices by the local farmers in the pilot project areas through strengthening of the extension agencies and imparting training and capacity building activities. The latter includes drafting of a participatory extension program, training extension staff in participatory extension methods and guiding the implementation of the program in pilot areas.

However, before these new practices can be introduced and the local community members are in a position to participate an atmosphere of confidence and trust needs to be created between the different project partners and the community members. The introduction and successful application of IEM/LUP in the seven pilot areas therefore involves several steps and different activities. Some of these are: awareness raising at community level, community organization for IEM activities, problem and needs assessment through PRA, identification of constraints in the sustainable resource use, develop alternatives or mediating measures in cooperation with community members, develop and implement an agreed LUP, monitor results involving stakeholders and discuss options for change or amendments in the LUP if required. Once these steps have been taken alternative practices could be adopted by the local communities.

Once IEM has been introduced in the different pilot areas it is also important to review its impact.
Special attention will therefore be paid to the development and introduction of a M&E system for IEM, being a new activity in Jordan. This system will become part and parcel of the overall project M&E system but will be designed as to be used also by other parties after project completion. Baseline surveys will be carried out so that a reference point is created at the beginning of the project implementation.

Component 2: Socio-economic Mitigation Measures for Alternative Livelihoods
(Total USM $ 1.96: GEF USM $ 0.06 and Co-financing USM 1.9)

Output 2.1 Community action plan for alternative livelihoods adopted
Output 2.2 Alternative livelihood activities are operational and viable in piloted areas
Output 2.3 Lessons learned from alternative livelihood demonstration projects documented and promoted

The primary objective of this component is to improve community economic development through alternative livelihoods and poverty alleviation projects in a biodiversity-friendly manner. Based on the Dana NR model and experience obtained and lessons learned from this model need to be studied and integrated in the development of interventions for the new pilot areas. It is of utmost importance that this livelihood programme should be sustainable, and does not impinge upon the conservation value of the reserve, nor has other environmental impacts.

In order to ensure community participation, social organization and mobilization activities will be carried out to form interest groups or village development organizations. As an integral part of the social organization process, baseline surveys will be carried out through PRA and RRA methods in which data on the socio-economic status of the community members and the social relationships will be collected.

With the use of these participatory diagnostic tools opportunities and constraints with regard to the introduction of alternative livelihoods will be identified. The phased introduction of alternative livelihoods will be included in an action plan that is prepared in consultation with the community groups established. They will also be the main actors in the implementation of the plan.

The main target group of the community development and alternative livelihoods component would be the communities living in and around the seven IEM pilot areas. Marginalized groups, including women, herders and other underprivileged groups will be actively targeted to ensure that they receive their share of benefits from project activities and are able to effectively participate in decisions regarding LUP in general and the development of their community in particular.

As the success and impact of some of the interventions is not known beforehand, pilot and demonstration projects will be establishes and the results of these alternative livelihoods programme will to be closely monitored. The monitoring system will therefore include indicators and indices that are linked to and provide insight in poverty reduction and livelihood improvement. Possible indicators that could be considered in this regard are: the number of men and women employed; the increase in income at village level, the degree of diversification in employment. The PMU will be responsible for the M&E system and will ensure that regular monitoring takes place. Positive examples of interventions and alternative livelihood alternatives will be duplicated through an extension and awareness raising programme.

Component 3: Capacity Building for Expanded Protected Area Network
(Total USM $ 6.04: GEF USM $ 4.35 and Co-financing USM 1.69)

Output 3.1: Four new protected areas officially designated.
Output 3.2: Protected Area (PA) management plans are in place and operational.
Output 3.3: PA staff teams recruited, trained and in place.
Output 3.4: Facilities developed at four new PAs and at Mujib NR.

The objective of this component is to expand and improve the existing Protected Area system in the Jordan Rift Valley. This will be achieved by providing RSCN with information, infrastructure and capacity building support so that this organization is equipped to implement effective PA management in new and/or expanded Protected Areas. Four new Protected Areas have been identified namely: Yarmouk, Fifa, Mas'uda and Qatar. Each of these four sites harbor more than 20 globally significant species, including threatened migratory birds, rare plants and fish, and threatened mammals, and serve to add as yet unprotected habitat types to Jordan's Protected Area network.

In order to be able to optimally target management interventions in the proposed PAs, and to assess if the project is achieving its conservation objectives, a comprehensive baseline of ecological, natural resource and socio-economic status will be defined as part of the SEA completed in Component 1. The boundaries proposed in the past, and the conducted PRAs will serve as a point of departure for discussions with all major stakeholders regarding PA establishment. Once final boundaries are agreed upon, detailed maps are to be produced and used as a basis for official gazettal, to be processed by RSCN and MoEnv. Simultaneously, management plans will be formulated for all four proposed PAs, based on a participatory approach, involving all the stakeholders. The local community members will play an important role in the implementation of the management plan. The management plans should be reviewed and discussed with the stakeholders on a regular basis and adjustments have to be incorporated if needed.

The establishment and management of four new PAs will require a significant expansion of RSCN's field-based staff: these will need to be recruited and trained, as a pool of appropriately trained specialists in the field does not exist in Jordan outside the existing PA network. In addition to that, the four new PAs will require basic facilities such as offices, meeting rooms, visitor centers and staff housing, and be equipped with reliable electricity and water supplies. Furthermore, they will require office

equipcommunication systems and transportation arrangements. Finally, the project is, apart from establishing four new Pas, expected to provide infrastructural support to the already existing Mujib NR, which was established in 1987, but needs urgent upgrading of its facilities.

Component 4: Sustainable Financing Mechanisms
(Total USM $ 1.34: GEF USM $ 0.00 and Co-financing USM 1.34)

Output 4.1 Defining sustainable financing mechanisms
Output 4.2 Sustainable financing mechanisms in place and operational

This component has as its objective to establish a system of sustainable financing for biodiversity conservation in the JRV. It will thrust at activities designed to promote partnership arrangements between communities and external sources of financing outside of the GEF to sustain ecosystem management schemes. Financing mechanisms and sources of financing could include: private sector partnerships for income generation activities (e.g. ecotourism), state budget and those of intra-community organisations, revenues from protected areas and entrance fees, international foundations and NGOs and / or national funds planned for environmental and natural resource management. One pertinent example of these financing mechanisms is the already existing Jordan Fund for Nature and the project will direct activities to increase the capital base of this existing fund.

Another activity under this component will be the establishment of a Community Development Enterprise Program with a related grand scheme. The principal objective of the scheme is to stimulate and support private sector entrepreneurial initiatives that generate profit and contribute to biodiversity conservation. It will mainly relate to demand driven projects that have been proposed by community based organisations; family units, cooperatives and small enterprises. The technical scope of the projects is not restricted in order to encourage creativity on the part of the grant applicants. Possible projects could relate to:

- Modifying tourist enterprises in order to be more biodiversity friendly.
- Investing in tourist infrastructure, in order to attract ecotourism
- Investing in machinery to process biodiversity product so that these are more profitable
- investing in the introduction of livestock activities and technology to decrease the pressure on the biodiversity

Eligible project must have no harmful environmental impact and must include some degree of beneficiary contribution (in cash, labour or materials) and must pass the selection criteria that will be drafted by the Core Technical Team. To avoid the scheme to be control by the elites, the project will ensure that every process (from identification, selection and implementation) is participatory and the management of resources is transparent. The last activity covered under this component is the creation of mechanisms by which revenue that is accrued by the protected areas (e.g. entrance fee, tourism tax) is made available for the maintenance of existing PAs or the establishment of new once.

Component 5: Capacity Development and Monitoring and Evaluation
(Total USM $ 0.90: GEF USM $ 0.77 and Co-financing USM 0.13)

Output 5.1 Institutional and community needs for enhanced biodiversity conservation identified
Output 5.2 Institutional strengthening recommendations implemented for government agencies
Output 5.3 Enhancing capacities of NGO and community organizations
Output 5.4 Monitoring and Evaluation Program effectively implemented
Output 5.5 Dead Sea Panorama Center, for biodiversity conservation and environmental management operational
Output 5.6 Project managed successfully

In order to reach the project's intended goal of economic development and improved biodiversity conservation, capacity development will be needed at all levels. To support the capacity building process in the GEF project, training is needed on several levels and in various topics:

- National level: policy development, enforcement and monitoring, land use planning for government representatives. Institutional reform will focus on bringing in place mechanisms for efficient information sharing and decision-making;
- Local level (PA): training for reserves staff, local (decentralized) government officials in LUP, and support to extension services in the promotion of more sustainable agricultural techniques;
- Community level: community development, institutional strengthening of communities, training to local communities in business development, training in alternative livelihoods.

A staff requirement and training needs assessment will be carried out targeting the government officials at the national and local level, in support of IEM and LUP. Based on the assessment a training and staff development plan will be established and implemented. A similar exercise will take place for NGOs and community organisation.

Ultimately it is the intention of the project to gradually develop the training section of RSCN into a regional center of excellence. In addition to the current activities of RSCN's Outreach Department, which includes an internal and regional training programme and an environmental education and awareness programme for schools, RSCN would also function as a development and learning centre where NGOs, government officials and private sector can receive training as well. Its role will be to link state-of-the-art knowledge that is available (inter)nationally, and to foster collaboration on innovative, multi-disciplinary practices. It should be a flagship for learning and development in the field of nature conservation / biodiversity. The project management responsibilities, the PMU will be integrated as part of the RSCN's guiding them through the good practices of project implementation and hands-on capacity building. Project implementation will not be limited to project supervision, but active engagement in the monitoring and evaluation process, further reinforcing the RSCN's goal to be a center of excellence. The monitoring and evaluation training will be extended beyond the RSCN's staff to the staff of the PA's and other engaged parties.

Besides with the staff of RSCN, much more expertise is available in Jordan and in the region. Most knowledge is nationally available, therefore, a network of trainers within various organisations needs to be established to maximise the potential of sharing. Resource persons in the region should be identified per expertise field and if necessary, their teaching skills enhanced, so they can be called upon demand if training needs exist. A Training of the Trainers (ToT) course should be organised, focussing mostly on teaching skills and the development of training material.

Only in a few subjects it might be needed to source knowledge from outside Jordan, in the field of LUP/IEM for instance. Other providers of training (apart from RSCN) that could become part of the trainers' network could include the following:

- IUCN, which can make global experience on protected area management (and planning, effectiveness and innovative approaches) available to Jordan, providing assistance with translations and specifying it to Middle Eastern needs, together with RSCN;
- Several organisations have experience with community-based development: Jordan River Foundation, Department of Forestry (through the GTZ community development programme), RSCN (Wild Jordan) and IRADA. These organisation should be brought together to develop best practices material, with the facilitation of the Community Development Specialist, to be hired by the GEF project;

- Specific knowledge of species identification is available through organisations like Birdlife International, Universities etc
- A pilot on creating biodiversity sensitivity maps is currently being undertaken by Jordan Society for Sustainable Development (JSSD);
- An institutional strengthening programme funded by EuropeAid will start for the Ministry of Environment in September 2005, and will last for 18 months. Training needs for the ministry have been identified under several donor funded initiatives. Within the training modules that are proposed, trainees outside the MoE have been identified as well. Cooperation with (or if the GEF project does not start before the EU-funded project has ended), building upon the experiences of this project is essential.
- A request for a training programme for JVA has been submitted to GTZ /USAID and is currently awaiting approval. The training programme will focus among others on water resources management, which could also benefit other parties.

Annex 5: Estimated Project Costs

Jordan: Integrated Ecosystem Management in the Jordan Rift Valley

Project Costs by Component	Local US$ million	Foreign[9] US$ million	Total US$ million	% of Total
1.Assessment and Planning for IEM	1.71	0.30	2.01	16.4
2. Socio-economic Mitigation Measures for Alternative Livelihoods	1.71	0.25	1.96	16.0
3. Capacity Building for an Expanded Protected Area System	4.77	1.27	6.04	49.3
4. Sustainable Financing Mechanisms	1.34		1.34	10.9
5. Capacity Development and M&E	0.90		0.90	7.3
Total Project Costs	**10.43**	**1.82**	**12.25**	**100**
Physical and price contingencies[10]				
Total Financing Required	**10.43**	**1.82**	**12.25**	

[9] Foreign amounts relate to the involvement of international consultants
[10] All component costs include 5% contingency

Annex 6: Implementation Arrangements

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

The Royal Society for the Conservation of Nature (RSCN), as the implementing agency, is obviously the key agency involved. Project implementation will be primarily managed and coordinated from RSCN's Headquarters in Amman, where a Project Management Unit (PMU) will be established within the RSCN. Within the context of the OPCS guidelines the Project Management Unit (PMU) will be "semi-integrated" within the existing structure of the RSCN augmenting them with some capacity. RSCN meets the criteria for optimal project implementation as it is well positioned to lobby for GOJ counterpart funding and co-financing, can attract external funding, has the means to attract high quality staff and is experienced in implementing GEF co-financed projects. An organizational at the end of this chapter illustrates the organizational arrangements but does not detail the reporting process.

The PMU will be guided by a Steering Committee, to be chaired by the Director of RSCN. The Ministry of Planning and International Cooperation (MOP) has an indispensable role, as it is responsible for channeling funds from international donors, including GEF, to line ministries and other implementing agencies. MOP also manages the budget line for the GEF-funded Conservation of Medicinal and Herbal Plants Project, wherein the major part is implemented by RSCN. Because of RSCN's NGO status, MOP has no involvement in its overall annual funding. MOP may play an important indirect role as it is responsible for general budget allocation for government agencies with whom the project will have to establish working agreements.

The PMU will coordinate the activities of all implementation partners such as the Jordan Valley Authority (JVA) and ASEZA, the Ministries of Agriculture (MOA), Tourism and Antiquities (MOTA), Environment (MOEnv). Municipalities and Rural Affairs (MMRA), NGOs and the private sector.

Technical coordination of project activities will be provided by a Core Technical Team which will operate from RSCN HQ. At field level three Field Teams will be formed in order to follow up activities in the seven IEM areas.

The PMU, Core Technical Team (CTT) and Field Teams will be assisted by an Advisory Team of national and international consultants, working as members of the CTT.

A Technical Working Group will be formed of key staff in the Core Technical Team and chaired by the Project Director. This group will have the mandate of decision making on technical issues, Monitoring &Evaluation, technical guidance to project implementation, and approval of all reporting activities.

Project Management Unit. The PMU, semi-integrated within the RSCN, will generally consist of the following positions: Project Director, Contracts and Procurement Officer, Communications and Public Relations Officer, Monitoring and Evaluation Officer and Support Staff. In an effort to build RSCN capacity the staffing will include a combination of RSCN staff and outside expertise. The PMU will, among others, be responsible for:

- Ensuring active participation of beneficiaries and the local population
- Removal of constraints obstructing project implementation
- Ensuring the participation of government organizations
- Liaising with the RSCN and other stakeholders
- Procuring services and equipment in accordance with the World Bank's procurement guidelines
- Preparation of annual work plans and budgets

- Preparation and submission of quarterly and annual progress reports to the Steering Committee and donor
- Accounting for project expenditures, which are to be audited annually
- Monitoring and evaluation of project activities

Core Technical Team. The Core Technical Team will operate under the PMU and be responsible to provide support to the project implementation. It will consist of long and short term national and international specialists and their RSCN counterparts in the following areas of expertise:

- International: a long-term Chief Technical Advisor (72 pm) and selected specialist advisors and trainers: an IEM/Land Use Planning Specialist (12 pm), a Community Development Adviser (8 pm), and an Extension Specialist (6 pm).
- National: an IEM/LUP Specialist (30 pm); an Institutional Reform Specialist (4 pm); a Legal Specialist (2 pm); a Trainer of Trainers (4 pm); a Community Development and PRA Specialist (10 pm); an Alternative Livelihoods Specialist (18 pm); an Ecotourism and Enterprise Development Specialist (4 pm); an Extension/IPM Specialist (primarily Agriculture) (18 pm); and a Botanist (2 pm).

IEM Field Teams. Three IEM Field Teams (called Project Field Teams in the IEM/LUP Technical Report) will be established to cover all the seven IEM working areas. The distribution of the teams will be as follows:

- IEM Field Team 1 (north)– to undertake project activities in Yarmouk (covering the Yarmouk IEM Area, the Yarmouk PA and the Jordan River and the Jordan River IEM area)
- IEM Field Team 2 (central) – to undertake projects in Mujib and Fifa (including the Mujib PA, the Mujib North IEM Area, the Mujib South IEM Area, the Fifa IEM area and the Fifa PA)
- IEM Field Team 3 (South)– to undertake projects in Qatar and Masuda (thus covering Qatar IEM Area and PA and Masuda IEM area and PA)

Each IEM Field Team will consist of a Field Team Leader, a Community Liaison/Development Officer, an IEM Officer, a Biodiversity/Nature Reserves Officer and Support Staff. The exact location where each Field Team is to be based will be decided during the project's inception phase. The Field teams will liaise and coordinate the project activities with the relevant regional government agencies. It will furthermore assure the involvement of local NGOs and community organizations and their representatives. The IEM Field Teams will furthermore undertake all preparatory activities for PA establishment, IBA related activities, community development and joint community-based IEM/LUP. During the course of the project and once PAs are established, a team of Protected Area Staff (PAST) will be nominated being in charge of the day-to-day work with the community, in cooperation with operational partners. This means that the 3 IEM Field Teams will gradually phase out and be transformed into 4 new teams of Protected Area Staff. For preliminary budgeting purposes, a three years' input is therefore assumed both of the IEM Field Teams and the new PAST teams.

Project Steering Committee. The PMU will be guided by a Steering Committee to be chaired by the Executive Director of RSCN, with an important role for MOP, since this agency is the principle government counterpart and GEF focal point and will further include representatives from JVA, ASEZA, MOA, MOTA, MMRA, MOEnv, NRA, IUCN as well as a representative from the farming community and representatives from the local communities. The CTA and Project Director will also be members of the Steering Committee. The project Steering Committee has the mandate to supervise and direct the

implementation of project activities. It will have to address possible constraints that hinder or obstruct the project implementation, and will approve the annual work plans.

Technical Working Group. A Technical working Group, chaired by the Project Director will be established. The membership of the Technical Working Group includes, apart from the Project Director; the Chief Technical Adviser, and the Coordinators of each project component. The Terms of Reference for the Technical Working Group include the following elements:

- To manage and implement the five principal GEF components of the project.
- To monitor and amend the technical work plans of the five principal GEF project components
- To provide specific feedback on the Inception Phase of the project and if necessary to re-design any problematic elements;
- To provide technical backstopping and review of the 3 IEM Field Teams
- To review project documents and reports
- To provide monitoring and evaluation reports to the PMU

Task Forces. Task Forces, with a flexible composition (based on emerging necessity and stakeholders concerned), duration (as long as the need is felt) and mandate (for one particular issue, one or more IEMs etc.) will be formed to focus on particular areas or issues that the project is facing and has to resolve. Task Forces will compose of members of Technical Core Team, Field Team, partners and stakeholders, community representatives and, if necessary, outside specialists. The issues could be of any type (related to LUP, ecotourism, migratory species, water management, solid waste management etc.), but are too substantial and too specific to be dealt with by a steering committee or by a single specialists. The work of Task Forces will be problem-solution-oriented, as to avoid long administrative procedures and to short-cut communication with decision makers. The outputs will vary from a joint action plan of operational partners, to a compromised decision or advice in case of stakeholder conflicts, to joint supervision of implementation activities. The existence can be relatively short or long. For example, Land Use Planning task forces to coordinate and address issues related to IEM, LUP and community development will probably function for a long (entire project?) duration.

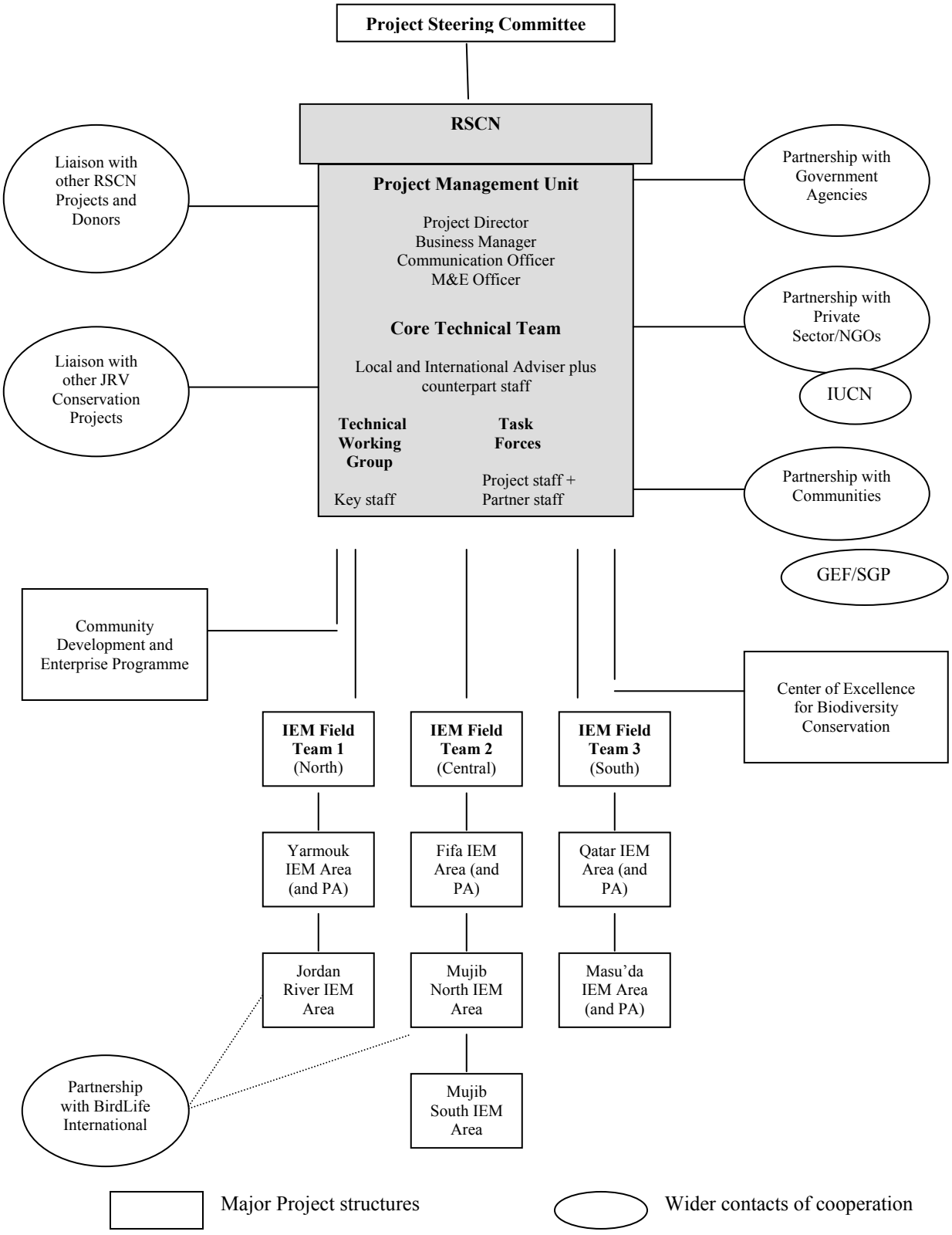
*Partnerships.*The project will create partnerships with implementation partners, including government agencies, NGOs, communities and civil society. Partnerships can be effectuated in different ways. Key staff of partner institutions can become members of project Task Forces based on necessity. Partners can be asked to provide technical assistance, participate in implementation or take subcontracts to carry out certain tasks more or less independently. Contributions can be compensated in monetary terms (subcontracts), on a co-financing basis, in exchange of capacity building or otherwise. For each form of partnership, agreements will be drafted and signed.

Among the NGOs, the special role of IUCN is vested in the recent agreement of cooperation with RSCN. Involvement of IUCN would not be limited to their position in the Steering Committee and access to their documentation. Their role could be much more active and include technical assistance in field operations, assistance in staff recruitment (for the Advisory Team and the Core Technical Team), and joint fund raising for co-financing.

Financial Management. As mentioned above the project will be implemented by the PMU together with the RCSN, with assistance from the Core Technical Team and the International Advisory Team. The PMU will be responsible for the financial management of the project, within the overall payment authority of the Finance Department of the MOP. The PMU will maintain all financial and accounting records; prepare accounting entries; review, post and prepare monthly bank reconciliations as well as record all disbursements from GEF funds. It will most importantly also prepare quarterly Financial Monitoring Reports and annual financial statements. The latter will be audited by a qualified auditor,

which is acceptable to the Bank. The Financial Monitoring Report will be prepared within 45 days after the end of each quarter and will include: (i) a summary on the project's progress; (ii) sources and uses of funds, (iii) costs planned and incurred during the quarter and to date, per project budget line and component, together with an explanation if major changes occur and (iv) procurement summaries and an updated inventory list.

Organizational Chart



Annex 7: Financial Management and Disbursement Arrangements

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

Financial Management and Disbursement Arrangement

The project will be implemented by the Royal Society for the Conservation of Nature (RSCN)/PMU with assistance from the Core Technical Team and the International Advisory Team. The RSCN/PMU will be responsible for the financial management of the project, within the overall payment authority of the Finance Department of the MOP. The PMU will maintain all financial and accounting records; prepare accounting entries; review, post and prepare monthly bank reconciliations as well as record all disbursements from GEF funds. It will most importantly also prepare quarterly Financial Monitoring Reports and annual financial statements. The latter will be audited by a qualified auditor, which is acceptable to the Bank. The Financial Monitoring Report will be prepared within 45 days after the end of each quarter and will include: (i) a summary on the project's progress; (ii) sources and uses of funds, (iii) costs planned and incurred during the quarter and to date, per project budget line and component, together with an explanation if major changes occur and (iv) procurement summaries and an updated inventory list.

Auditing

The RSCN/PMU will - as mentioned above - appoint an independent auditor, acceptable to the World Bank, who will undertake an annual audit in accordance with the International Standards on Auditing. The auditor will give an opinion on: (i) the project's financial statements (project balance sheets, accounts statements and cash flow charts); (ii) the statement of expenses and the Special Account. The audited financial statements will together with the auditor's comments and opinion be forwarded to the World Bank within six months after the end of the financial year.

Disbursement

To facilitate project implementation and disbursement against eligible expenditures, a Special Account will be established in the Central Bank of Jordan that will be operated under terms and conditions satisfactory to the Bank. The SA would have an authorised allocation of US$ 50,000 and maintained in US$. The initial advance to the SA will be limited to US$ 250.000 until the combined total withdrawals and the amounts in special commitments exceeds US$ 750.000. Thereafter it will be increased to US$ 500.000. The SA will be used to finance only eligible expenditures and documentation would need to be maintained to support all expenditures from the SA for purposes of post review and audit. The Special Account will be replenished on the basis of withdrawal applications, which have to be supported by the appropriate documentation.

Annex 8: Procurement Arrangements

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

A. General

Procurement for the proposed project would be carried out in accordance with the World Bank's "Guidelines: Procurement Under IBRD Loans and IDA Credits" dated May 2004; and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004, and the provisions stipulated in the Legal Agreement. The various items under different expenditure categories are described in general below. For each contract to be financed by the GEF Grant, the different procurement methods or consultant selection methods, the need for pre-qualification, estimated costs, prior review requirements, and time frame are agreed between the Borrower and the Bank in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

Procurement of Works: Works procured under this project would include: small facilities construction for Protect Areas facilities, and infrastructure for protected areas tourism, for the four protected area sites. The procurement will be done using the Bank's Standard Bidding Documents (SBD) for all ICB and National SBD agreed with or satisfactory to the Bank.

Procurement of Goods: Goods procured under this project would include: apart from vehicles include equipment and furniture for the facilities at the Protected Areas as well as RSCN office. The procurement will be done using the Bank's SBD for all ICB and National SBD agreed with or satisfactory to the Bank.

Procurement of non-consulting services: There will be no non-consulting services.

Selection of Consultants : Both national and international consultants are required to support the project implementation. The budgetary requirement for international consultants is estimated at US$ 1.76 million, whereas for local consultants an estimated amount of US$ 0.76 million is needed. RSCN might make use of the services of IUCN for the selection of consultants as this organisation has a huge network of capable specialist in relevant fields. Short lists of consultants for services estimated to cost less than equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004.

- *Quality and Cost-Based Selection (QCBS):* all consulting service contracts costing US& 100,000 equivalent or more for firms would be awarded through the Quality and Cost Based Selection method. To ensure that priority is given to the identification of suitable and qualified national consultant, shortlists for contracts estimated at or less than US$ 50,000 equivalent may be comprised entirely of national consultants (in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines), provided that a sufficient number of qualified individuals or firms (at least three) are available. However if foreign firms have expressed interest they would not be excluded from consideration. The PMU would ensure widely publicised requests for expression of interest to get candidacy from consultants. Regarding services to be financed under the GEF grant, all contracts for firms estimated to cost the equivalent of US$ 100,000 or more would be procured using QCBS method. As spelled out by the Consultant Guidelines the short list shall include six consulting firms, the weight factor to be used for the technical proposal shall be 80 percent and 20 percent for the financial proposal.

- *Least Cost Selection (LCS):* would also apply. For financial and technical audits to cost less than US$ 100.000, the selection would be made on the basis of Least Cost Selection (LCS).
- *Selection based on Consultants Qualifications (CQ):* Consultants for small studies, engineering designs and supervision, monitoring and evaluation and short term assignments costing less than US$ 100,000, would be selected through the selection based on the Consultant Qualification method.
- *Individual Consultants:* Consultants for services meeting the requirements of section V of the consultant guidelines may be selected under the provisions for the Selection of Individual Consultants, i.e. through the comparison of the curriculum vitae of at least three qualified individuals, and in accordance with the provisions of paragraph 5.2 through 5.3 of the Consultant Guidelines. Some individual consulting services may with Bank agreement be selected under single source basis in accordance with the provisions of paragraph 5.4 of the Consultant Guidelines.
- *Single source selection* may in exceptional occasions and with the Banks prior agreement be used for Training, advisory services related to activities of the technical support agencies and consulting assignments provide by NGOs to assist community based associations, in accordance with the provisions of paragraph 3.9-3.13 of the Consultant Guidelines.

Operating Costs: The operating costs i.e. costs required to run the vehicles and general expenditure to implement the project, not including the salaries of RSCN and other staff are estimated at US$ 1.24 million.

Others: Training Workshops, Seminars and Conferences, attendance and study tours will be carried out on the basis of approves annual programmes that will identify the general framework of training and similar activities for the year, including the nature of training/study tours/workshops, the number of participants and cost estimates.

The procurement procedures and SBDs to be used for each procurement method, as well as model contracts for works and goods procured, are presented in the Procurement Plan.

B. Assessment of the agency's capacity to implement procurement

Procurement activities will be carried out by the Implementing Agency the Royal Society for the Conservation of Nature (RSCN) and Project Management Unit (PMU). The RSCN is staffed by PMU, and the procurement function is staffed by a qualified procurement specialist.

An assessment of the capacity of the Implementing Agency to implement procurement actions for the project will be carried out at appraisal. The assessment will review the organizational structure for implementing the project and the interaction between the project's staff responsible for procurement specialist and the RSCN's relevant central unit for administration and finance.

The assessment will identify the key issues and risks concerning procurement for implementation of the project and will suggest corrective measures.

The overall project risk for procurement will be determined at appraisal.

C. Procurement Plan

The Borrower, at appraisal, will develop a procurement plan for project implementation which provides the basis for the procurement methods. This plan will be included in detail in the Project Implementation Plan. It will once approved be available in the project's database and in the Bank's external website. The Procurement Plan will be updated in agreement with the Project Team annually or as required to reflect the actual project implementation needs and improvements in institutional capacity. The various expenditure categories are summarised in the table below:

Expenditure category	Estimated Costs US $ 1000	Procurement Method
International consultants	1.816	QCBS
National consultants	0.714	QCBS
Works	0.765	NCB
Goods and equipment Vehicles (15) Equipment/ Goods	 0.448 0.416	 NCB NCB
Operational Costs	1.241	Others

D. Frequency of Procurement Supervision

In addition to the prior review supervision to be carried out from Bank offices, the capacity assessment of the Implementing Agency has recommended bi-annual supervision missions to visit the field to carry out post review of procurement actions.

E. Details of the Procurement Arrangements Involving International Competition

1. Goods, and Consulting Services

All contracts for goods above US$ 100,000 and the first three contracts for works, goods and services, irrespective of the contract amount, shall be subject to prior review by the Bank. Contracts with consulting firms above US$ 100,000 and with individuals above US$ 50,000 shall be subject to prior review. All other contracts shall be subject to pre review during Bank supervision missions.

Thresholds for Procurement Methods and Prior Review

Expenditure Category	Contract Value Threshold (US$ thousands)	Procurement Method	Contracts Subject to Prior Review (US$ millions)
1. Works	< 300	NCB	First three contract
2. Goods	> 200	ICB	All First three contracts and all subsequent contracts larger than US$ 0.2 m.
- Vehicles	>100 and <= 200 <= 300	NCB NCB	First three contracts
3. Services - Individual Consultant	>= 50	Section V of Consultant Guidelines	Report, TOR and Contract (All)
- Firms	> 100 <= 100	SFB CQ	Report, TOR and Contract Report, TOR and Contract
4. Miscellaneous			

Annex 9: Economic and Financial Analysis

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Total Financing Required							
Project Costs							
Investment Costs	2.25	0.63	1.04	0.63	0.63	0.61	5.79
Recurrent Costs	1.50	1.23	1.04	0.97	0.87	0.85	6.46
Total Project Costs	3.75	1.86	2.08	1.59	1.50	1.46	12.25
Total Financing	**3.75**	**1.86**	**2.08**	**1.60**	**1.50**	**1.46**	**12.25**

Financing							
IBRD/IDA							
Government	0.25	0.25	0.25	0.25	0.25	0.25	1.5
Central							
Provincial							
RSCN	0.33	0.33	0.33	0.33	0.33	0.33	2.00
GEF	2.19	0.78	0.94	0.77	0.75	0.73	6.16
Co-financiers	1.00	0.50	0.56	0.24	0.16	0.14	2.60
Beneficiaries							
Total Project Financing	**3.75**	**1.86**	**2.08**	**1.60**	**1.50**	**1.46**	**12.25**

Annex 10: Safeguard Policy Issues

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

EA and EMP

An Environmental Assessment and Executive Summary and the Appraisal-stage ISDS, finalized and disclosed prior to appraisal, follows the required formats for a Category B project, as provided by OP 4.01 Environmental Assessment, inclusive of the Environmental and Social Management Plan (EMP). As it pertains to the OP 4.12 Involuntary Resettlement, in evaluating the status of the proposed protected areas, reviewing the current activities, consulting with the RSCN, and analyzing the proposed PA and IEM activities, it was determined that there would not be any land acquisition or physical or economic resettlement. Therefore, OP 4.12 is not be triggered; consequently, there is no need for a Resettlement Policy Framework or Resettlement Policy Plans for each site. Though there is currently some grazing at the proposed Mas'uda PA, and potential grazing in other sites, it was ascertained that any problems of overgrazing in the proposed PAs will be addressed by grazing management and good practices, and not by prohibiting grazing activities.

Cumulative Impacts on the physical environment

No negative cumulative impacts are expected to occur as a result of establishing the proposed natural reserves. On the contrary, the expected cumulative impacts on the physical environment are positive and represented by:

- Conservation of the local morphology, landscaping and the local drainage system.
- Increase of the rate of groundwater recharge.
- Participation in conserving the groundwater quality.

The effect of these impacts will continue and their value and contribution will grow up with time as the implementation of the natural reserve concept continue.

The expected cumulative impacts from the implementation of the IEM concept are mainly positive and represented by:

- Introduction of the concept of Eco-tourism.
- Implementation of the sustainable agricultural program.
- Participation in upgrading the solid wastes management system.

The positive cumulative effect of those impacts will increase by time and along the project period. The only cumulative negative impact that might result from the implementation of the IEM concept is the influx of tourists to the different project areas. In the absence of a sound management plan, the magnitude of this problem will increase by time and might extend even after the end of the project period.

Almost all assessed impacts by the intended project on the biological environment are cumulative, regardless of replicating successful IEM/LUP. These cumulative impacts include:

- Maintaining ecosystems balance and integrity.
- Preservation of biological habitats within the protected areas.
- Improving the conservation status of threatened flora and fauna species.
- Maintaining rest points for migratory birds crossing the rift valley during the migration
- seasons.

Cumulative Impacts on Socio-Economic Conditions

The cumulative socio-economic impacts of this project revolve around the following aspects:

- Enhancement of public awareness with respect to environmental protection and biodiversity conservation.
- Development of the concept of conserving biodiversity through proper land use planning.
- Development and promotion of good land management practices.
- Encouragement of the replication of environmentally sound and successful IEM subprojects that proved to be economically profitable to the local communities.

These impacts are being assessed and will be described in the Final EA report.

Cumulative Impacts on Archaeological and Cultural Heritage Resources

The establishment of four new protected areas in addition to the already established protected areas at Mujib and Dana provides unique opportunity for the discovered or undiscovered sites to be protected from man-made damages, especially since these sites will witness higher recognition for their historic, cultural and touristic values. Also, these sites can be recognized by the IEM projects as source of themes for socio-economic livelihood alternatives. Deliberate assessment of the preservation impacts on archaeological resources will be provided in the final EA report.

Annex 11: Project Preparation and Supervision

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

Project Schedule	Planned	Actual
PCN review	April 8, 2004	April 8, 2004
Initial PID to PIC	April 8, 2004	April 8, 2004
Initial ISDS to PIC	April 8, 2004	April 8, 2004
Appraisal	September 21, 2006	
Negotiations	December 5, 2006	
Board/RVP approval	February 15, 2007	
Planned date of effectiveness	March 21, 2007	
Planned date of mid-term review	March, 22, 2010	
Planned closing date	March 21, 2013	

Key institutions responsible for preparation of the project:

- Royal Society for the Conservation of Nature with assistance from Arcadis Euroconsult

Bank staff and consultants who worked on the project included:

Name	Title	Unit
Dahlia Lotayef	Task Team Leader	MNSRE
Sylvie Pittman	Language Program Assistant	MNSRE
Nathalie Abu-Ata	Water Resources Specialist	MNSRE
Martha Jarosewich-Holder	Environmental Specialist	MNSRE
Colin Scott	Social Specialist	MNSRE
Diana Masri	Financial Management Specialist	MNAFM
Majed M. El-Bayya	Procurement Specialist	MNAPR

Annex 12: Documents in Project File

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

A. Project Implementation Plan

-PIP under preparation

B. Bank Staff Assessments

- PCN - April 2004
- Pre-appraisal mission: Aide-Mémoire dated August 2005

C. Other

- Inception Report, Integrated Ecosystem Management in the Jordan Rift Valley Project, prepared for RSCN, Arcadis Euroconsult & Consulting Engineering Center, April 2005
- Six background specialist reports, including Conservation-oriented Land Use Planning; Protected Areas Management; Socio-Economic Baseline Surveys and Participatory Rural Appraisal; Capacity Development and Training Needs Analysis; Institutional Analysis; and The impact of the establishment of the Dana Reserve
- Jordan Protected Area Review (1999)
- Management Agreement for the Site of Panorama – Dead Sea
- Law no. 37 of the Year 1985 for the Jordanian Hashemite funds for Human Development (JOHUD)
- Memorandum of Cooperation JOHUD-RSCN
- Memorandum of Cooperation IUCN-RSCN
- Environmental Impact Assessment Report, February 2006
- Project organizational chart
- USAID Project Concept Note
- National Biodiversity Strategy and Action Plan, May 2003, Ministry of Environment, Jordan

Annex 13: Statement of Loans and Credits

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

As of March 22, 2006

Active Projects		Last PSR Supervision Rating			Amount in US$ Millions			Difference Between Expected and Actual Disbursements [a/]	
Project ID	Project Name	DO	IP	Fiscal Year	IBRD	GRANT	Undisb.	Orig.	Frm Rev'd
P049706	ODS Phaseout II	S	S	1997		5.0	0.9	0.4	0.1
P048521	Amman Water & Sanitation	S	S	1999	55.0		2.2	2.2	1.0
P069326	Higher Education Development	S	MS	2000	34.7		11.7	11.7	2.1
P076961	Horticultural Exports Promotion	S	S	2002	5.0		3.0	3.0	0.0
P075829	Education Reform for Knowledge Ec.	S	S	2003	120.0		83.5	29.1	0.0
P069847	Conservation of Medicinal Plants	S	S	2003		5.0	3.9	1.7	
P081505	Amman Development Corridor	S	S	2004	38.0		35.9	13.8	0.0
P091787	Public Sector Reform Capacity Building	MS	MS	2005	15.0		14.4	4.0	
Total					**267.7**	**10.0**	**155.5**	**65.9**	**3.2**

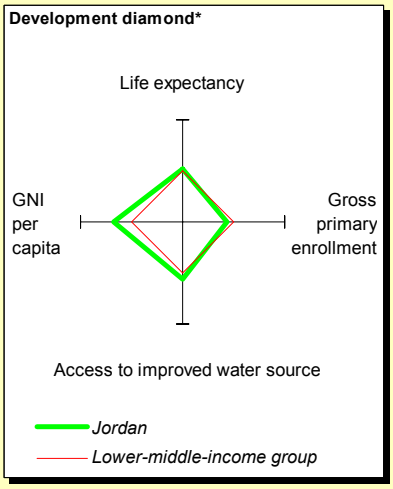
Statement of IFC's
Held and Disbursed Portfolio
As of December 31, 2005
(In US Dollars Millions)

		Held				Disbursed			
FY Approval	Company	Loan	Equity	Quasi	Partic	Loan	Equity	Quasi	Partic
2002	MEREN	4.4	0.6	0.0	0.0	4.4	0.6	0.0	0.0
1996	Zara	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0
2003	Al-Hikma	11.2	0.0	0.0	0.0	11.2	0.0	0.0	0.0
1997	BTC	1.8	0.0	0.0	0.0	1.8	0.0	0.0	0.0
2001	Boscan Jordan	7.2	0.0	0.0	0.0	7.2	0.0	0.0	0.0
	Hikma UK	0.0	0.9	0.0	0.0	0.0	0.9	0.0	0.0
1997	El-Zay	0.4	0.0	0.0	0.0	0.4	0.0	0.0	0.0
2001	Jordan Gateway	2.8	0.0	0.0	0.0	2.8	0.0	0.0	0.0
1999	MAICO	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
2000	SGBJ	0.0	2.1	0.0	0.0	0.0	2.1	0.0	0.0
Total Portfolio:		**27.8**	**6.8**	**0.0**	**0.0**	**27.8**	**6.5**	**0.0**	**0.0**

Annex 14: Country at a Glance

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

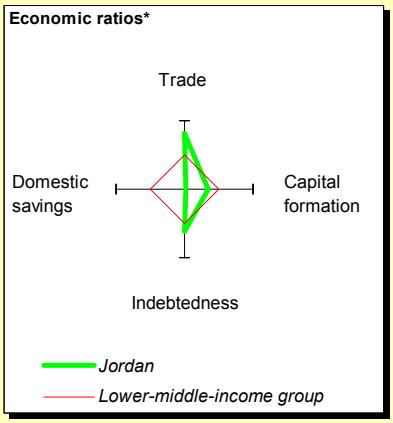
POVERTY and SOCIAL	Jordan	M. East & North Africa	Lower-middle-income
2004			
Population, mid-year *(millions)*	5.4	294	2,430
GNI per capita *(Atlas method, US$)*	2,140	2,000	1,580
GNI *(Atlas method, US$ billions)*	11.6	589	3,847
Average annual growth, 1998-04			
Population *(%)*	2.8	1.8	1.0
Labor force *(%)*	3.8	-1.3	0.7
Most recent estimate (latest year available, 1998-04)			
Poverty *(% of population below national poverty line)*	..	..	..
Urban population *(% of total population)*	79	56	49
Life expectancy at birth *(years)*	72	68	70
Infant mortality *(per 1,000 live births)*	23	45	33
Child malnutrition *(% of children under 5)*	4	..	11
Access to an improved water source *(% of population)*	91	88	81
Literacy *(% of population age 15+)*	90	69	90
Gross primary enrollment *(% of school-age population)*	99	100	114
Male	99	104	115
Female	99	94	113



KEY ECONOMIC RATIOS and LONG-TERM TRENDS

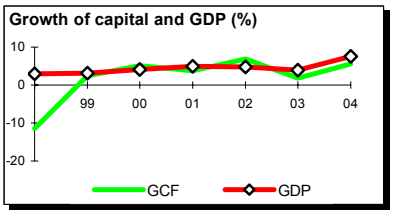
	1984	1994	2003	2004
GDP *(US$ billions)*	5.2	6.2	9.9	11.2
Gross capital formation/GDP	28.8	33.3	22.5	21.2
Exports of goods and services/GDP	37.7	48.0	44.2	42.2
Gross domestic savings/GDP	-10.2	10.0	-2.8	-0.9
Gross national savings/GDP	21.4	26.2	27.1	22.9
Current account balance/GDP	-5.3	-6.4	4.3	1.6
Interest payments/GDP	2.5	3.3	1.6	1.3
Total debt/GDP	63.8	121.1	83.8	74.3
Total debt service/exports	12.5	13.8	16.8	9.1
Present value of debt/GDP	..	..	78.6	..
Present value of debt/exports	..	..	113.4	..

	1984-94	1994-04	2003	2004	2004-08
(average annual growth)					
GDP	1.7	4.0	4.0	7.5	4.1
GDP per capita	-3.1	1.0	1.3	4.9	1.8
Exports of goods and services	5.0	3.1	4.1	6.7	7.0

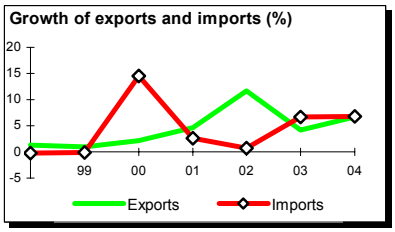


STRUCTURE of the ECONOMY

	1984	1994	2003	2004
(% of GDP)				
Agriculture	5.5	5.2	2.2	2.1
Industry	29.9	29.1	26.0	25.3
Manufacturing	14.0	15.9	15.8	15.2
Services	64.6	65.6	71.8	72.6
Household final consumption expenditure	83.2	67.4	79.8	80.9
General gov't final consumption expenditure	27.0	22.6	23.0	20.0
Imports of goods and services	76.7	71.3	69.4	64.3



	1984-94	1994-04	2003	2004
(average annual growth)				
Agriculture	8.9	-0.9	1.0	2.0
Industry	1.4	4.1	5.0	5.0
Manufacturing	3.5	5.4	3.5	3.5
Services	0.3	4.2	2.5	5.6
Household final consumption expenditure	-1.2	5.9	7.0	10.5
General gov't final consumption expenditure	-1.3	2.5	3.0	-1.7
Gross capital formation	5.4	-0.8	1.8	5.6
Imports of goods and services	1.0	2.9	6.6	6.8



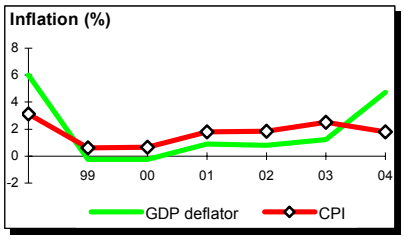
Note: 2004 data are preliminary estimates.

This table was produced from the Development Economics LDB database.

* 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.

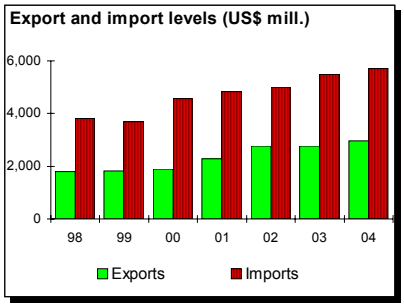
PRICES and GOVERNMENT FINANCE

	1984	1994	2003	2004
Domestic prices				
(% change)				
Consumer prices	3.8	3.5	2.5	1.8
Implicit GDP deflator	-0.3	6.9	1.2	4.8
Government finance				
(% of GDP, includes current grants)				
Current revenue	31.7	34.0	33.6	28.5
Current budget balance	7.0	6.2	2.1	1.5
Overall surplus/deficit	-1.8	-1.2	-4.9	-4.0



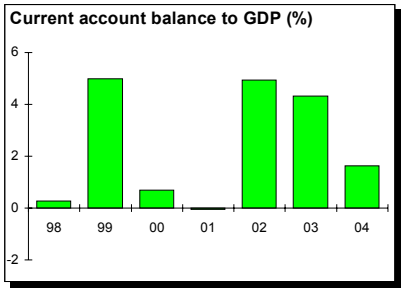
TRADE

	1984	1994	2003	2004
(US$ millions)				
Total exports (fob)	756	1,424	2,772	2,966
Food and live animals	109	131	141	156
Phosphates	181	144	143	159
Manufactures	330	613	1,660	1,707
Total imports (cif)	2,786	3,381	5,480	5,699
Food	479	586	745	822
Fuel and energy	533	414	815	753
Capital goods	444	758	1,328	1,417
Export price index *(2000=100)*	90	95	97	98
Import price index *(2000=100)*	103	84	110	107
Terms of trade *(2000=100)*	87	113	88	92



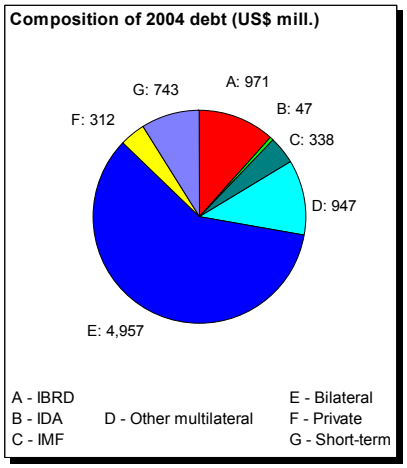
BALANCE of PAYMENTS

	1984	1994	2003	2004
(US$ millions)				
Exports of goods and services	1,935	2,985	4,393	4,721
Imports of goods and services	3,852	4,395	6,908	7,203
Resource balance	-1,917	-1,410	-2,515	-2,482
Net income	-61	-315	99	168
Net current transfers	1,707	1,326	2,845	2,496
Current account balance	-271	-400	429	182
Financing items (net)	-66	554	131	-127
Changes in net reserves	337	-154	-561	-55
Memo:				
Reserves including gold *(US$ millions)*	687	1,891	3,940	3,906
Conversion rate *(DEC, local/US$)*	0.4	0.7	0.7	0.7



EXTERNAL DEBT and RESOURCE FLOWS

	1984	1994	2003	2004
(US$ millions)				
Total debt outstanding and disbursed	3,286	7,553	8,337	8,315
IBRD	86	635	1,017	971
IDA	83	71	50	47
Total debt service	409	572	1,158	676
IBRD	10	102	96	111
IDA	1	2	3	3
Composition of net resource flows				
Official grants	586	306	1,144	..
Official creditors	107	114	-226	-193
Private creditors	150	-184	-479	-16
Foreign direct investment (net inflows)	78	3	376	..
Portfolio equity (net inflows)	0	0	-58	..
World Bank program				
Commitments	130	107	120	38
Disbursements	26	58	35	29
Principal repayments	3	58	67	88
Net flows	22	0	-33	-59
Interest payments	8	46	32	26
Net transfers	14	-46	-65	-85



Note: This table was produced from the Development Economics LDB database. 8/25/05

Annex 15: Incremental Cost Analysis

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

Context and Development Goals

The Jordan Rift Valley forms part of the Great Rift Valley connecting Africa and Northern Europe. It is a major fly way between the two continents and used by millions of migrating birds each year. Birdlife International's report on Important Bird Areas for the Middle East, lists twenty-seven sites for Jordan, of which seventeen are located in the Jordan Rift Valley.

Apart from its significance for birds, the Jordan Rift Valley also holds many large and internationally important ecosystems, including desert, mountains, wetlands, sea and forest; e.g. the Dead Sea, the Gulf of Aqaba and the Jordan and Yarmouk river systems, as well as numerous specialised or unique habitats of regional importance such as the *Quercus aegilops* oak forests of Yarmouk. To date only one wetland of international importance has been designated, in Jordan, namely the Azraq marshes in the central eastern part of the country, well outside the Rift Valley. The Directory of Wetlands of the Middle East however, recognizes at least six notable wetland sites in the Jordan Rift Valley. Furthermore, the Dead Sea itself is the lowest and most saline water body on Earth and is noted as one of the World's "biodiversity hot spots" because its extremely harsh environment has engendered a high level of endemism.

Previous GEF activities in the country have revealed the presence of many globally threatened species, including several endemics. The persistent causes of habitat degradation and loss are deforestation, overgrazing, inappropriate agriculture, urbanization and population growth. The growth in mass tourism has also been cited as a 'new' threat to environmental quality in the JRV (NEAP Working Paper 1995). Habitat degradation and species loss in the JRV is serious and accelerating, largely as a result of increasing development pressure, inappropriate agricultural practices and population growth.

The GOJ has realised the threats to and fragility of the ecosystem in the JRV, and recognised the potential loss of biodiversity. It therefore is supporting policies and investments that can strengthen conservation and environmental protection and is interested in establishing a framework that effectively integrates (economic) development activities and sustainable natural resources management standards into and IEM and LUP system. At the same time it is recognised that community participation is an essential element in the integrated ecosystem management approach that needs to be developed. Despite this recognition, little headway has so far been made in the area of Integrated Ecosystem Management and Land Use Planning, for the following reasons:

- Absence of coherent conservation-oriented integrated ecosystem management and land use strategies
- Lack of participatory integrated resource management approaches and activities that provide for economic development and sustainable resource use to local communities
- Weak legal and institutional framework for integrated ecosystem management with limited capacity and knowledge

The overall project development objective of the GEF Project "Integrated Ecosystem Management in the Jordan Rift Valley" is to introduce integrated ecosystem management in the Jordan Rift Valley.
The primary vehicle to achieve this objective will be financial and technical support for community driven, integrated ecosystem management plans and subprojects that can simultaneously address local development needs and local environmental challenges.

Baseline Scenario

In the baseline scenario or the without project situation very few activities will take place in the area of IEM and LUP as experience in comprehensive land use planning, which takes due consideration to biodiversity conservation and habitat protection is still limited and capacity in IEM is inadequate. Therefore under the baseline scenario the ongoing loss of biodiversity will continue.

Various institutions will continue their LUP activities related to the JRV, which will mainly be focussed on development, with limited room for community involvement and biodiversity concerns. RSCN will continue to implement its mandate to manage and control already existing protected areas. Out of the total annual financial allocation RSCN would divert an approximate amount of US$ 150.000 towards the maintenance of Mujib PA and about US$ 100,000 on alternative livelihood activities in this area. However, RSCN has limited additional resources to extend the number of Protected Areas to other important areas and thus improve their connectivity. This means that its efforts will have a positive effect on the conservation of habitats and ecosystems in the already existing protected areas, but the negative trends that have been identified in the four proposed project areas will continue. As part of the routine capacity building program of RSCN, about US$ 50.000 would be spend on training and awareness raising under this baseline scenario. This would be insignificant a contribution to strengthening the capacity at various levels and would hardly result in streamlining of procedures to address IEM and LUP in a coordinated and systematic approach.

Alternative Scenario

With GEF support the project will start up various activities that should result in the introduction of IEM in the Jordan Rift Valley. The activities and areas of work to be supported by GEF funding have been identified through a root cause analysis (see tables below). Root Cause analysis and response by the GEF project:

Direct causes	Root causes	GEF Alternative
Problems related to IEM and LUP:		
Conflicts between development activities and biodiversity conservation: no integrated ecosystem management approach	Low level of Government support (insufficient technical support) Institutional framework for IEM non-existing Legal framework absent Lack of capacity Lack of awareness Difficulty to enforce regulations	Mainstreaming of IEM and LUP Review of institutions system and streamlining of organisational set-up Review of legislative framework and propose adjustments, if required
Little consideration for biodiversity in existing LUP	Lack of awareness Lack of capacity	Awareness and training programmes at national, regional and local level
Lack of community participation in planning	Low level of Government support (insufficient technical support) Legal framework absent Limited community organisations	Community organisation and formation of stakeholder groups Make legal provisions to support community involvement
Use of inappropriate farming techniques	Lack of alternative technology Weak extension service Lack of capacity and awareness with the farmers	Introduction of IPM and organic farming Introduction of alternative livelihoods Strengthening the extension service

Direct causes	Root causes	GEF Alternative
Problems related to PA establishment and management		
Absence of comprehensive plan for natural types and habitats conservation in the reserve	Weakness of RSCN in preparing these plans Lack of information required for these plans	Baseline surveys Capacity building
Unsustainable grazing, over-grazing	Absence of ecological awareness Weakness in legislations and their implementation No grazing management plans Traditions Absence of grazing zones Easy to reach the places Free grazing	Awareness and training programme Alternative livelihoods Alternative agricultural and farming practices Grazing management plans promotion of good practices
Unsustainable hunting (especially Ibex)	Absence of ecological awareness Weakness in legislations and their implementation Traditions Easy to reach the places Presence of Automatic weapons Presence of 4-wheels vehicles Weakness in patrolling group of reserve	Awareness raising Law enforcement and control
Unsustainable collection of medicinal plants and other plants randomly	Direct use of them from the locals Absence of ecological awareness Weakness in legislations and their implementation No implemented system for collecting plants	Awareness raising Law enforcement and control Sustainable use
Limited awareness of IWRM principles, as they pertain to water projects and building dams	Lack in water resources on the national level Absence of awareness fir the decision makers Increase in investment projects in the Dead Sea basin Spread of water need agriculture in Jordan Valley	Capacity building at all levels Improved agricultural techniques Improved hydrological techniques
Unsustainable mining	Weakness in legislations and their implementation Weak of awareness in the natural resources authority	Awareness raising Law enforcement and control Sustainable use
Damage to the ruins	Weakness in cultural awareness Randomly ruins specimens collection Weakness in ruins locations Absence of ruins locations protection plan	Awareness raising Law enforcement and control
Lack of socio-economic programs around the reserve	New managing for the socio-economic section in the developing plan Weakness in funding these programs	Alternative livelihoods programme
Weakness of eco-tourism programs with developing the local community	New beginning for developing the infrastructure of eco-tourism programs in the reserve No clear mechanism for benefits of local community from eco-tourism programs	Promotion of tourism Establishment of tourism facilities
Technically weakness of reserve management team in reserves managing	Most of employees are new with no experience in managing reserves Weakness of training programs specialized in reserve management Increased staff responsibilities	Capacity building Institutional strengthening and increase in staffing
Lack in equipments and infrastructure required for reserve management	Lack in available funding resources for infrastructure and equipments	Introduction of appropriate technology and equipment
Weak implementation of reserve different management plans	Lack of clear comprehensive organizational structure for the reserve Lack of internal outreach plan between the employees	

Various benefits are expected at a global and national level. At global level, benefits will be obtained through (i) the introduction of integrated ecosystem management in the JRV, (ii) the enlargement of the protected areas, each having a management plan, geared towards habitat conservation and sustainable use (iii) the preservation of cultural and archeological remains in the project pilot areas (iv) the improvement

of agricultural practices, through the promotion of Integrated Pest Management, organic farming and the introduction of crops with reduced water requirements. At the national level, (v) enhanced capacity in IEM of government agencies, NGOs and communities and (vi) income generation and alternative livelihoods especially geared towards disadvantaged community members and women, can be added. The tables below provides an overview of the expected project outputs and their contribution to global benefits, shared global and national benefits or primarily national benefits is given:

Global benefits

Annex 1 and Annex 20 detail and illustrated the JRV ecological importance. The Jordan Rift Valley, is a globally important biodiversity zone, both within and beyond the protected area. An effort has been made to build on the lessons learned, and integrate from the knowledge and engagement in the area[11]. However, and integrated effort is needed. The following project outputs will improve biodiversity conservation at newly established Protected Areas and strengthen capacity to manage the biodiversity resources contributing to long-term global benefits. The four PAs reserves were selected on a priority basis, in that they support significant populations of globally threatened species, whose conservation would benefit from interventions to remove threats to global survival. The benefits of these interventions – predominantly conservation activities – therefore, accrue mainly to the global community. Anticipated replication, of lessons learned and good management practices, to sites within the JRV and to the Eastern Desert will further protect areas of significant biodiversity and contribute to global benefits.

Output 3.1: Four new protected areas officially designated.
Output 3.2: Protected Area (PA) management plans are in place and operational.
Output 3.3: PA staff teams recruited, trained and in place.
Output 3.4: Facilities developed at four new PAs and at Mujib NR.

Shared global and national benefits

The outputs listed below will contribute to the mainstreaming of biodiversity conservation into land use planning in the Jordan Rift Valley and the building of capacity in IEM and environmental protection which has global as well as national benefits.

Output 1.1 Strategic Environmental Assessment (SEA) for the Jordan Rift Valley completed
Output 1.2 Recommended policy and institutional reforms to implement SEA
Output 1.3 Legislative and policy review to empower local communities to participate in land use planning.
Output 1.4 Recommendations identified in SEA piloted
Output 5.1 Institutional and community needs for enhanced biodiversity conservation identified
Output 5.2 Institutional strengthening recommendations implemented for government agencies
Output 5.3 Enhancing capacities of NGO and community organizations
Output 5.4 Monitoring and Evaluation Program effectively implemented
Output 5.5 Dead Sea Panorama Center, for biodiversity conservation and environmental management operational

[11] (GEF/UNDP) Conservation and Sustainable use of Biodiversity in Dibeen Nature Reserve; (GEF / World Bank) MOP Between :The National Centre for Agricultural Research and Technology (NCART) & RSCN Inventory of Medicinal and Herbal Plants of Jordan; (GEF-SGP) SGP Partner NGO's Capacity Building Programme; (Jordanian Swiss Counterpart Fund) The Bilateral Committee The Eco-Tourism and Socio Economic Development in the Mujib Reserve; (SDC) Eco-Tourism and Socio-Economic Development in the Mujib Reserve; (Canadian Embassy) Production of Interactive Environmental Games of Jordanian Children to Encourage Greater Environmental Awareness; (USAID) The Jordan Fund For Nature(Nature Centre), Water Efficiency and Public Information for Action WEPIA Integration Water Demand Management Concepts in the National Jordanian Curriculum; and (GTZ) Supporting the improvement Public Awareness.
Source: http://www.rscn.org.jo

Output 5.6 Project managed successfully

National benefits
Finally the following project outputs result mainly in national and local benefits.

Output 2.1 Community action plan for alternative livelihoods adopted
Output 2.2 Alternative livelihood activities are operational and viable in piloted areas
Output 2.3 Lessons learned from alternative livelihood demonstration projects documented and promoted
Output 4.1 Defining sustainable financing mechanisms
Output 4.2 Sustainable financing mechanisms in place and operational

Incremental Cost Matrix

Below the incremental cost matrix is given which lists the domestic and global benefits as well as the GEF incremental costs for each of the project components.

Component	Cost Category	US$ m	Domestic Benefits	Global Benefits
1. Assessment and Planning for Integrated Ecosystem Management	Baseline	0.01	Some RSCN staff involvement in the establishment LUP and routine contacts with relevant agencies.	Negligible contribution
	GEF Incremental	0.97	Institutional and legal framework in place at national and local level to implement SEA and support IEM that gives due consideration to natural resource management and biodiversity conservation (especially through a focus on alternative agricultural practices) A participatory approach to IEM with the participation of local communities as well as other stakeholders in place	Improved framework in place for IEM and LUP that takes care of biodiversity as well as development planning. Stronger enforcement to uphold environmental policies and regulations
	Additional non-GEF incremental costs	1.03		
2. Socio-economic Mitigation Measures for Alternative Livelihoods	Baseline	0.10	Alternative livelihood activities will focus on Mujib PA as part of the already established programme	Activities will have some positive impact related to Mujib PA only
	GEF Incremental	0.06	Increased opportunities for alternative livelihoods and income generation in rural communities	Improved basis through training for sustainable management of global biodiversity resources and opportunities for alternative income earning that would reduce pressure on the natural resource base
	Additional non-GEF incremental costs	1.89		
3. Capacity Building for Expanded Protected Area Network	Baseline	0.15	Operation and maintenance of Mujib PA	Conservation activities as part of the ongoing mandate and programme at Mujib
	GEF Incremental	4.35	Four new sites Registered as Protected Area and management	Improved conservation of globally significant ecosystems and

			plans for these areas prepared and implemented	biodiversity; removal of threats, and improved resource use practices by the surrounding communities
	Additional non-GEF incremental costs	1.70		
4. Sustainable Financing Mechanisms	Baseline	0		
	GEF Incremental			
	Additional non-GEF incremental costs	1.34	Mechanism for sustainable financial support to protected area management in place	Sustainable flow of funds for the establishment and maintenance of globally important ecosystems
5. Capacity Development and Monitoring and Evaluation	Baseline	0.05	Ongoing capacity building on traditional topics	
	GEF Incremental	0.76	Enhanced technical capacity and human resources related to IEM and LUP at the relevant government and non government agencies Increased information sharing and public awareness concerning the importance of biodiversity conservation Increased public sector capacity for IEM, LUP and protected area management	Increased capacity at various levels to plan and coordinate activities directed to safeguarding fragile ecosystems and habitats
	Additional non-GEF incremental costs	0.14		
Total	GEF Incremental	6.50	Total GEF input of US$ 6.50 million, includes US$ 350.000 for the PDF-B and an estimated amount of US$ 6.15 million for project implementation	
	Additional non-GEF incremental costs	6.10		
Total		**12.60**		

Annex 16: STAP Roster Technical Review

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

POINTS REQUESTED BY TERMS OF REFERENCE

KEY ISSUES

1. Scientific and technical soundness of the project

The project is well structured and the contents of its five components are consistent with its goal: To secure the ecological integrity of the Jordan Rift Valley as a globally important corridor. The components are also in accordance with the project's development objective, which is to mainstream integrated ecosystem management (IEM) practices in seven pilot areas the Jordan Rift Valley.

A core issue in this project is the safeguarding of globally significant biodiversity and restoring ecological integrity along the Jordan Rift Valley. In order to achieve that, it will mainstream biodiversity conservation into the land-use planning process and thus introduce and apply the principles of integrated ecosystem management in the Rift Valley. This is coherent with the current trends in conservation that stress the importance of protecting ecosystems rather than isolated areas.

In that sense, the proposal of expanding the Protected Areas Network by creating four new areas in this ecosystem and including them in the project seems logical and absolutely necessary. The proponents make it clear that, although it would be positive to create more areas, the number of four is a compromise between reasonable increase in demands, on the one hand, and a minimum number to achieve the establishment of a system of protected areas, on the other hand.

Thus, the project will focus on seven demonstration sites: Jordan River Area, Mujib North Area, Mujib South Area, Yarmouk River Area, Fifa Area, Qatar Area, and Ma'suda Area. These last four are the proposed new protected areas to be created during the project's implementation.

Another important consideration is that the project draws on important lessons learned from the Dana Nature Reserve project, carried out in the 1990s and considered highly successful. Particularly, the component dealing with *Alternative livelihoods* will be introduced based on the experience gained in that project, which had an explicit policy of employing local people as staff in protected areas.

The integrated ecosystem management approach intends to strike a balance between the interlinked objectives of biodiversity conservation and sustainable natural resources use, while keeping in mind the fair distribution and equitable sharing of benefits arising from these resources.

In accordance with that objective, the current project intends to apply a strategic "bottom-up" approach with great emphasis on community participation and capacity building. The proponents acknowledge the importance that this livelihood program be sustainable, so that it does not damage the conservation value of the sites included. In order to control the project's achievements and impact, a well structured participatory monitoring and evaluation system has been included not only as a control instrument but also as a mechanism for improved planning and implementation of the program in cooperation with the stakeholders.

The weak institutional and legal framework for integrated ecosystem management with limited capacity and knowledge is also addressed by the proponents, who have included a strategy to improve the legal

framework and fill the gaps that limit the full participation of communities in the management of their environment.

Although it is an ambitious project, the duration of 6 years seems adequate to achieve the stated objectives.

2. Global benefits of the project

The support of this project will have a positive impact on the environment and human populations of the Jordan Rift Valley.

This valley is an integral part of the Great Rift Valley and provides a globally critical land bridge between Africa, Europe, and Asia that supports a large variety of ecologically diverse habitats of international importance with millions of migrating birds visiting each year.

As stated in the project, it is also of strategic economic importance, linking the five countries of Egypt, Israel, Jordan, the West Bank, and Syria, which share many of its natural resources, including the Jordan River, Dead Sea, and Gulf of Aqaba. Its critical geographical location, combined with the most productive agricultural land resources in Jordan, has made it a focal area for development and land conversion that threatens its unique ecological and cultural values.

The seven areas selected for the project were chosen considering: a) coverage and diversification of the major ecological zones in the JRV, b) coverage of the four selected Protected Areas and Important Bird Areas and their adjacent land areas, c) ecosystem connectivity (i.e. ensuring that a conservation corridor is ensured along the JRV), d) presence of globally significant biodiversity assets and vulnerability of local ecosystems, and e) coverage of areas with observed unsustainable development (specifically in the area of agriculture or tourism) putting the biodiversity conservation in the adjacent proposed protected areas at stake.

The project's goal to secure the ecological integrity of the Jordan Rift Valley as a globally important corridor is clearly of worldwide importance. Seeking ways to ensure the Valley's economic and ecological integrity for the benefit of its people also seems of great importance to improve the conservation of this fragile habitat that harbors more than 20 globally significant species, including threatened migratory birds, rare plants and fish, and threatened mammals. In addition, the creation of the four proposed areas will add currently unprotected habitat types to Jordan's Protected Area Network.

3. Compliance with GEF objectives, operational strategies and guidance in biodiversity focal areas

The proposed project coincides with the GEF Operational Strategy Objectives relating to the conservation and sustainable use of biological diversity, resources under threat and endemic species for the following important reasons:

- It strengthens the participation of local communities, particularly women, in the conservation of biological diversity and its components.
- It offers a means to long-term conservation and sustainable use of biological diversity and can serve as an example for other cases in the Jordan River habitat and other places in the Middle East.
- It applies an integrated ecosystem management approach that has not yet been applied in Jordan.

The project fits under the GEF biodiversity conservation focal area and the operational programs N° 1 *Arid and Semi-arid Zones Ecosystems,* N° 12 *Integrated Approach to Ecosystem Management* and N° 15 *Sustainable Land Management*.

In promoting and introducing an integrated approach to environmental management, the project will contribute to the GEF strategic priorities under the biodiversity focal area, such as:

- Strategic Priority (SP) 2- *Mainstreaming biodiversity in production landscapes*, by strongly promoting Integrated Ecosystem Management.
- Strategic Priority (SP) 1- *Catalyzing the sustainability of protected areas*, by strengthening the PA system.
- Strategic Priority (SP) 4- *Generating and disseminating best practices to address biodiversity issues*, through the capacity-building program.

The Government of Jordan has prepared an Environmental Assessment (EA), consistent with the requirements of OP 4.01 and an Environmental Management Plan (EMP) was prepared as part of the EA. All activities are designed to improve the ecosystem and socio-economic conditions. Potential adverse environmental or social impacts will be minor and can be avoided or minimized through appropriate preventive actions and mitigation measures. The proponents envision that some of the interventions and activities to be carried out under the alternative livelihood and income generation component could potentially have a negative impact on the environment. Nevertheless, they are prepared to review these potential setbacks prior to implementation in order to take measures to mitigate them.

The project will advance the commitment of the GOJ to a number of international conventions that have already been signed and ratified, notably the Convention on Biological Diversity (CBD); the Convention to Combat Desertification (CCD) and the Framework Convention on Climate Change (FCCC).

4. Significance and potential benefits of the project

The project's significance and potential benefits can be clearly identified at both the environmental and social levels.

The proposed project is aimed at conserving fragile ecosystems in an area that has great environmental and economic significance for five countries in the Middle East and Africa. This will contribute to strengthen the limited national efforts that have been carried out thus far to introduce, regulate, and institutionalize integrated ecosystem management. In addition, it will help integrate conservation and rural development activities.

The social benefits have also been identified. The capacity building component, which is clearly developed, is of great importance since it will serve to strengthen institutions in charge of conservation in Jordan, while at the same time it will focus on obtaining the involvement of communities and local stakeholders in ecosystem management and land use planning through a well-planned awareness-raising program.

As stated by the proponents, the project has crosscutting social benefits as it contributes to the ecological integrity and socio-economic development in Jordan River Valley as a regional effort. The primary beneficiaries of the project will be the communities living in and around the seven pilot areas. Marginalized groups, including women, herders and other underprivileged groups will be actively targeted to ensure that they receive their share of benefits from project activities and are able to effectively participate in decisions regarding land use planning in general and the development of their

community in particular. In accordance, the training and capacity building activities of the project will include participatory techniques and gender sensitization as topics in the training program.

5. Potential replicability of the project to other sites

The project considers replicability as an integral part of the implementation strategy, which is based on the process of learning by doing and focuses on the dissemination and expansion of positive experiences in integrated ecosystem management and alternative livelihoods. This is the first major project in Jordan focusing on Integrated Ecosystem Management. The project design is based on lessons learned from experiences gained in other community-driven protected area and natural resource management projects, particularly the Dana Nature Reserve (DNR) project.

It also states that positive examples of interventions and livelihood alternatives will be duplicated through an extension and awareness-raising program.

Furthermore, it acknowledges that it provides the opportunity for an exchange of ideas and cross-fertilization with other GEF projects, thus giving the possibility for the creation of an integrated ecosystem management network, including surrounding countries and regions.

6. Sustainability of the project in institutional, financial and technical terms

The proposed project is satisfactory in its considerations to ensure its institutional, financial and technical sustainability for the following reasons:

Institutional:

- The Government of Jordan, assisted by the World Bank and the GEF, has heavily invested in adequate institutional capacity to handle preparation and implementation of natural resources management projects during previous years.
- The project will be implemented over six years and primary coordination will be provided by the Ministry of Planning (MOP) and the Royal Society for the Conservation of Nature (RSCN), the largest non governmental environmental organization in Jordan, will be the implementing agency. RSCN has a mandate to manage and control protected areas and its enforcement power has been recently expanded to all aspects of the agricultural law. This guarantees stability to the project.
- Capacity building efforts will also contribute to the institutional sustainability of the project through training in relevant areas of all stakeholders (government agencies, NGO's and community organizations) at the national, regional and local levels.
- Adaptation of legislation and the regulatory and policy framework, in order to support integrated management and community involvement in land use planning is also crucial to this project, which includes a comprehensive review to identify and tackle bottlenecks for the inclusion of local stakeholders in the planning process.

Financial:

- The proponents have identified several sources of funding: Private sector partnerships for income generation activities (e.g. ecotourism); state budget; revenues from protected areas and entrance fees; international foundations and NGOs; national funds planned for environmental and natural resource management.
- There is already a Jordan Fund for Nature and the project will direct activities to increase the capital base of this existing fund, which is used to operate and maintain protected areas.

- A Biodiversity Enterprise grant program will be established to stimulate and support private sector entrepreneurial initiatives that generate profit and contribute to biodiversity conservation. A mechanism for revenue collection and reinvestment of income in protected areas and integrated ecosystem management activities will be developed.
- The proponents have also identified a series of current or potential partnerships to assist in financing the project: GEF Small Grant Program; Ministry of Planning Enhanced Productivity Program (IRADA) and its support to small scale enterprise development, with NGOs; IUCN, which has already signed a memorandum of technical cooperation with RSCN in 2005; the Jordanian Hashemite Fund for Human Development (JOHUD); the Ministry of Tourism and Antiquities (MOTA), that has offered RSCN to manage the Dead Sea Panorama Center under a renewable 5-year agreement; the USAID; and potential donors who are interested in substantially increasing RSCN's trust fund – Jordan fund for Nature.

Technical:

- Technical sustainability of the project will be ensured by enhanced integrated ecosystem management through appropriate land use planning that combines habitat protection and biodiversity conservation with sustainable development, through the introduction of improved agricultural practices and alternative livelihoods.
- As stated in the project, the community-based land use planning approach covers an area of land with accepted boundaries. It focuses on the production of food, fuel, fodder and construction materials from crops, trees, shrubs, forbs and grasses. It identifies opportunities and constraints in the use of protected areas and the buffer zone as well as on surrounding agricultural fields. It also pays attention to the interaction between different forms of land use in different areas.
- An agreed upon distribution of rights, concessions and obligations concerning management of hillsides and communally used lands among all interest groups involved is crucial for sustainable management.

7. Degree of involvement of relevant stakeholders in the project.

Involvement of relevant stakeholders is a strong element throughout the project, which considers a bottom up approach concerning community engagement and interventions. This project builds on the RSCN capacity building and legal and regulatory efforts initiated under the DNR, which demonstrated that communities can be successfully engaged in the land use planning approach for sustainable development.

The proposal considers a series of consultation workshops involving all relevant stakeholders to identify and agree on an appropriate institutional plan that unambiguously defines roles and responsibilities.

Local and regional land use plans, formulated in consultation with community members and accompanying capacity building and awareness raising activities, will be the project's primary vehicle to implement interventions and approaches relating to ecosystem management. The proponents stress that through participation in the planning, monitoring and evaluation of the local ecosystems, the communities will provide input to the final land use plans (LUP) and to potential legal and regulatory reforms, which will need to be undertaken.

The project will also ensure that targeted communities will be involved in identifying and implementing eligible alternative livelihood initiatives. This includes women and poor members of the community.

In order to encourage community involvement, the project will provide specific expertise through the appointment of community development specialists as project staff members. It will also establish a

Monitoring and Evaluation system that will monitor the performance of the project towards the achievements of the social development outcomes, included in the different project components, in general and in the component relating to alternative livelihoods in particular.

SECONDARY ISSUES

8. Linkages to other focal areas.

The project is also linked to the GEF Land Degradation Focal Area, particularly through its land use planning activities and its efforts to achieve alternative livelihoods for local communities surrounding the protected areas involved.

The proponents acknowledge that the task of improving the productivity of a planning area and preventing it from degradation is difficult. Different people in an area make different uses of the land and claim their own rights. Therefore, the task can only be implemented if community members work together, are willing to compromise and organize themselves, and develop and implement rules and regulations for the use of their land.

9. Role, potential and importance of capacity building elements and innovativeness of the project.

Capacity building is an important component of the project and is well articulated. The proponents state that in an effort to supports the Bank's recommendation that stand-alone project management units (PMUs) be mainstreamed into existing structures, the PMU will work closely with the RSCN to be consistent with the Bank's mission of capacity development and institutional strengthening.

At the same time, the project considers the need to train and empower local communities to take responsibility in community-based resource management and to become equitable partners in participatory planning, while government agencies and NGOs need to be trained to guide this process.

The proposal states that this will be achieved by providing RSCN with information, infrastructure and capacity building support so that this organization is equipped to implement effective PA management in new and/or expanded Protected Areas.

It also mentions that management plans will be formulated for all four proposed protected areas, based on a participatory approach, involving all the stakeholders. The establishment and management of these areas will require a significant expansion of RSCN's field-based staff: these will need to be recruited and trained, as a pool of appropriately trained specialists in the field does not exist in Jordan outside the existing Protected Areas network. In addition to that, the four new areas will require basic facilities such as offices, meeting rooms, visitor centers and staff housing, and be equipped with reliable electricity and water supplies.

The project considers carrying out a capacity and training needs assessment that will be the basis for the implementation of a training and capacity building plan. At the national level the plan will address policy development, enforcement and monitoring, land use planning for government representatives. At the local level (protected areas) it will include training for protected areas staff, local (decentralized) government officials in land use planning, and support to extension services for the promotion of more sustainable agricultural techniques. At the community level, the plan will address community development, institutional strengthening of communities, training to local communities in business development, training in alternative livelihoods, inclusive of NGOs and community organization.

10. Specific Comments:

It would be suitable for the proponents to give a few clear examples of places where the project can be replicated, ideally mentioning specific areas, or stating clear actions to be taken, such as meetings with organizations in charge of similar protected areas in other countries sharing the Jordan River Valley.

11. Final comments:

It is a very important project that I endorse in the strongest terms.

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GEF AGENCY RESPONSE TO STAP REVIEW

The World Bank is in agreement with the points made by the Reviewer. The clarifications have been made to the next steps for replicability. Recognizing the replicability of interventions is of utmost importance and forms an integrated part of the implementation strategy, based on a process of learning by doing, which focuses on the dissemination and expansion of positive experiences in the area of IEM, and alternative livelihoods. RSCN has already identified priority areas for post-project replicability based on the Jordanian National Biodiversity Strategy and Action Plan. These areas are both located within the Jordan Rift Valley, such as the Aqaba protected area, and outside the Rift Valley such as the Burqu reserve in the Eastern Desert. Other areas for post-project replicability will be determined, based on findings from the SEA and LUMP planning process, through a similar criteria-based stakeholder engagement process used in defining the GEF project sites. The SGP's funds will be used to explore and assess the replication of the protected areas based on lessons learned from the project.

Annex 17: Stakeholder Involvement Plan

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

1 Relevant institutions; their role and responsibilities

1.1 Introduction

Institutions relevant to the project can be grouped under governmental organizations, national and international non-governmental organizations (NGOs), bilateral or multilateral donor organizations, and the private sector. The first category is the most important one, in terms of "project co-ownership" and comprises ministries, specific departments in ministries, and authorities. Authorities were created to manage a particular subject (Water Authority - WA) or a particular region (Jordan Valley Authority – JVA, and Aqaba Special Economic Zone Authority – ASEZA). They have different positions in the institutional structure and either come under a ministry (WA and JVA under the Ministry of Water and Irrigation) or operate more or less independently (ASEZA).

The Royal Society for the Conservation of Nature (RSCN), as the implementing agency, is obviously the prime institution for the project. RSCN has a mandate to manage and control protected areas. It has enforcement power with regard to violations of the law. Before, this applied only for illegal hunting but, since recently, this has been expanded to all aspects of the Agricultural law. RSCN's own enforcement capacity on the ground is very limited and it leaves enforcement up to the Jordanian Police Force, with whom it has developed a good working relationship and partnership over the years.

At higher levels, RSCN's Board has influential members with a strong lobby in parliament and with good connections to the royal family. Lobbying is still done with the law at hand. Legislation has recently undergone revisions supporting the position of RSCN (such as the expanded enforcement power).

The project will add substantially to RSCN's activities and entail an important change in its position regarding general development. By engaging in Integrated Ecosystem Management and land Use Planning, RSCN is moving beyond the borders of its direct mandate area - the protected areas, and will deploy activities in areas falling under the responsibility of other institutions (forest land, agricultural land, private land etc.). It will therefore be a major challenge for the project to establish good working relationships both with land users (local communities) and land owners (private owners, line ministries and regional authorities – JVA and ASEZA) outside protected areas.

Two general observations are made on the institutional structure as a whole. Firstly, despite the fact that Jordan has signed the Convention on Biological Diversity, concerns with biodiversity conservation are not deeply vested in all institutions yet. Biodiversity conservation is the explicit goal of only one ministry (Ministry of Environment – MOEnv) and of a small number of NGOs.

Secondly, there is no institution with an explicit mandate and ability for IEM/LUP. Several institutions are, or feel, responsible for LUP or for certain aspects of it (JVA, MOA, ASEZA, DLS), but all have limited or no capacity. Those who prepared land use plans for substantial areas (JVA mandate area and ASEZ) have contracted its preparation to consultants without ensuring capacity building in the organization itself. LUP, as it has been done so far, should rather be described as land designation and is not consistent with up-to-date LUP concepts.

There are currently about a dozen agencies with some degree of responsibility or influence over land use related issues: Ministry of Environment, Ministry of Planning, Ministry of Tourism and Antiquities,

Ministry of Agriculture, Ministry of Water and Irrigation/ Jordan Valley Authority, Natural Resources Authority, Aqaba Special Economic Zone Authority, Department of Land and Surveys, Ministry of Municipal and Rural Affairs, and RSCN. Often, with so many players there is some confusion over roles and authorities and some duplication of effort.

The position of government organizations with regard to the project will be twofold. Apart from local communities, they will be the principle operational partners in establishing IEM mechanisms and promoting rural development through alternative livelihoods. In order to prepare them for this role, they will also be a main target group for capacity building.

1.2 Government institutions

Ministry of Planning and International Cooperation (MOP)

MOP's role is indispensable as it is channeling funds from international donors including GEF. MOP is also managing the budget line for another GEF-funded project implemented by RSCN (the medicinal plants project). Because of RSCN's NGO status, MOP has no say in its overall annual funding. MOP may play an important indirect role as it is responsible for general budget allocation for government agencies with whom the project will have to establish working agreements.

MOP is also carrying out programs that are contributing to small scale enterprise development (IRADA – Enhanced Productivity Program) and will be of interest for the project component on alternative livelihood development.

Jordan Valley Authority (JVA) under the Ministry of Water and Irrigation (MWI)

JVA is the most influential organization in most of the Rift Valley Project area. Its mandate area stretches throughout the Ghor areas, up to the 300 m contour line north of the Dead Sea and up to the 500 m contour line south of the Dead Sea. The four newly proposed protected areas and a number of IBAs are all situated within the JVA area (only part of Jabal Masuda).

JVA was created to take up development in the Jordan Valley, with an emphasis on irrigation development, tourism and industrial development. The strong position of JVA can, to a substantial extent, be attributed to the fact that all technical ministries are represented in its management board.

At present, when most of the irrigable areas have been developed and tourism master plans have been made and are being implemented, JVA seems to operate more as a regulatory body than as a planning organization. It controls all new development initiatives and approves on these on the basis of the Land Use Master Plan, prepared in 2004. The LUMP was prepared for the entire JVA mandate area. However, in the proposed land use map, many areas are owned by other institutions than JVA and are marked by their ownership instead of their suggested land use. The proposed protected areas are designated as such without further detail on the type of land use or management.

JVA's actual capacity/capability for comprehensive land use planning is limited; most of the preparation of the LUMP was delegated to private consultants.

JVA will not have much influence on project activities within protected areas, but will have to be one of the main partners in IEM activities in the surroundings of protected areas as well as in IBAs.

Water Authority (WA)

The tasks of JVA and the WA are not precisely delineated. Both are dealing with water resources development. JVA focuses on water to be used in the Jordan Valley, especially for irrigation, WA focuses on water for domestic (and industrial?) use. JVA's activities are not all confined to its mandate area, depending on the sources of water.

It is well appreciated that, in a water scarce country like Jordan, water is an issue in any development activity. Water development is not a core activity of the project, but the issue will not be neglected. The water issue will be dealt with mainly in the context of watershed management within the framework of local and regional IEM. In very selective cases, development of local water points might be considered as an incentive for local communities, within the framework of the components on alternative livelihood development and/or IEM.

Aqaba Special Economic Zone Authority (ASEZA)

The Aqaba Special Economic Zone Authority (ASEZA), formerly the Aqaba Regional Authority (ARA) was created in 2000 to accelerate economic development in the free zone around Aqaba town. The free zone covers part of the former Aqaba Governorate. In the free zone, ASEZA has full land ownership and development responsibility. It will be an even stronger partner to deal with in the project than JVA. A land use zoning plan was also prepared for the ASEZ.

The existing Wadi Rum Protected Area is under responsibility of ASEZA's Environment Commission. At the time of its designation, ARA delegated the management to RSCN, but since it became fully operational as one of the country's major tourist destinations, management has been returned to ASEZA. Wadi Rum, as well as two other protected areas considered, notably Aqaba Mountains and Qatar proposed protected area, are outside ASEZ but inside Aqaba Governorate. This shows that ASEZA is also concerned with development outside the special zone, as long as this is economically rewarding.

The northern part of Aqaba Governorate, where also the Qatar proposed protected area is located, lies outside ASEZ, but still falls under ASEZA's planning responsibility. It is also confined within JVA's mandate area. Project activities here will require the approval and cooperation of both authorities.

The ASEZA Law includes articles to protect environment, water resources, natural resources and biodiversity, and an Environment Protection Regulation. However, it deals mainly with industrial waste and pollution and protection of the marine reserve. The Environment Protection Regulation implies the obligation of Environmental Impact Assessment (EIA), but only in relation to harbour and industrial development and to investments in animal husbandry farms (including fish farms).

Ministry of Environment (MOEnv)

The Ministry of Environment (MOEnv) was created only recently, in 2003, and is still very much in the process of institutional development and internal capacity building, and of preparation of its legislation. Among the government organizations, the objectives of MOEnv are nearest to those of RSCN. However, from the government side, MOEnv is more responsible for environmental protection as a whole, including nature conservation. In practice, both are working together in several fields and have a mutual interest in a good performance of the other. RSCN is assisting MOEnv in environmental legislation (for example regulation on protected area designation) based on more profound experiences in this field. The Ministry of Environment delegated the RSCN to manage the natural reserve under the supervision of the Ministry through a memorandum of understanding (MoU). Through this MoU both have to work on preparing management plans for the natural reserves. Also, based on this MoU both have to cooperate together in

issues related to biodiversity conservation such as international conventions. In addition to that the MOEnv is responsible of declaring new natural reserves based on the law. MOEnv, on its turn, has a stronger lobbying power for common interests of MOEnv and RSCN at the government level.

Ministry of Tourism & Antiquities (MOTA)

Intensive working relationships will be required with the Ministry of Tourism & Antiquities (MOTA). Firstly, a substantial part of tourism development is taking place in ecologically vulnerable areas, notably the escarpment areas east of the Jordan valley. These include small scale development (Wadi Ibn Hamad hot springs) but also larger projects (Zarqa Main Spa and Dead Sea Parkway project). Such projects have local impacts but may also affect biodiversity in larger areas including the proposed protected areas. They have been the reason for identifying a component of regional IEM activities in order to achieve conservation based development. In addition to this, MOTA ad RSCN are both engaging in ecotourism and RSCN, having more experience, has already received requests from MOTA for assistance in this field.

Secondly, many of the existing protected areas include cultural and archaeological sites within their boundaries, and this is both an extra responsibility and opportunity for RSCN. RSCN has been mildly criticized in de recent past for not paying enough attention to this part of the country's heritage, and it has taken this to heart. At least three of the four proposed protected areas include important historic and /or archaeological sites within their boundaries or immediately adjacent. As part of the baseline input to establishing the four new reserves, a detailed inventory is to be made of archaeological, historic and cultural sites at each location. This requires cooperation with the Ministry of Tourism and Antiquities and various universities. Archaeological, cultural and historic sites have particular management requirements that are at present not a part of RSCN's *modus operandi*, but should become so given the importance of this heritage found in some of the reserves.

Ministry of Agriculture (MOA)

Cooperation with the Ministry of Agriculture (MOA) will be required in several cases, through different departments. Local and regional level IEM/LUP activities around protected areas will concern the Departments of Forestry, Rangelands and Agricultural production. IEM activities in relation to IBAs in cropping areas, where promotion of integrated pest management and biological farming is suggested, require the cooperation with the Plant Protection Section, the Extension Department and the National Centre for Agricultural Research and Technology Transfer (NCARTT).

The Provisional Law of Agriculture No. (44) for 2002, describes the responsibility for achieving the objective of "sustainable use of the natural agricultural resources without harming the environment", and for "combating desertification and conserve biodiversity" (Article 3). The Agricultural Law focuses on plant production and protection and on animal production and health, and also includes a number of articles concerning forests/ forest lands and rangelands and fishery. The issue of land use planning is not addressed in the law. MOA is one of the institutions where capacity building in IEM/LUP is needed most.

Desertification control and biodiversity conservation are vested implicitly in the law, notably in the sincere efforts to protect forests and range. Biodiversity is given explicit attention in articles on protection of wild birds and wild animals in the Law of Agriculture. Directives to organize protection, hunting, trading of wild birds and animals are yet to be issued. No reference to, or linkage with, environmental laws is made.

Ministry of Municipal Affairs (MOMA)

The Ministry of Municipal Affairs (MOMA) may play a role through municipalities as a focal point for local level IEM/LUP and alternative livelihood development.

Recent ideas seem to exist to undertake a national LUP exercise, similar to the JVA LUMP. On request of the Ministry of Municipalities and Rural Affairs, the RSCN has submitted suggestions for including "strategic sites for wildlife conservation" in the Rift Valley for consideration. According to JVA, this national plan is in a preparation stage (situation June 2005).

Department of Land and Surveys (DLS), Ministry of Interior

The Department of Land and Surveys (DLS) is responsible for land management and registration. They may be an important resource partner in the sense of being the one who is best informed on land ownership.

Natural Resources Authority (NRA)

The Natural Resources Authority (NRA) is responsible for mineral exploration. In its latest map (2005) of potential mining areas, sites are depicted both inside and outside protected areas. There is already a history of a disputed mining site in Dana Reserve, which could be stopped with great difficulty.

Environmental impact assessment of mining outside protected areas is the responsibility of MOEnv, but the project could play a role in it through its IEM component.

Jordan Army Forces (JAF)

The Jordan Army Forces (JAF) is a more important partner than one may think at first sight. Two proposed protected areas (Qatar and Fifa) and several IBAs are fully or partly located within the security zone along the western and northern border. Access to these areas is highly restricted, which provides protection by itself. However, patrolling or military movements through the areas is also not always biodiversity friendly.

JAF has expressed its willingness to allow access to the areas for ecological surveys and other project activities and has requested training of its staff to better respect the national interest of biodiversity conservation.

Jordanian Police Force

The Jordanian Police Force assists RSCN in law enforcement. Policemen follow a number of training courses and are provided with booklets explaining wildlife regulations. This enables them to identify species protected by Jordanian law or by international conventions (esp. CITES). RSCN also produces other awareness material including posters, and holds an annual workshop for the police force. Within the police, force liaison officers have been appointed with whom RSCN is to work in first instance, but in most areas RSCN is already well known and at local level working relationships have long been established. If an incidence of poaching is identified by an RSCN ranger, he will report this to the police liaison officer, who will apprehend the person(s) in question, who are then prosecuted according to the criminal code. This works well, and the only down side is that the police force on the whole does not work pro-actively, i.e. because of other priorities or because of cultural reasons they do not pursue cases they happen on themselves, but only work in response to RSCN's beckoning, when it comes to enforcing laws related to wildlife and conservation.

Royal Scientific Society and Universities

The Royal Scientific Society and Universities would play a role in providing highly specialized, but so far unspecified, information.

Geographic Centre

The Geographic Centre is the traditional source for topographic maps and some thematic maps. Topographic maps are available in English and Arabic but their updating is rather delayed. Cartographic information is also more and more available through the private sector.

1.3 Non Governmental Organizations

The most important NGO for the project will be IUCN with its experience in nature conservation and protected area management. The role of other NGOs in this field (FOEME) is limited to exchange of information and joint lobbying, although RSCN is also acting as the Jordanian partner for international NGOs (Birdlife International). A few NGOs are interesting as a source of information (JSSD).

Local NGOs and village cooperatives should be considered as important partners in the project components of local level IEM and alternative livelihood development.

World Conservation Union (IUCN

The World Conservation Union (IUCN) is the principle international NGO in the field of nature conservation and protected area management and active in the Middle East. Activities in the region have intensified after the creation of a regional IUCN office for West Asia, Central Asia and North Africa (IUCN-WESCANA) in Amman. RSCN has recently signed a cooperation agreement with IUCN. IUCN functions as a kind of network of which both the Jordanian Government and RSCN are members. The strong asset of IUCN is its worldwide easily accessible network of highly specialized resource persons and its elaborate documentation on protected areas which would both be accessible for the project.

Birdlife International

Birdlife International is another international NGO with a regional office in Amman. RSCN is participating in a GEF funded Soaring Birds project of Birdlife International.

Friends of the Earth – Middle East (FOEME)

The Friends of the Earth – Middle East (formerly called EcoPeace) is a regional environmental NGO with offices in Amman Bethlehem and Tel Aviv. It tries to promote integrated regional approaches to environmental issues. In March 2005 the organization published “Crossing the Jordan”, a concept document to rehabilitate, promote prosperity and help bring peace to the Lower Jordan Rift Valley, that is of interest in relation to this project.

Jordan Association for Environment Conservation

The Jordan Association for Environment Conservation is concerned with environmental awareness raising in Jordan.

Jordan River Foundation (JRF)

The Jordan River Foundation (JRF) is working at the local level with deprived communities, in small housing rehabilitation projects and alternative livelihood development.

Jordan Society for Sustainable Development (JSSD)

The Jordan Society for Sustainable Development (JSSD) is in the process of completing a landscape ecology project in Wadi Araba (in an area of 70 km long between Aqaba airport and the village of Risha) which should result in an ecological sensitivity mapping of the area. The findings of JSSD are very relevant for the Qatar proposed protected area.

1.4 Donor agencies

The role of donor agencies is obvious. Knowledge of the "donor world" is important because of the requirement of co-financing. A long list of potentially interested donors for co-financing has been compiled and most of them have been contacted. Contacts have to be followed up by RSCN.
One of the recent developments is the positive interest in co-financing as expressed by the representative of the GEF Small Grants Programme, which is implemented on behalf of the three implementing agencies of the GEF – UNDP, World Bank and UNEP. Co-financing up to an amount of US$ 3 million is likely to materialize (see chapter 2 below)

1.5 Private Sector

The private sector will play a different role at different levels. The private sector will play a modest role in direct support to the project, mainly in the form of supply of services, such as compilation of cartographic data. At the local level, the private sector is the target group in the sense of promotion of alternative livelihoods.

At higher levels, development initiatives taken by private investors (infrastructure, industry, tourism facilities) will not be biodiversity-friendly on forehand and these may need to undergo environmental impact assessment.

2 Stakeholder involvement

The project will seek active involvement of different categories of stakeholders as much as possible, because of the simple reason that this involvement is indispensable for sustainability of project achievements.

Local communities are the primary target group in achieving conservation-friendly land use in and around protected areas (local level IEM – Project Component 1). Their participation needs to be based on a sense of project ownership and real commitment, the latter being achieved only by short term tangible benefits:

- compensation for reduced access to the resource base they used to depend on in newly designated protected areas, either in the form of increased resource productivity elsewhere or of creation of alternative livelihoods,
- linkage of conservation-friendly land use with increased productivity and/or profitability.

Therefore, local communities are also the prime target group for alternative livelihood development (Project Component 2) and need to play a role in participatory designation of protected areas and establishment of protected area management plans (as basic steps of the Project Area Management –

Project Component 3). In order to become equitable project partners, they deserve to be one of the target groups for community organization and capacity building – Project Component 5.

Local communities will be contacted on individual basis or through their representatives, notably family heads, clan heads, village heads, local level associations and cooperatives. Local NGOs working already with these communities will play an important intermediary role.

Local communities play also a key role in the GEF Small Grants Programme (GEF-SGP). This programme which started in 1992 builds on the principle that global environmental problems can best be addressed by local communities who are involved in resolving them and while doing so generate benefits for the whole community. The programme provides grants up to US$ 50,000 and other support to Community Based Organization (CBOs) and Non Government Organizations (NGOs) for activities that relate to the GEF areas of concern. So far, the GEF SGP has been very successful in Jordan and has supported more than 100 projects of which more than 50% address issues related to biodiversity. RSCN is already closely involved in the implementation and management of the Jordan country programme.

Government agencies are indispensable in the project being the largest owner of land and resources around protected areas and having the responsibility of promoting, supporting and controlling development at various levels. Government agencies will be the most important implementation partners: they will take most of the positions in the Project Steering Committee, provide *ad hoc* specialised technical assistance whenever needed, and nominate key staff for the project's Task Forces to jointly address local and regional IEM issues. In addition, partnerships will be sought within the framework of the project with relevant ongoing government programs, e.g. the MOP financed IRADA program for small enterprise development. Government partnerships will be financed through committed GOJ contribution of 2.55 million US $.

As LUP capability is limited in responsible agencies, IEM is a rather new concept in Jordan and substantial policy and legislation reform to this regard will be required, government agencies will also be one of the important target groups for capacity building – Project Component 5.

NGOs will be contacted

- for joint fund-raising,
- for their intermediary role with local communities,
- as partners for knowledge sharing on ecological issues (e.g. JSSD, Birdlife International).

The special role of IUCN one of the largest international NGOs active in Jordan, is vested in the recent agreement of cooperation with RSCN. Involvement of IUCN would not be limited to their position in the Steering Committee and access to their documentation. Their role could be much more active and include assistance in staff recruitment (for the Advisory Team and the Core Technical Team), and joint fund raising for co-financing. There is for example the option for RSCN, through its agreement with IUCN, to profit from the already established cooperation between IUCN and the Jordanian Hashemite Fund for Human Development – JOHUD. JOHUD is active in community development with special expertise in PRA, Community Action Plans, local level training, and has a large network of about 60 community development centers spread over Jordan, 10 of which being located in the Jordan Rift Valley.

Involvement with the private sector will be sought pro-actively particularly for forms of co-financing:

- management contracts of eco-tourism facilities,
- investors in medium-scale enterprises for creation of alternative livelihoods.

Special Program with the Jordan Army

The proposed Nature Reserves at Yarmouk, Fifa and Qatar include lands that are adjacent to the Jordan National Border. There are also proposals that Masuda would include the provisional area already identified by RSCN and than extend to the national border. A similar proposal has been made for Dana Nature Reserve.

In all cases therefore the Ministry of Defense has to be involved in the management planning and project activities if the project is to be successful. We propose to involve them in four basic ways.

- Participation in the Steering Committee;
- Provision of Security Clearance and field security to the project team now, in the preparatory/approval phase and during the full project;
- Participation in the Management of each area (including special training for Defense Forces members; and
- Provision of Special Enforcement Teams for poaching control and other regulations.

The last two measures will require the negotiation of a special agreement with the Ministry of Defense and the inclusion of special components and resources in the Capacity Development component of the full GEF project. We are aware that the Ministry already has a successful special arrangement with respect to security provisions for the King Abdullah Canal in the Jordan River Valley so the precedent has been set for interagency co-operation.

Annex 18: GEF Tracking Tool

Jordan: Integrated Ecosystem Management in the Jordan Rift Valley

Introduction

1. *Rationale.* Until now, individual projects have focused on building capacity and management effectiveness within the context of individual protected areas, with limited attention to the long-term capacity and policy maturity that underpins the sustainability of protected area systems. Therefore, a shift has been proposed towards a more comprehensive approach based on support for achieving sustainability of PA systems. The GEF tracking tools will contribute in this respect. To minimize redundancy, this annex includes elements of SP 1 tracking tool for protected areas and elements from the SP 2 tracking tool for mainstreaming.

2. *Expected impact*. Improved management effectiveness of national protected area systems and individual protected areas will be sustained through direct support over the long-term.

3. *Modalities for tracking*. This tracking tool has modality to track "targets" the coverage and "performance indicators" to reflect the impact.

- This tracking tool will be applied to all relevant projects approved under GEF-3 at work program inclusion, project mid-term and at project completion.
- The information from each project will be aggregated for portfolio-level analysis.
- The progress towards meeting the targets and performance indicators will be published annually.

Section I: Project General Information (required for both SP1 & SP2)

1. Project Name: Integrated Ecosystem Management in the Jordan Rift Valley

2. Project Type: FSP

3. Project ID (GEFSEC) 1214

4. Project ID (IA) P075535

5. Implementing Agency World Bank

6. Country(ies) Jordan

7. Name of reviewers completing tracking tool and completion dates:

Tracking Effort	Name	Title	Agency
Work Program Inclusion	Mohammed Yousef, Project Director	Director of the Conservation Division	RSCN Royal Society for the Conservation of Nature P.O. Box 1215, Amman 11941, Jordan
Project Mid-term	Mohammed Yousef, Project Director	Director of the Conservation Division	RSCN Royal Society for the Conservation of Nature P.O. Box 1215, Amman 11941, Jordan

Final Evaluation/project completion	Mohammed Yousef, Project Director	Project Director Director of the Conservation Division	RSCN Royal Society for the Conservation of Nature P.O. Box 1215, Amman 11941, Jordan

8. Project duration:Planned_6_ years Actual __*TBD at completion*_____ years

9. a) GEF Agency: □ UNDP □ UNEP **[X]** World Bank □ ADB
□ AfDB □ IADB □ EBRD □ FAO □IFAD
□ UNIDO

9. b) Lead Project Executing Agency (ies):
Royal Society for the Conservation of Nature (RSCN)

10. GEF Operational Program:

[**X**] drylands (OP 1)
□ coastal, marine, freshwater (OP 2)
□ forests (OP 3)
□ mountains (OP 4)
□ agro-biodiversity (OP 13)
[**X**] integrated ecosystem management (OP 12)
[**X**] sustainable land management (OP 15)
□ Other Operational Program not listed above:_N/A_

11. Production sectors and/or ecosystem services directly targeted by project (required for SP 2):

11. a) Please identify the main production sectors involved in the project. Please put "P" for sectors that are primarily and directly targeted by the project, and "S" for those that are secondary or incidentally affected by the project.

Agriculture __P_____
Fisheries __N/A_____
Forestry __S_____
Tourism __S_____
Mining __N/A____
Oil __N/A___
Transportation _N/A__
Other (please specify)_N/A_

11. b) For projects that are targeting the conservation or sustainable use of ecosystems goods and services, please specify the goods or services that are being targeted, for example, water, genetic resources, recreational, etc

1. _eco-tourism
2. _____

12. a) What is the extent (in hectares) of the landscape or seascape where the project will directly or indirectly contribute to biodiversity conservation or sustainable use of its components? (Required for both SP1 & SP 2):

Targets and Timeframe Project Coverage	Foreseen at project start	Achievement at Mid-term Evaluation of Project	Achievement at Final Evaluation of Project
Landscape/seascape[12] area directly[13] covered by the project (ha)	56,950 hectares	10,950 hectares	56,950 hectares
Landscape/seascape area indirectly[14] covered by the project (ha)	-	-	-

Explanation for indirect coverage numbers:
N/A

12. b) Are there Protected Areas within the landscape/seascape covered by the project? If so, names these PAs, their IUCN or national PA category, and their extent in hectares (required for both SP1 & SP 2).

Name of Protected Area	Is this a new protected area? Please answer yes or no.	Area in Hectares	Global designation or priority lists[15]	Local Designation of Protected Area[16]	IUCN Category for each Protected Area[17]					
					I	II	III	IV	V	VI
1. Yarmouk	Yes	3,000	N/A	N/A		X				
2. Qatar	Yes	5,250	N/A	N/A		X				
3. Fifa	Yes	2,700	N/A	N/A		X				
4. Jebel Mas'uda	Yes	46,000	N/A	N/A		X				
Total		**56,950 hectares**								

[12] For projects working in seascapes (large marine ecosystems, fisheries etc.) please provide coverage figures and include explanatory text as necessary if reporting in hectares is not applicable or feasible.
[13] Direct coverage refers to the area that is targeted by the project's site intervention. For example, a project may be mainstreaming biodiversity into floodplain management in a pilot area of 1,000 hectares that is part of a much larger floodplain of 10,000 hectares
[14] Using the example in footnote 5 above, the same project may, for example, "indirectly" cover or influence the remaining 9,000 hectares of the floodplain through promoting learning exchanges and training at the project site as part of an awareness raising and capacity building strategy for the rest of the floodplain. Please explain the basis for extrapolation of indirect coverage when completing this part of the table
[15] Biosphere Reserve, World Heritage site, Ramsar site, WWF Global 200, etc.
[16] Indigenous reserve, private reserve, etc
[17] I. Strict Nature Reserve/Wilderness Area: managed mainly for science or wilderness protection
II. National Park: managed mainly for ecosystem protection and recreation
III. Natural Monument: managed mainly for conservation of specific natural features
IV. Habitat/Species Management Area: managed mainly for conservation through management intervention
V. Protected Landscape/Seascape: managed mainly for landscape/seascape protection and recreation
VI. Managed Resource Protected Area: managed mainly for the sustainable use of natural ecosystems

Section II: World Bank/WWF Site-Level Management Effectiveness Tracking Tool for Protected Areas (required for SP 1 and elements from SP 2 Section III)

Reporting Progress in Protected Areas: Data Sheet

Name of protected area	1. Yarmouk	
Location of protected area (country, ecoregion, and if possible map reference)	Yarmouk River proposed protected area is located in the northern most west part of Jordan along the Yarmouk River, at 32º44'N/35º44'E, within the yarmouk IBA, along the Syrian border, about 20 km north of Irbid, Irbid Governorate.	
Date of establishment (distinguish between agreed and Registered*)	Agreed	Registered
Ownership details (i.e. owner, tenure rights etc)	Government	
Management Authority	Currently none	
Size of protected area (ha)	3000 ha	
Number of staff	Permanent 0	Temporary 0
Annual budget (US$)	NA	
Designations (IUCN category, World Heritage, Ramsar etc)	NA	
Reasons for designation	NA	
Brief details of World Bank funded project or projects in PA	Not necessary for GEF-funded projects.	
Brief details of WWF funded project or projects in PA	Not necessary for GEF-funded projects.	
Brief details of other relevant projects in PA	Currently none	
List the two primary protected area objectives		
Objective 1	Yarmouk is considered of very high importance in the flyways of large numbers of migratory species, including waterfowl and raptors. Bird species of global significance are: ▪ Globally threatened species: pygmy cormorant *Phalacrocorax pygmaeus*, marbled teal *Marmaronetta angustirostris* ▪ Regionally threatened species: griffon vulture *Gyps fulvus*, honey buzzard *Pernis apivorus,* lesser spotted eagle *Aquila pomaria*, brown fish owl *Ketupa zeylonensis*, Levant sparrowhawk *Accipiter brevipes* ▪ Restricted range species: Finsch's wheatear Oenanthe finschii, Upcher's warbler Hippolais languida, sand partridge Ammoperdix heyi	
Objective 2	About 120 plant species were recorded in the site most of them are annuals. The most important species are *Quercus aegilops*, *Salix alba*, *Platanus orientalis, Amygdalus communis, Rhamnus palaestina, Ferula communis, Orchis papilionacea and Rosularia libanotica.* The *Quercus aegilops* forest in the area is the largest deciduous oak forest in the region.	
List the top two most important threats to the PA (and indicate reasons why these were chosen)		
Threat 1	Unsustainable diversion of water to supply irrigation to intensive agricultural projects in the Jordan Valley is regarded a critical problem along the lower course of the river.	
Threat 2	Potential loss of forests and conversion of habitat (esp. in periphery) for agriculture and other uses.	

Name of protected area	1. Yarmouk
List top two critical management activities	
Activity 1	Agreements with local communities regarding boundary of reserve.
Activity 2	Agreements with other water users in the area, especially agricultural sector and potential exploiters of the proposed dam.

Name/s of assessor (including people consulted):

___Mohammed Yousef, Lead with site specific assessors to be defined _____

Contact details (email etc.):

___ mohammedyousef@rscn.org.jo others to be determined ___

Date assessment carried out (Day/Month/Year): __at minimum Work Program Inclusion Project Mid-term and Final Evaluation/Project completion_dates to be determined____

***** *Or formally established in the case of private protected areas*

Reporting Progress in Protected Areas: Data Sheet

Name of protected area	2. Qatar	
Location of protected area (country, ecoregion, and if possible map reference)	Qatar protected area is located in southern Jordan 32º44'N/35º44'E, north of Gulf of Aqaba within the southern perimeter of the Wadi Araba IBA	
Date of establishment (distinguish between agreed and Registered*)	Agreed	Registered
Ownership details (i.e. owner, tenure rights etc)	Government land	
Management Authority	Currently none	
Size of protected area (ha)	5,250 ha	
Number of staff	Permanent 0 Temporary 0	
Annual budget (US$)	NA	
Designations (IUCN category, World Heritage, Ramsar etc)		
Reasons for designation	NA	
Brief details of World Bank funded project or projects in PA	Not necessary for GEF-funded projects.	
Brief details of WWF funded project or projects in PA	Not necessary for GEF-funded projects.	
Brief details of other relevant projects in PA	Currently none	
List the two primary protected area objectives		
Objective 1	Protection of the mudflat vegetation dominated by *Tamarix* and Nitraria retusa shrubs which is a unique feature of the Qatar site, along with a ground cover of diminutive *Chenopodiaceae* and patches of *Juncus maritima*. The Acacia woodland to the east of the highway is widely regarded as being the most representative example of this habitat in Jordan.	
Objective 2	Protection and conservation of threatened mammal and bird species. Mammal species of global significance recorded in the area are ibex Capra nubiana (Red Data Book-1996, list 1), Dorcas gazelle *Gazella dorcas* (Red Data Book-1996, list 3 / CITES-I), wolf *Canis lupus* (Red Data Book-1994, list 1 / CITES-II), hyena *Hyaena hyaena* (CITES-II), Indian crested porcupine *Hystrix indica* (CITES-III), Cape hare *Lepus capensis*, rock hyrax *Procavia capensis*, and Rüppell's fox *Vulpes rueppellii*. In the not so distant past, leopard was also recorded in the area, but these have become extinct in Jordan. Birds of global significance recorded in the IBA are: • Globally threatened: lesser kestrel *Falco naumanni*, Houbara bustard *Chlamydotus undulata* • 1% or more of global population: white stork *Ciconia ciconia*, black stork *Ciconia nigra* • Regionally threatened: Egyptian vulture *Neophron percnopterus*, griffon vulture *Gyps fulvus* • Restricted range species: hooded wheatear *Oenanthe monarcha*, sand partridge *Ammoperdix heyi*, Arabian babbler *Turdioides squamiceps*, Tristram's grackle *Onychognathus tristramii*, Sinai rosefinch *Carpodacus synoicus*.	

Name of protected area	2. Qatar
List the top two most important threats to the PA (and indicate reasons why these were chosen)	
Threat 1	Overgrazing and wood cutting
Threat 2	Further encroachment of (date) farms and water extraction to irrigate these date farms is likely to affect the hydrology of the area and may threaten the wetland.
List top two critical management activities	
Activity 1	Agreements with local communities and Jordanian army regarding boundary of reserve.
Activity 2	Agreements with other water users in the area, especially agricultural sector (small scale farmers and date farm exploiters).

Name/s of assessor (including people consulted):

___Mohammed Yousef, Lead with site specific assessors to be defined _____

Contact details (email etc.):

___ mohammedyousef@rscn.org.jo others to be determined ___

Date assessment carried out (Day/Month/Year): __at minimum Work Program Inclusion Project Mid-term and Final Evaluation/Project completion_dates to be determined____

***** *Or formally established in the case of private protected areas*

Reporting Progress in Protected Areas: Data Sheet

Name of protected area	3. Fifa	
Location of protected area (country, ecoregion, and if possible map reference)	Fifa protected area is located south of the Dead Sea, approximately 30º56'N/35º25'E. Fifa (or Fifi) within the Fifa IBA, it lies west of Fifa village and it is centred between Wadi Al Jeib in the north and Wadi Dahel in the south.	
Date of establishment (distinguish between agreed and Registered*)	Agreed	Registered
Ownership details (i.e. owner, tenure rights etc)	Government land	
Management Authority	Currently none	
Size of protected area (ha)	2700 ha	
Number of staff	Permanent 0 Temporary 0	
Annual budget (US$)	NA	
Designations (IUCN category, World Heritage, Ramsar etc)		
Reasons for designation	NA	
Brief details of World Bank funded project or projects in PA	Not necessary for GEF-funded projects.	
Brief details of WWF funded project or projects in PA	Not necessary for GEF-funded projects.	
Brief details of other relevant projects in PA	Currently none	
List the two primary protected area objectives		
Objective 1	Conservation of important threatened plant species. These include *Epipactis veratifolia, Salvadora persica, Maurea crassifolia, Cordia sinesis, Arundo donax, Acacia tortilis, Suaeda monoica, Phoenix dactylifera, Acacia raddiana* and *Crypsis schoenoides*. The site is the only recorded locality in Jordan where the rare plant *Salvadora persica* occurs in considerable numbers, and is the only site in the country where *Crypsis schoenoides* is found.	
Objective 2	Important Bird Area Bird species of global significance are: ▪ Globally threatened species: corncrake *Crex crex,* Houbara bustard *Chlamydotis undulata* ▪ Regionally threatened species: honey buzzard *Pernis apivorus,* Levant sparrowhawk *Accipiter brevipes,* sooty falcon, *Falco concolor,* black francolin *Francolinus francolinus* ▪ Restricted range species: hooded wheatear *Oenanthe monarcha,* sand partridge *Ammoperdix heyi,* Dead Sea sparrow *Passer moabiticus,* Syrian serin *Serinus syriacus,* Arabian babbler *Turdioides squamiceps*	

Name of protected area	3. Fifa
List the top two most important threats to the PA (and indicate reasons why these were chosen)	
Threat 1	Potential expansion of agriculture into the area.
Threat 2	Unsustainable resource use as a consequence of irrigated agricultural development in adjacent areas, overgrazing and wood collection
List top two critical management activities	
Activity 1	Agreements with local communities and Jordanian army regarding boundary of reserve.
Activity 2	Agreements with local communities regarding the use of natural resources, including water, grazing rights and fuelwood.

Name/s of assessor (including people consulted):

___Mohammed Yousef, Lead with site specific assessors to be defined _____

Contact details (email etc.):

___ mohammedyousef@rscn.org.jo others to be determined ___

Date assessment carried out (Day/Month/Year): __at minimum Work Program Inclusion Project Mid-term and Final Evaluation/Project completion_dates to be determined____

***** *Or formally established in the case of private protected areas*

Reporting Progress in Protected Areas: Data Sheet

Name of protected area	4. Jebel Mas'uda	
Location of protected area (country, ecoregion, and if possible map reference)	Jebel Mas'uda proposed protected area is locted The proposed site is located in the southern part of Jordan, in Ma'an Governorate, at approximately 30°10'E/35°20'N, and lies just northeast of the Wadi Araba IBA.	
Date of establishment (distinguish between agreed and Registered*)	Agreed	Registered
Ownership details (i.e. owner, tenure rights etc)	Government land	
Management Authority	Currently none	
Size of protected area (ha)	46,000 ha	
Number of staff	Permanent	Temporary
Annual budget (US$)	NA	
Designations (IUCN category, World Heritage, Ramsar etc)		
Reasons for designation	NA	
Brief details of World Bank funded project or projects in PA	Not necessary for GEF-funded projects.	
Brief details of WWF funded project or projects in PA	Not necessary for GEF-funded projects.	
Brief details of other relevant projects in PA	Currently none	
List the two primary protected area objectives		
Objective 1	Protect the Juniperus patches in the area are among the last remaining examples of this habitat in the region.	
Objective 2	Protect mammal and bird species	
List the top two most important threats to the PA (and indicate reasons why these were chosen)		
Threat 1	Overgrazing and wood cutting	
Threat 2	Incremental development of tourism facilities	
List top two critical management activities		
Activity 1	Agreements with local communities and other stakeholders regarding boundary of reserve.	
Activity 2	Agreements with local communities regarding the use of natural resources, including grazing rights and fuelwood, and with tourism industry regarding access.	

Name/s of assessor (including people consulted):

___Mohammed Yousef, Lead with site specific assessors to be defined _____

Contact details (email etc.):

___ mohammedyousef@rscn.org.jo ; others to be determined __ _____

Date assessment carried out (Day/Month/Year): __at minimum Work Program Inclusion Project Mid-term and Final Evaluation/Project completion_dates to be determined____

***** *Or formally established in the case of private protected areas*

Issue	Criteria	Score	Comments	Next steps
1. Legal status Does the protected area have legal status? *Context*	The protected area is not Registered	0		
	The government has agreed that the protected area should be Registered but the process has not yet begun	1		
	The protected area is in the process of being registered but the process is still incomplete	**2**	Government has taken initiatives, but formal gazettal procedure has yet to be finalized for proposed sites.	RSCN to closely follow and facilitate this process
	The protected area has been legally registered (or in the case of private reserves is owned by a trust or similar)	3	Existing PAs have been legally Registered.	
2. Protected area regulations Are inappropriate land uses and activities (e.g. poaching) controlled? *Context*	There are no mechanisms for controlling inappropriate land use and activities in the protected area	0		
	Mechanisms for controlling inappropriate land use and activities in the protected area exist but there are major problems in implementing them effectively	1		
	Mechanisms for controlling inappropriate land use and activities in the protected area exist but there are some problems in effectively implementing them	**2**	Some grazing, collecting and felling occurs in PAs; effective enforcement of regulations not always possible.	- Effective management implemented in 4 new PAs - Upgrading of existing enforcement
	Mechanisms for controlling inappropriate land use and activities in the protected area exist and are being effectively implemented	3		
3. Law enforcement Can staff enforce protected area rules well enough? *Context*	The staff have no effective capacity/resources to enforce protected area legislation and regulations	**0**	No staff yet in proposed new PAs	Staff recruited and trained for IEM & co-Management
	There are major deficiencies in staff capacity/resources to enforce protected area legislation and regulations (e.g. lack of skills, no patrol budget)	1		
	The staff have acceptable capacity/resources to enforce protected area legislation and regulations but some deficiencies remain	2	Staff of already Registered areas in JRV has little knowledge of IEM and co-management systems.	Training of existing PA staff in IEM and co-management
	The staff have excellent capacity/resources to enforce protected area legislation and Regulations	3		

Issue	Criteria	Score	Comments	Next steps
4. Protected area objectives Have objectives been agreed? Planning	No firm objectives have been agreed for the protected area	0	No management objectives defined as yet for proposed new PAs	Define management objectives for new PAs in management plans
	The protected area has agreed objectives, but is not managed according to these Objectives	1		
	The protected area has agreed objectives, but these are only partially implemented	2	Existing Registered PAs have agreed objectives, partially implemented.	
	The protected area has agreed objectives and is managed to meet these objectives	3		
5. Protected area design Does the protected area need enlarging, corridors etc to meet its objectives? Planning	Inadequacies in design mean achieving the protected areas major management objectives of the protected area is impossible	0	PA design has yet to be finalized for new PA new PAs	Finalizing the design with stakeholders will be carried out during the first stage of the project
	Inadequacies in design mean that achievement of major objectives are constrained to some extent	1	Mujib NR needs to be enlarged to include vital ibex habitat and lower poaching risks	Enlargement proposal to be supported by project
	Design is not significantly constraining achievement of major objectives, but could be improved	2	Design of other existing PAs in JRV does not significantly constrain achievement of major objectives	
	Reserve design features are particularly aiding achievement of major objectives of the protected area	3		
6. Protected area boundary demarcation Is the boundary known and demarcated? Context	The boundary of the protected area is not known by the management authority or local residents/neighboring land users	0	Only provisional boundaries have been defined in the newly proposed PAs have been identified	Boundaries are to be defined together with the main stakeholders
	The boundary of the protected area is known by the management authority but is not known by local residents/neighboring land users	1		
	The boundary of the protected area is known by both the management authority and local residents but is not appropriately demarcated	2	Boundaries of existing PAs are known, but generally not demarcated in their entirety	
	The boundary of the protected area is known by the management authority and local residents and is appropriately demarcated	3		
7. Management plan Is there a management plan and is it being implemented?	There is no management plan for the protected area	**0**	Management plans do not exist for newly proposal Pas	MPs are to be formulated during project implementation
	A management plan is being prepared or has been prepared but is not being implemented	1		
	An approved management plan exists but it is only being partially implemented because of funding constraints or other problems	2		

Issue	Criteria	Score	Comments	Next steps
Planning	An approved management plan exists and is being implemented	3	Approved MPs exist and are being implemented for existing PAs in JRV	
Additional points *Planning*	The planning process allows adequate opportunity for key stakeholders to influence the management plan	+1		
	There is an established schedule and process for periodic review and updating of the management plan	+1		
	The results of monitoring, research and evaluation are routinely incorporated into planning	+1		
8. Regular work plan Is there an annual work plan? *Planning/Outputs*	No regular work plan exists	**0**	Regular work plans do not exist for newly proposal PAs	Work plans are to be drafted during project implementation as part of MPs
	A regular work plan exists but activities are not monitored against the plan's targets	1		
	A regular work plan exists and actions are monitored against the plan's targets, but many activities are not completed	2		
	A regular work plan exists, actions are monitored against the plan's targets and most or all prescribed activities are completed	3	Works plans exist and are being successfully implemented for existing PAs in JRV	
9. Resource inventory Do you have enough information to manage the area?	There is little or no information available on the critical habitats, species and cultural values of the protected area	0		
	Information on the critical habitats, species and cultural values of the protected area is not sufficient to support planning and decision making	**1**	Some baseline studies have been carried out in the proposed new PAs, but data is far from complete, and insufficient for developing MPs.	Collect additional information to provide a firm baseline on status of biodiversity, critical habitats and cultural values.
Context	Information on the critical habitats, species and cultural values of the protected area is sufficient for key areas of planning/decision making but the necessary survey work is not being maintained	2		
	Information concerning on the critical habitats, species and cultural values of the protected area is sufficient to support planning and decision making and is being maintained	3	In existing PAs in the JRV, information is generally sufficient for management, and is being maintained.	

Issue	Criteria	Score	Comments	Next steps
10. Research Is there a program of management-orientated survey and research work? *Inputs*	There is no survey or research work taking place in the protected area	0		
	There is some ad hoc survey and research work	**1**	Ad hoc surveys are carried out on occasion in the proposed new PAs	Additional research to be carried out and/or promoted in the new PAs
	There is considerable survey and research work but it is not directed towards the needs of protected area management	2	There is considerable survey and research work in existing PAs, but this is not comprehensive in most cases.	
	There is a comprehensive, integrated program of survey and research work, which is relevant to management needs	3		
11. Resource management Is the protected area adequately managed (e.g. for fire, invasive species, poaching)? *Process*	Requirements for active management of critical ecosystems, species and cultural values have not been assessed	**0**	Requirements are only partially known, and are not being addressed in the newly proposed PAs	Requirements to be assessed during project, and addressed in the MPs
	Requirements for active management of critical ecosystems, species and cultural values are known but are not being addressed	1		
	Requirements for active management of critical ecosystems, species and cultural values are only being partially addressed	2	In existing PAs in JRV, requirements are only partially being addressed.	
	Requirements for active management of critical ecosystems, species and cultural values are being substantially or fully addressed	3		
12. Staff numbers Are there enough people employed to manage the protected area? Inputs	There are no staff	0	There is no staff as yet for the newly proposed PAs.	Recruitment of staff for the new PAs
	Staff numbers are inadequate for critical management activities	1		
	Staff numbers are below optimum level for critical management activities	2		
	Staff numbers are adequate for the management needs of the site	3	Staff numbers are generally adequate for the the existing PAs.	
13. Personnel management Are the staff managed well enough? Process	Problems with personnel management constrain the achievement of major management objectives	0	Not applicable for newly proposed PAs	Personnel management to be outlined in MPs of the four new PAs
	Problems with personnel management partially constrain the achievement of major management objectives	1		
	Personnel management is adequate to the achievement of major management objectives but could	2	Personnel management is generally adequate in the existing PAs of the JRV	

Issue	Criteria	Score	Comments	Next steps
	be improved			
	Personnel management is excellent and aids the achievement major management objectives	3		
14. Staff training Is there enough training for staff? Inputs/Process	Staff are untrained	0	Staff have yet to be recruited for the newly proposed PAs	Following recruitment, a training needs assessment is to follow in order to prepare a training plan
	Staff training and skills are low relative to the needs of the protected area	1		
	Staff training and skills are adequate, but could be further improved to fully achieve the objectives of management	2	Staff training and skills are generally adequate in existing PAs of the JRV, but could use further refinement	Training to improve skills, esp. in field of co-management
	Staff training and skills are in tune with the management needs of the protected area, and with anticipated future needs	3		
15. Current budget Is the current budget sufficient? *Inputs*	There is no budget for the protected area	0	No budget as yet for the newly proposed PAs	Develop sustainable financing system for all PAs in JRV
	The available budget is inadequate for basic management needs and presents a serious constraint to the capacity to manage	1		
	The available budget is acceptable, but could be further improved to fully achieve effective management	2	Budget of existing PAs in JRV is generally sufficient, but could be improved in some cases	
	The available budget is sufficient and meets the full management needs of the protected area	3		
16. Security of budget Is the budget secure? *Inputs*	There is no secure budget for the protected area and management is wholly reliant on outside or year by year funding	**0**	No budget security for not yet Registered PAs	Mechanism for sustainable financing to be developed following gazettal
	There is very little secure budget and the protected area could not function adequately without outside funding	1		
	There is a reasonably secure core budget for the protected area but many innovations and initiatives are reliant on outside funding	2	Existing PAs have a reasonably secure budget.	
	There is a secure budget for the protected area and its management needs on a multi- year cycle	3		

Issue	Criteria	Score	Comments	Next steps
17. Management of budget Is the budget managed to meet critical management needs? *Process*	Budget management is poor and significantly undermines effectiveness	**0**	Not applicable for not yet established PAs	Budget management to be incorporated into PA financial plans, as a part of the management plans
	Budget management is poor and constrains effectiveness	1		
	Budget management is adequate but could be improved	2	Budget management for existing PAs in JRV is adequate, but could be improved	
	Budget management is excellent and aids effectiveness	3		
18. Equipment Are there adequate equipment and facilities? *Process*	There are little or no equipment and facilities	**0**	None have been procured for PAs that are not yet Registered	To be procured and established for new PAs, along with some additional equipment/materials for Mujib NR
	There are some equipment and facilities but these are wholly inadequate	1		
	There are equipment and facilities, but still some major gaps that constrain management	2		
	There are adequate equipment and facilities	3	On the whole these are adequate for existing reserves	
19. Maintenance of equipment Is equipment adequately maintained? *Process*	There is little or no maintenance of equipment and facilities	**0**	Not applicable for newly proposed PAs	Management Plans are to address maintenance issues.
	There is some ad *hoc* maintenance of equipment and facilities	1		
	There is maintenance of equipment and facilities, but there are some important gaps in maintenance	2	In existing PAs in the JRV, maintenance is generally adequate, but could be improved in some areas	
	Equipment and facilities are well maintained	3		
20. Education and awareness program Is there a planned education program?	There is no education and awareness program	**0**	Not yet established in newly proposed PAs	Capacity for education and awareness raising to be developed in new reserves by means of training program.
	There is a limited and ad *hoc* education and awareness program, but no overall planning for this	1		Education & awareness to be developed as part of the MPs

Issue	Criteria	Score	Comments	Next steps
Process	There is a planned education and awareness program but there are still serious gaps	2	Operational & effective education and awareness programs exist in some reserves (Dana, Mujib, Rum), but are limited in others (Dibbeen).	
	There is a planned and effective education and awareness program fully linked to the objectives and needs of the protected area	3		
21. State and commercial neighbors Is there co-operation with adjacent land users? *Process*	There is no contact between managers and neighboring official or corporate land users	**0**	There is no contact as yet in the newly proposed PAs	Co-management is to form a core part of the management planning
	There is limited contact between managers and neighboring official or corporate land users	1		
	There is regular contact between managers and neighboring official or corporate land users, but only limited co-operation	2	In existing PAs of the JRV, there is regular contact, but limited co-operation.	
	There is regular contact between managers and neighboring official or corporate land users, and substantial co-operation on management	3		
22. Indigenous people Do indigenous and traditional peoples resident or regularly using the PA have input to management decisions? *Process*	Indigenous and traditional peoples have no input into decisions relating to the management of the protected area	**0**	There is no contact as yet in the newly proposed PAs	Co-management also to encompass indigenous and traditional peoples.
	Indigenous and traditional peoples have some input into discussions relating to management but no direct involvement in the resulting decisions	1	In existing PAs, indigenous and traditional peoples have some input into discussions, but no direct involvement in decision taking	
	Indigenous and traditional peoples directly contribute to some decisions relating to management	2		
	Indigenous and traditional peoples directly participate in making decisions relating to management	3		
23. Local communities Do local communities resident or near the protected area have input	Local communities have no input into decisions relating to the management of the protected area	**0**	There is no contact as yet in the newly proposed PAs	Co-management is to form a core part of the management planning
	Local communities have some input into discussions relating to management but no direct involvement in the resulting decisions	1		
	Local communities directly contribute to some decisions relating to management	2	In existing PAs, local communities have some input into discussions and decision taking	

Issue	Criteria	Score	Comments	Next steps
to management decisions? *Process*	Local communities directly participate in making decisions relating to management	3		
Additional points	There is open communication and trust between local stakeholders and protected area managers	+1		
Outputs	Programs to enhance local community welfare, while conserving protected area resources, are being implemented	+1	These are proposed for the new PAs.	
24. Visitor facilities	There are no visitor facilities and services	**0**	None exist in newly proposed PAs	Design and construction of visitor facilities and services, in accordance with the (to be drafted) MPs
Are visitor facilities (for tourists, pilgrims etc) good enough?	Visitor facilities and services are inappropriate for current levels of visitation or are under construction	1		
	Visitor facilities/services adequate for current levels of visitation but could be improved	2	In some existing PAs, the facilities are good/excellent (e.g. Dana, Rum), while in other areas they could be improved	
Outputs	Visitor facilities and services are excellent for current levels of visitation	3		
25. Commercial tourism	There is little or no contact between managers and tourism operators using the protected area	**0**	None exist in newly proposed PAs	Project intends to address this issue, as it will be addressed in the MPs
Do commercial tour operators contribute to protected area management?	There is contact between managers and tourism operators but this is largely confined to administrative or regulatory matters	1		
	There is limited co-operation between managers and tourism operators to enhance visitor experiences and maintain protected area values	2	In the existing PAs of the JRV, there is limited co-operation between managers and tourism operators	
Process	There is excellent co-operation between managers and tourism operators to enhance visitor experiences, protect values and resolve conflicts	3		
26. Fees	Although fees are theoretically applied, they Are not collected	**0**	Not applicable for newly proposed sites	Visitor fees to be charged once PAs are Registered
If fees (tourism, fines) are applied, do they help	The fee is collected, but it goes straight to central government and is not returned to the protected area or its environs	1		

Issue	Criteria	Score	Comments	Next steps
protected area management? *Outputs*	The fee is collected, but is disbursed to the local authority rather than the protected area	2		
	There is a fee for visiting the protected area that helps to support this and/or other protected areas	3	In existing PAs of the JRV, fees are collected from visitors, and these directly support this and other PAs	
27. Condition assessment Is the protected area being managed consistent to its objectives? *Outcomes*	Important biodiversity, ecological and cultural values are being severely degraded	0		
	Some biodiversity, ecological and cultural values are being severely degraded	**1**	In the newly proposed PAs, some values are being severely degraded.	Management Plans to prioritize threat reduction activities
	Some biodiversity, ecological and cultural values are being partially degraded but the most important values have not been significantly impacted	2	In existing PAs of the JRV, some values are being partially degraded, but the most important values have not been significantly impacted.	
	Biodiversity, ecological and cultural values are predominantly intact	3		
Additional points *Outputs*	There are active programs for restoration of degraded areas within the protected area and/or the protected area buffer zone	+1	NA	
28. Access assessment Is access/resource use sufficiently controlled? *Outcomes*	Protection systems (patrols, permits etc) are ineffective in controlling access or use of the reserve in accordance with designated objectives	**0**	None yet exist for newly proposed PAs	To be established as soon as possible once the PAs are established and staff is recruited.
	Protection systems are only partially effective in controlling access or use of the reserve in accordance with designated objectives	1		
	Protection systems are moderately effective in controlling access or use of the reserve in accordance with designated objectives	2		
	Protection systems are largely or wholly effective in controlling access or use of the reserve in accordance with designated Objectives	3	Protection systems are generally effective in most of the existing PAs in the JRV	

Issue	Criteria	Score	Comments	Next steps
29. Economic benefit assessment Is the protected area providing economic benefits to local communities?	The existence of the protected area has reduced the options for economic development of the local communities	0		
	The existence of the protected area has neither damaged nor benefited the local economy	**1**	Not applicable as the PAs have yet to be established. Effect is therefore neutral, and not negative.	Assessment of economic dependence of local community on PA, and joint development of MP
	There is some flow of economic benefits to local communities from the existence of the protected area but this is of minor significance to the regional economy	2	In existing PAs of the JRV, economic benefits are derived from the PA, but this is of minor significance to the local economy.	
Outcomes	There is a significant or major flow of economic benefits to local communities from activities in and around the protected area (e.g. employment of locals, locally operated commercial tours etc)	3		
30. Monitoring and evaluation Are management activities monitored Against performance?	There is no monitoring and evaluation in the protected area	**0**	None have yet been established in the newly proposed PAs.	A M&E plan is to be an integral part of the management plans for the new PAs
	There is some ad hoc monitoring and evaluation, but no overall strategy and/or no regular collection of results	1		
	There is an agreed and implemented monitoring and evaluation system but results are not systematically used for management	2	In the existing PAs of the JRV, an M&E system exists and is used, but the results are not always used systematically.	
Planning/Process	A good monitoring and evaluation system exists, is well implemented and used in adaptive management	3		
TOTAL SCORE		**7 related to 17 relevant questions**		

Section III: Market Transformation and Mainstreaming Biodiversity (required for SP 2)

13. a) For those projects that have identified market transformation as a project objective, please describe the project's ability to integrate biodiversity considerations into the mainstream economy by measuring the market changes to which the project contributed. The sectors and subsectors and measures of impact in the table below are illustrative examples, only. Please complete per the objectives and specifics of the project.

Name of the market that the project seeks to affect sector and sub-sector)	Unit of measure of market impact	Market condition at the start of the project	Market condition at midterm evaluation of project	Market condition at final evaluation of the project
During project implementation, as part of Component 2, Output 2.1 Community Action Plans will be developed to identify appropriate livelihood measures for income generations. This table will be completed, and updated when action plans are completed.				

13. b. Please also note which (if any) market changes were directly caused by the project.
to be determined during project implementation

Section IV. Improved Livelihoods (required for SP 2)

14. For those projects that have identified improving the livelihoods of a beneficiary population based on sustainable use /harvesting as a project objective, please list the targets identified in the logframe and record progress at the mid-term and final evaluation. An example is provided in the table below

Improved Livelihood Measure	Number of targeted beneficiaries (if known)	Please identify local or indigenous communities project is working with	Improvement Foreseen at project start	Achievement at Mid-term Evaluation of Project	Achievement at Final Evaluation of Project
Not Applicable					

Section V: Project Replication Strategy

15. a). Does the project specify budget, activities, and outputs for implementing the replication strategy? Yes_**X**_ No_ _

The RSCN will access the UNDP Small Grants Programme to replicated alternative livelihood activities after project completion.

15. b) Is the replication strategy promoting incentive measures & instruments (e.g. trust funds, payments for environmental services, certification) within and beyond project boundaries? Yes_**X**_ No___

If yes, please list the incentive measures or instruments being promoted:

a) Measures include promoting and establishing trust funds from various donor sources, user fees, for biodiversity conservation financing in piloted protected areas and future protected areas.

b) Successful measure implemented in piloted protected areas will be replicated in other priority areas.

15. c) For all projects, please complete box below. Two examples are provided.

Replication Quantification Measure (Examples: hectares of certified products, number of resource users participating in payment for environmental services programs, businesses established, etc.)	Replication Target Foreseen at project start	Achievement at Mid-term Evaluation of Project	Achievement at Final Evaluation of Project
During project implementation, as part of Component 2, Output 2.3 lessons learned from alternative livelihood demonstration projects will be documented and promoted, table will be completed when replication to this output is completed prior to final evaluation of project.			

<u>Section VI. Enabling Environment</u> (required for SP 2)

For those projects that have identified addressing policy, legislation, regulations, and their implementation as project objectives, please complete the following series of questions*:* 16a, 16b, 16c.

An example for a project that focused on the agriculture sector is provided in 16 a, b, and c.

16. a) Please complete this table at work program inclusion for each sector that is a primary or a secondary focus of the project. Please answer YES or NO to each statement under the sectors that are a focus of the project.

Sector Statement: Please answer YES or NO for each sector that is a focus of the project.	Agriculture	Fisheries	Forestry	Tourism	Other (please specify)	Other (please specify)
Biodiversity considerations are mentioned in sector policy	YES			NO		
Biodiversity considerations are mentioned in sector policy through specific legislation	NO			NO		
Regulations are in place to implement the legislation	NO			NO		
The regulations are under implementation	NO			NO		
The implementation of regulations is enforced	NO			NO		
Enforcement of regulations is monitored	NO			NO		

16. b). Please complete this table at the project mid-term for each sector that is a primary or a secondary focus of the project. Please answer YES or NO to each statement under the sectors that are a focus of the project.

Sector Statement: Please answer YES or NO for each sector that is a focus of the project.	Agriculture	Fisheries	Forestry	Tourism	Other (please specify)	Other (please specify)
Biodiversity considerations are mentioned in sector policy	TBD			TBD		
Biodiversity considerations are mentioned in sector policy through specific legislation	TBD			TBD		
Regulations are in place to implement the legislation	TBD			TBD		
The regulations are under implementation	TBD			TBD		
The implementation of regulations is enforced	TBD			TBD		
Enforcement of regulations is monitored	TBD			TBD		

16. c) Please complete this table at project closure for each sector that is a primary or a secondary focus of the project.
Please answer YES or NO to each statement under the sectors that are a focus of the project.

Sector Statement: Please answer YES or NO for each sector that is a focus of the project.	Agriculture	Fisheries	Forestry	Tourism	Other (please specify)	Other (please specify)
Biodiversity considerations are mentioned in sector policy	TBD			TBD		
Biodiversity considerations are mentioned in sector policy through specific legislation	TBD			TBD		
Regulations are in place to implement the legislation	TBD			TBD		
The regulations are under implementation	TBD			TBD		
The implementation of regulations is enforced	TBD			TBD		
Enforcement of regulations is monitored	TBD			TBD		

All projects please complete this question at the project mid-term evaluation and at the final evaluation, if relevant:

16. d) Within the scope and objectives of the project, has the private sector undertaken voluntary measures to incorporate biodiversity considerations in production? If yes, please provide brief explanation and specifically mention the sectors involved.

An *example* of this could be a mining company minimizing the impacts on biodiversity by using low-impact exploration techniques and by developing plans for restoration of biodiversity after exploration as part of the site management plan.

_____
_____
_____

Section VII. Mainstreaming biodiversity into the GEF Implementing Agencies' Programs (required for SP2)

17. At each time juncture of the project (work program inclusion, mid-term evaluation, and final evaluation), please check the box that depicts the status of mainstreaming biodiversity through the implementation of this project with on-going GEF Implementing Agencies' development assistance, sector, lending, or other technical assistance programs.

Time Frame Status of Mainstreaming	Work Program Inclusion	Mid-Term Evaluation	Final Evaluation
The project is not linked to IA development assistance, sector, lending programs, or other technical assistance programs.			
The project is indirectly linked to IAs development assistance, sector, lending programs or other technical assistance programs.	X		
The project has direct links to IAs development assistance, sector, lending programs or other technical assistance programs.			
The project is demonstrating strong and sustained complementarity with on-going planned programs.			

Section VIII. Other Impacts

18. Please briefly summarize other impacts that the project has had on mainstreaming biodiversity that have not been recorded above.

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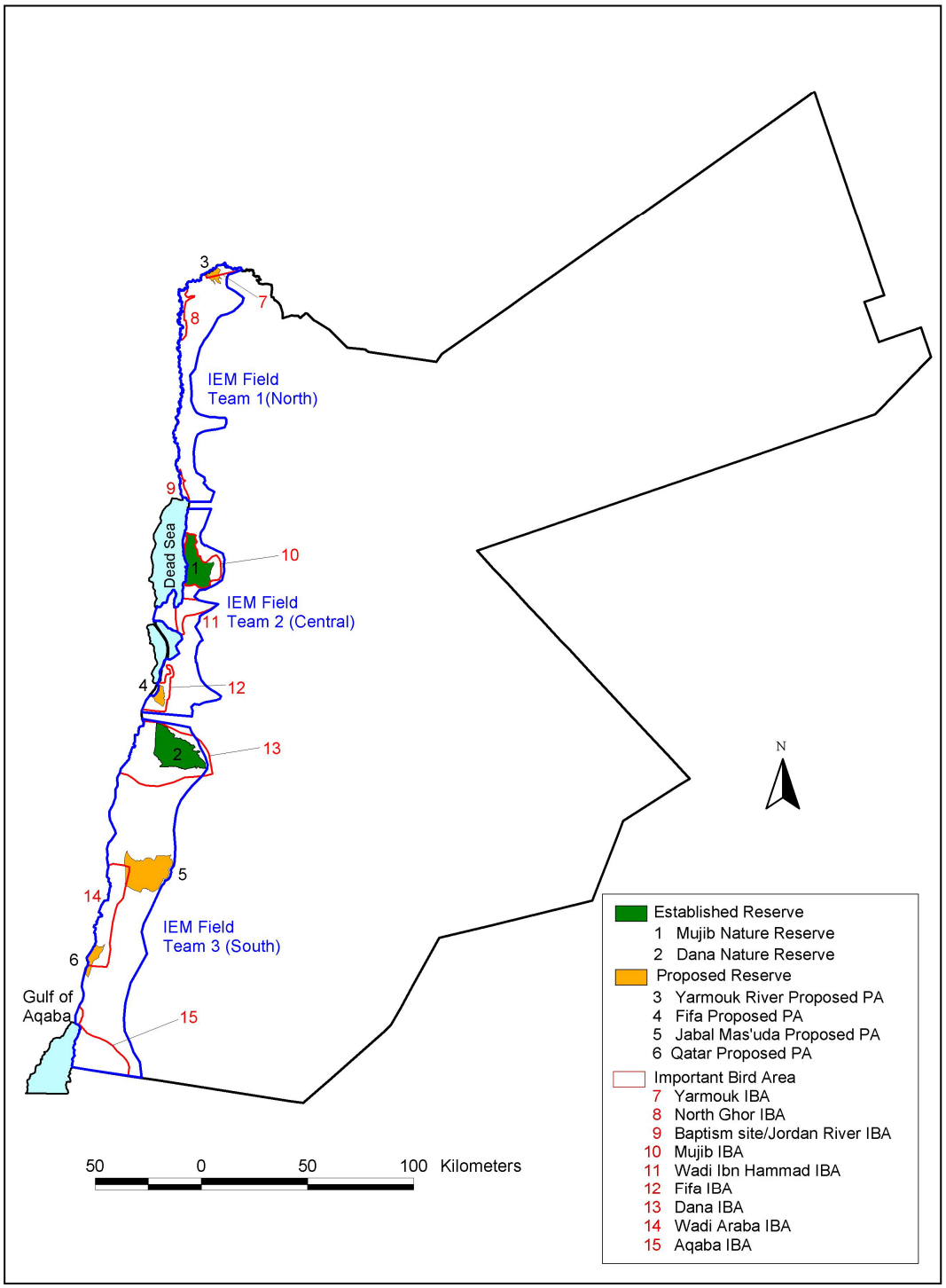
_____
_____
_____

Annex 19: Map

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)



Annex 20: Biodiversity of the Jordan Rift Valley

JORDAN: Integrated Ecosystem and Natural Resources Management (GEF)

1. Introduction

The Jordan Rift Valley is part of the Great Rift Valley, and extends from Yarmouk in the north, to the Gulf of Aqaba in the south, over a length of 370 km. The Jordan River has a basin of 18,194 km² and flows southwards for a total length of 230 km through Lebanon, Syria, Israel, West Bank and Jordan, and finally into the Dead Sea. The Jordan Valley in Jordan consists of the Northern Ghor (11,586 ha), Middle Ghor (7,875 ha) and the Southern Jordan Valley (11,500 ha). The Jordan Valley is about 10 km wide in its northern part, narrowing to 4 km in its middle section, and widening again to about 20 km in its southern part. The elevation of the Jordan River drops from 212m below sea level at Lake Tiberias, to more than 400 m below sea level at the Dead Sea.

South of the Dead Sea, the Jordan Rift Valley is drained by the Wadi Araba (or Arava), which flows in a northerly direction when in spate. This southern section is about 160 km long, and up to 25 km wide (it is at its widest between Jabal Fidan and Umm Muthla). The valley bottom is bordered by highland (or jebel) ranges that run parallel to the Jordan valley. In local geomorphological terms, these are known as the Mountain Ridges and Northern Highlands East of the Rift. These highlands are more than 50 km wide in the north, but narrow to about 10 km near Aqaba. For the purpose of the Project, the Jordan Rift Valley will be considered in its broadest sense, and includes both the valley floor (i.e. the Jordan River Valley, Wadi Araba, and its extension up to Aqaba) and the adjacent highlands parallel to the valley bottom.

The Great Rift Valley is a globally important ecological corridor and the Jordanian section represents a strategically crucial component, since it is a major tracking route between Africa and northern Europe used by millions of migrating birds each year. Systematic surveys conducted at bottleneck sites since the mid-1960s have revealed that over 1.2 million birds of prey and over 300,000 storks pass along this route each year on their annual migrations between breeding grounds in Eurasia and wintering grounds in Africa. The sharp physical boundaries of the Jordan Rift Valley, clearly visible from the air, provide a navigational guiding system for these birds and the habitats it contains provide vital resting and refueling stations, without which they are unable to complete their long journeys. Not surprisingly, Birdlife International's report on Important Bird Areas for the Middle East (Evans, 1994), lists seventeen sites for Jordan, of which ten are located in the Jordan Rift Valley.

Apart from its significance for birds, the Jordan Rift Valley also holds many large and internationally important ecosystems, including desert, mountains, wetlands, sea and forest; e.g. the Dead Sea, the Gulf of Aqaba and the Jordan and Yarmouk river systems, as well as numerous specialised habitats of regional importance such as the Yarmouk forest. To date only one wetland of international importance has been designated, in Jordan, namely the Azraq marshes in the central eastern part of the country, well outside the Rift Valley. The Directory of Wetlands of the Middle East (Scott, 1995) however, recognizes at least six natable wetland sites in the Jordan Rift Valley. Furthermore, the Dead Sea itself is the lowest and most saline water body on Earth and is noted as one of the World's "biodiversity hot spots" because its extremely harsh environment has engendered a high level of endemism.

2. History of Protected Area development in the Rift Valley

Because of the importance of the Jordan Rift Valley for conservation of globally significant biodiversity, the area has received a lot of attention from both the national and international conservation community. Although this has generated a lot of interest in protecting the biodiversity of the region, this attention has to date not resulted in the establishment of a comprehensive network of protected areas, sufficient enough for safeguarding viable populations of terrestrial wildlife, and adequate as a network of stepping stones for migratory birds. Because of pressures on land use and competition for land, protected areas are seen as a vital component, but not as a definite solution for safeguarding globally significant biodiversity, and therefore the present project focuses on both strengthening the protected areas (PA) network, and establishing integrated (sustainable) land use practices in intermediate areas. A history on the development of the PA network in Jordan is described in chapter 2, while chapters 3 and 4 provide an overview of potential PA sites and a final selection of sites based on biodiversity criteria, respectively.

1960s and 1970s. The first recorded recommendations for the establishment of a network of protected areas in Jordan were made in 1963 by a British expedition (Mountford, 1963; quoted in Clarke, 1979). For the Jordan Rift Valley, their suggestions included a 2200 km² area that included Petra and the Wadi Araba section of the Rift Valley, a small reserved area of Mediterranean-type forests near Ajlun, and a small reserve at the Zarqa Ma'in hot springs on the east bank of the Dead Sea. Little happened, however, until 1968, when Petra NP was established, but this measured only 122 km² and did not include the Rift Valley section as originally proposed. The establishment of protected areas was also hampered by the fact that legislation was not in place – a national parks law had been drafted in 1970, but this was not incorporated into national legislation. Although legislation was still pending, by 1975, two small PAs had been established in the Rift Valley by the Ministry of Tourism and Antiquities, namely Dibbeen (which coincided with Mountford's proposed Ajlun PA) and Zarqa Ma'in. Clarke (1979) regards both as not being more than small recreation or picnic sites that did not qualify for the title of National Park.

1980s and 1990s. In 1979, the IUCN/WWF report on *Development of Wildlife Conservation in Jordan II: A Proposal for Wildlife Reserves in Jordan* (Clarke, 1979) recommended the establishment of a network of PAs based on an evaluation of ecosystems and land types. In the Jordan Rift Valley they recommended the establishment of two sites: i) the Mujib Wildlife Reserve (220 km²), located from the eastern shore of the Dead Sea and including adjacent escarpment habitat; and ii) Jebel Masadi (Mas'uda) Wildlife Reserve (460 km²), which was to include Rift Valley desert habitat at Wadi Araba, along with escarpment habitat. In addition, three PAs were proposed that are located adjacent the Rift Valley, namely i) the Zubiya Wildlife Reserve (31 km²) located in the northern highland area near Irbid; ii) Dana Wildlife Reserve (100 km²), which was proposed as a western highland reserve area; and iii) Ram (Wadi Rum) Wildlife Reserve (510 km²), which was to consist of eastern desert (Hisma) habitat. All of these sites were considered to be 2nd or 3rd priority sites at the time (Clarke, 1979).

In the 1980s and 1990s, six of the twelve sites proposed in all by Clarke (1979) were formally registered: Dana Wildlife Reserve (308 km²), Ajlun (Zubiya) Woodland Reserve (12 km²), Azraq Wetland Reserve (12 km²), Shaumari Wildlife Reserve (22 km²), Mujib Wildlife Reserve (215 km²) and Wadi Rum Wildlife Reserve (540 km²). Of the five PAs proposed for the Rift Valley and adjacent areas, four had therefore been registeredregistered, and only the Jebel Masadi (Jebel Mas'uda) area had not been incorporated. However, the total area registeredregistered in the Rift Valley proper is small. Also, as indicated in an evaluation on Protected Areas Review by RSCN (undated; around 2000), many habitats are not adequately protected. Using the IUCN criterion that a minimum of 4% of each habitat/vegetation type should be included in the PA system, only

sand dunes, saline areas and open waters are adequately protected in Jordan. Other habitat types are offered some protection, except for Aleppo pine forest and deciduous oak forest, which are not included in any of the existing PAs.

3. Overview of potential PA sites in the Jordan Rift Valley

RSCN evaluation and newly proposed sites. In the 1999 Protected Areas Review, RSCN evaluated major vegetation types not represented or only poorly represented within existing PAs and produced a list of potential areas that contain significant examples of 'missing' habitat types. In addition to the areas originally proposed by Clarke (1979), six additional sites were proposed, all of which are located in the Jordan Rift Valley or immediately adjacent. These newly proposed sites were Dibbeen (Dibbin) Protected Area, Jordan River PA (a.k.a. Baptism Site or Maghtus), Qatar PA, Aqaba PA, Fifa PA and Yarmouk PA. An overview of proposed and registered reserves in the Jordan Rift Valley is provided in Table 1; their approximate location is indicated in Figure 1.1. In the meantime, Dibbeen has also been registered[18] (2005), leaving five potential sites proposed by RSCN, and a sixth site (Jebel Mas'uda) proposed by Clarke (1979).

Table 1. Existing and proposed Protected Areas in the Jordan Rift Valley

Reserve	Size (km²)	Status	Location *			Notes
			floor	part.	high -land	
Dana	308	Wildlife Reserve				wadi flows into Wadi Araba
Mujib	215	Wildlife Reserve				wadi flows into Dead Sea
Wadi Rum	540	Wildlife Reserve				registered in 1998; does not flow into Wadi Araba
Ajlun (Zubiya)	12	Woodland Reserve				located in Irbid highlands
Dibbeen (Dibbin)	7-8	Wildlife Reserve				pine forest & evergreen oak
Aqaba mts.	40	Proposed PA				tropical / Acacia
Fifa	27	Proposed PA				tropical/mudflat/ desert oasis
Jebel Mas'uda	295	Proposed PA				wadi flows into Wadi Araba
Jordan River **	4-5	Proposed PA				tropical / water
Qatar	50	Proposed PA				Acacia / mudflat
Yarmouk	30	Proposed PA				Deciduous oak / water

* "Floor" means that the PA is (largely) located in the Rift Valley bottom; "Part" means that a (small) part of the PA is located in the Rift Valley bottom; and "Highland" means that the PA is located in the adjacent highland areas outside the Jordan Valley proper. ** A.k.a Baptism Site or Maghtus.

Important wetland areas. Jordan is party to the Ramsar Convention on Wetlands of International Importance, but to date only one wetland of international importance has been designated, namely the Azraq marshes in the central-eastern part of the country, well outside the Rift Valley. The Directory of Wetlands of the Middle East (Scott, 1995) recognises at least 6 notable wetland sites in the Jordan Rift Valley (www.wetlands.org/inventory&/MiddleEastDir/JORDAN.htm). These are summarised in Table 2.

[18] This area is the focus of a separate GEF-funded project, *Conservation and sustainable use of biodiversity in Dibbeen Nature Reserve* – a medium-sized project being implemented by UNDP.

Table 2. Important wetlands in the Jordan Rift Valley

Reserve	Size (km²)	Status	Location *			Notes
			floor	part.	high -land	
Wadi Mujib	6500	Partially (215 km²) registered				Area given is catchment area of the Mujib River.
Gulf of Aqaba	?	Not proposed by RSCN.				27 km of coastline only.
Wadi El Arab	267	Not proposed by RSCN.				Not to be confused with Wadi Araba; located in the northern highlands, 10-25 km WNW of Irbid. A dam was constructed on the main wadi in 1987.
Wadi Ziglab	106	Not proposed by RSCN.				Rises in the hills SW of Irbid, draining into Jordan River. Dam constructed in 1966.
Yarmouk River	30	Proposed WR				From –210 to +300 m asl. Lush stands of common reed and *Juncus maritimus*.
Zarqa River/King Talal dam	4025	Not proposed by RSCN.				Arise in the highlands west of Amman; flow into King Talal Dam.

BirdLife International's IBAs. BirdLife International's report on Important Bird Areas (IBAs) for the Middle East (Evans, 1994), lists 17 sites for Jordan. Ten of these are located in the Jordan Rift Valley *sensu lato*, and are summarised in Table 3. Updated information is taken from BirdLife's online World Bird Database (Version 2.0. Cambridge, UK: www.birdlife.org).

Table 3. Important Bird Areas in the Jordan Rift Valley

Reserve	Size (km²)	Status	Location *			Notes
			floor	part.	high -land	
Petra area (JO014)	500	IBA; partially registered as tourism site/NP				Mountains overlooking Wadi Araba, on the western edge of the Sharrah Mountains, with dry wadis that flow into Wadi Araba.
Wadi Dana (JO013)	150	IBA; registered as 308 km² WR				Wadi flowing from Sharrah mountains at 1,200 m down to the Rift Valley floor. Bare, rounded mountains, with cliffs occur at the head of the wadi.
Wadi Mujib (JO012)	212	IBA, and registered as 215 km² WR				Mountainous, rocky, sparsely vegetated desert (up to 800 m), with cliffs, gorges and deep wadis cutting through plateaus. Perennial, spring-fed streams flow to shores of Dead Sea.
Hisma (JO016) (Wadi Rum)	2000	IBA; partially registered as 540 km² Wadi Rum WR				Mountains, ranging up to 1,754 m (Jebal Rum, separated from each other by flat, sandy 'corridor'-wadis, surrounded by desert of siltflats & mobile dunes.
Zubiya	13	IBA and registered				Hill country in the Jerash-Ajlun

Reserve	Size (km²)	Status	Location *			Notes
			floor	part.	high -land	
(JO004)		WR (12 km²) (=Ajlun NR)				mountains between 500 and 900 m with some steep slopes, dominated by a dense Mediterranean woodland of evergreen Quercus and Pistacia
Aqaba Mts. (JO017)	1300	IBA and proposed WR				IBA describes mainly the coastal section, while the proposed WR consists of highland/inland areas only.
Dibbeen (Dibbin) (JO006)	15	IBA and newly registered WR				*Pinus halepensis* forest, on limestone slopes of the highest hill range in northern Jordan, between 550 and 1,000 m.
Jordan Valley (JO005)	800	IBA(some overlap with proposed Baptism site)				Flat, open agricultural plain (below sea-level) with crop fields, market gardens and orchards, gently sloping down to the incised Jordan river in the west.
Wadi Araba (JO015)	1500	IBA; partially located in Dana WR				Desert sand dunes, gravel outwash plains & mudflats, c.160 km long by max.25 km wide.
Yarmouk (JO001)	30	IBA and proposed WR				Steep-sided valley running along the Jordan-Syrian border. Remnants of Pinus woodland on slopes. <no mention of oak>

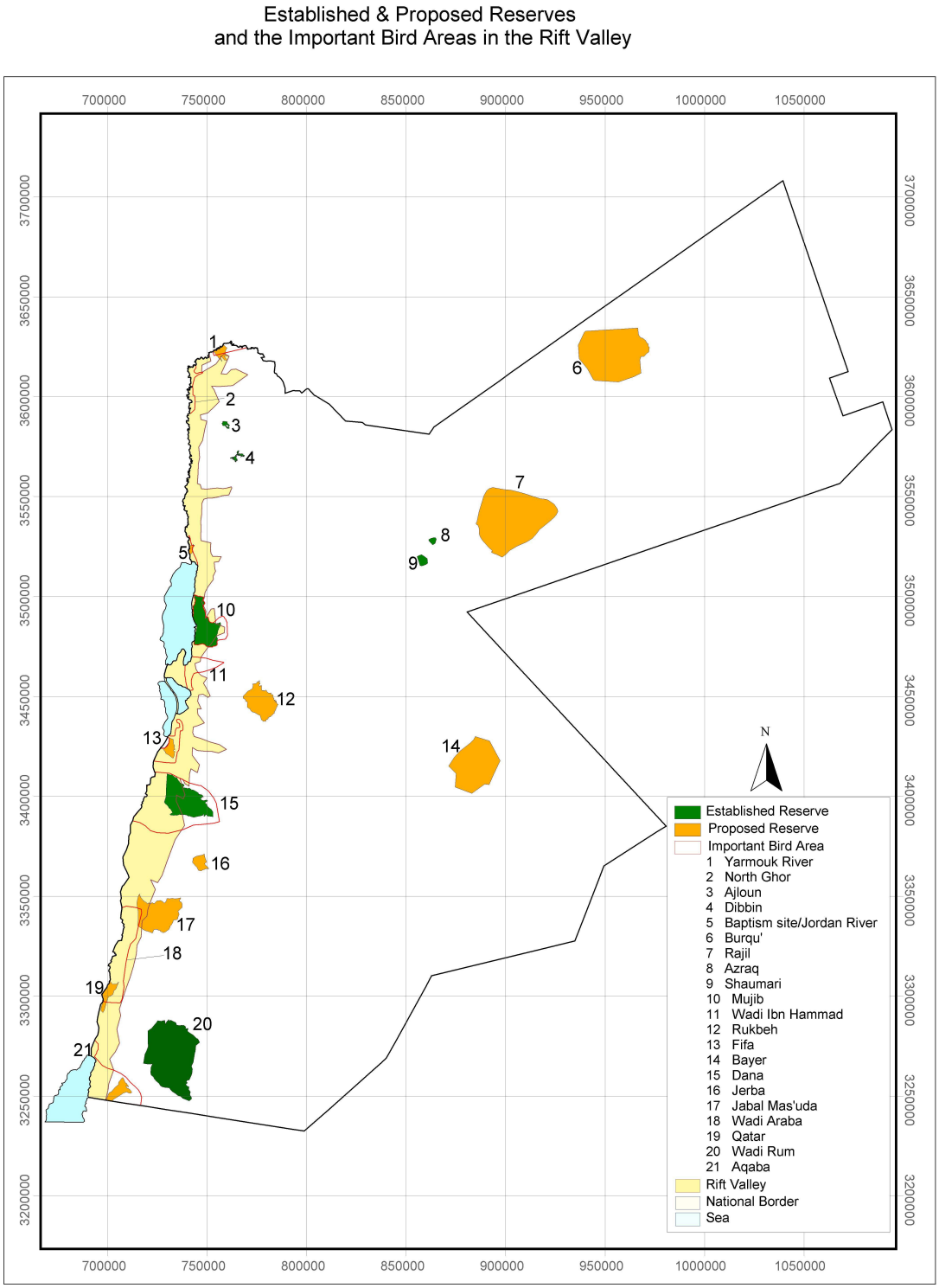
* "Floor" means that the PA is (largely) located in the Rift Valley bottom; "Part" means that a (small) part of the PA is located in the Rift Valley bottom; and "Highland" means that the PA is located in the adjacent highland areas outside the Jordan Valley proper.

Short-listed potential PA sites. The GEF Concept Document (drafted in 2000) for the present project included four proposed protected areas that are to be established under the full projects; these are: i) Yarmouk River Valley, a wooded valley in the north, which is a tributary of the Jordan River; ii) the Jordan River near the Baptism Site (Maghtus) in the central Rift area; iii) the sub-tropical palm community at Fifa, south of the Dead Sea; and iv) the mudflats near Qatar in the far south, near the Gulf of Aqaba.

Since 2000, however, there have been some changes to habitats and perceived priorities. As a starting point it was decided to reconsider all other sites previously recommended by RSCN, IUCN, BirdLife and Wetlands International along the Jordan Rift Valley. The short-list of potential sites that remain unregistered at present is:

1. Aqaba Mountains: The proposed 40 km² site is located south east of Aqaba port and consists of narrow wadi systems flowing through very steep mountains. Granite is the dominant formation in the mountains while the wadi beds are covered with gravel. The area is typical of the Sudanian-subtropical region, with a vegetation characterised by *Acacia tortilis, Acacia raddiana, Caralluma sinaica* (threatened) and *Micromeria sinaica* (threatened). Mammals found in the area include wolf *Canis lupus* (threatened) and cape hare *Lepus capensis*.
2. Fifa: This 27 km² site consist of a saline soil wadi system with perennial streams that make a unique oasis ecosystem in the Jordan Valley, and a very important spot for migratory birds. The site is the only recorded locality in Jordan where the rare plant *Salvadora persica* occurs in considerable numbers. The site – although small – is also considered the last refuge for many important animals such as *Caracal caracal*.

Figure 1. Established and proposed reserves and IBAs in the Jordan Rift Valley



3. Jebel Mas'uda: (or Masadi) recommended by Clarke (1979) and RSCN (1999). Described by Clarke as a 295 km² area of great diversity, sloping steeply through mountainous plateau and escarpment to the flat-bottomed valley of Wadi Araba. Described by Clarke as possibly being one of the few areas with viable populations of endangered large mammals. Mas'uda is located adjacent Petra National Park, the country's premier archaeological site. According to RSCN's (1999) preliminary designation of Jebel Mas'uda, this site has an area of at least 460 km². Recent reports (RSCN, 1999) indicate that the vegetation has suffered heavily because of overgrazing and cutting of trees.
4. Maghtus/Baptism site: This is a small 4-5 km² site consisting largely of natural habitat, located in an area otherwise converted to agriculture (mainly orchards). It has been proposed by RSCN (1999), and is an IBA (BirdLife; Evans, 1994). The vegetation is adapted to saline and dry conditions, and provides a habitat for important fauna (cape hare, hyena, Egyptian mongoose, wild palm).
5. Qatar: This 50 km² area is very flat and located at about 43-50m above sea level. The site represents the Acacia- subtropical vegetation and the Sudanian biogeographical zone, with an annual rainfall of only 50 mm. The Aqaba – Dead Sea road separates the site from the Aqaba Mountains. Qatar is composed of different habitats: Acacia woodland, sand dunes and mudflat. The flora includes *Acacia raddiana, Acacia tortilis, Juncus* sp., *Nitraria retusa* and the nationally threatened *Phoenix dactylifera*. Rare animals in the area include *Gazella dorcas, Caracal caracal, Capra ibex nubiana* and *Varanus griseus*.
6. Yarmouk: This 30 km² site is located on a small and continuous plateau that contains land mine fields and is protected by the army. The area has been recommended by both RSCN (1999) and BirdLife (Evans, 1994). Yarmouk consists of a steep-sided valley running along the Jordan-Syrian border. The highest part of the site is dominated by rare deciduous oak forest vegetation (*Quercus aegilops*), while the lowest part is dominated by non-forest vegetation and riparian vegetation along the river. Wildlife include *Gazella gazella, Lutra lutra* and the introduced *Myocastor coypus*. The area is a nesting site for the important Egyptian vulture that is found in significant numbers, while the rare brown fish owl *Ketupa zeylonensis* has also been recorded. The Yarmouk River is the largest freshwater stream in Jordan.

More detailed descriptions of the short-listed sites are provided in Appendices 1-6.

These seven sites are:

- Petra area, was proposed as an IBA (JO014) by BirdLife (Evans, 1994); this area is partly located in and protected by the Petra National Park (archaeological site), and partly in the already proposed Jebel Mas'uda area.
- Wadi Araba was proposed as an IBA (JO015) by BirdLife (Evans, 1994); the area has been partially protected by the gazettal of Dana Wildlife Reserve, and will be expanded if the proposed areas are registered, as both Fifa and Qatar are located in Wadi Araba.
- Hisma was proposed as an IBA (JO016) by BirdLife (Evans, 1994); this area is largely included in the already registered Wadi Rum NR.
- Wadi Ziglab, Wadi Araba (near Irbid) and Zarqa River were identified as being important wetland areas in the Directory of Wetlands of the Middle East. However, all three have had their hydrology significantly altered by dam construction and while still important wetlands, they are not suited for gazettal as protected areas. The dams themselves are managed as protected water resources.
- Gulf of Aqaba was identified in the Wetland Directory as being of importance for shorebirds. However, the entire 27 km length of coastline is earmarked by ASEZA for economic development (tourism, industry, ports, housing). Also, in January 1985, a

Marine Nature Reserve was declared to protect a 2 km stretch of coral reef south of the Marine Science Station at Aqaba.

4. Site Selection:criteria and final selection

With GEF support, RSCN, in consultation with the General Corporation for Environmental Protection[19] (GCEP) and with guidance from the World Conservation Union (IUCN) undertook a full review of the protected areas in Jordan in 1999-2000 (RSCN, 1999). The main aim of the review was to ensure that all natural habitats in Jordan are adequately represented in the PA system, as it had become obvious by the mid-1990s that this was not the case. The main objective of the review was to *propose a new list of candidate protected areas, in addition to the other already suitably proposed sites (Clarke, 1979), which reflect the findings of the review and the current criteria on which the value of protected areas are measured*. This objective was underpinned by three underlying sub-objectives, i) re-assessment of protected areas, to determine if these still represent the full spectrum of the country's natural heritage; ii) an evaluation if any important areas were neglected by the original proposed network (Clarke, 1979) and need to be added to safeguard the country's natural heritage; and iii) to determine the extent to which the sites identified previously (Clarke, 1979) but not yet designated, have been irretrievably damaged and are no longer appropriate as candidate sites.

RSCN's criteria for selecting individual sites within the broad ecosystem/habitat types were compiled from a number of sources, including IUCN guidelines (United Nations List of National Park and Protected Area, 1993) and Jordan's Draft Park Policy. A ranking system using 14 criteria was used for evaluating all proposed sites – these criteria were arranged in two groups: one group of 'determining factors' that contribute strongly to site selection (and are more heavily weighted accordingly, from 1-5), and a second group of 'non-determining factors' that contribute less to site selection and are not as strongly weighted (weighted 1-3). As a result, sites could attain a maximum score of 30 for determining factors, and 24 for non-determining factors. The criteria used by RSCN are listed in Table 4.

Table 4. RSCN's criteria for selection of potential protected areas

DETERMINING CRITERIA	NON-DETERMINING CRITERIA
Size	**Threats** *The site contains a high amount of threat that is due to human pressures.*
Habitats & diversity ***The site contains specific habitats that distinguish it from the surrounding areas and should contain enough fauna and flora species to give it a unique status.***	**Land use** *The different uses taking place in the site by the local people and different institutes that have any projects in the site.*
Naturalness ***The amount of human impact on the area.***	**Accessibility** *Easiness of the site to access.*
Rarity ***The site contains rare species and /or habitats.***	**Landscape** *The amount of intrinsic appeal (natural or special natural features).*
Fragility *The site contains sensitive species and habitats,*	**Recorded history** *The intensity of study and research in the past at the*

[19] This has since become the Jordanian Ministry of Environment

DETERMINING CRITERIA	NON-DETERMINING CRITERIA
easily affected by human impacts.	*site.*
Typicality *The site contains a large number of species and habitats that make the site typical for its ecosystem(s).*	**Educational potential** *The potential of the area to be an educational area for students and interested people in conservation.*
	Tourism potential *The potential of the area in becoming a tourist attraction area.*
	Management ease *The feasibility of the area for management.*

Note: based on RSCN (1999).

Based on this ranking system, RSCN's evaluation arrived at the following order of importance for the sites located in the Jordan Rift Valley: i) Dibbeen (now registered), 43 points; ii) Yarmouk (41), iii) Fifa (36), iv) Baptism site (34), v) Qatar (33), vi) Mas'uda (31) and Aqaba mountains (29).

The use of ranking systems is always tenuous and difficult to apply properly, as assigning values to particular criteria is very arbitrary. The system used by RSCN recognises determining and non-determining criteria, but a better terminology would have been conservation value criteria (=determining criteria) and viability score criteria (=non-determining criteria). For a GEF biodiversity project, conservation value criteria are most important, as an area must be of importance for conservation of globally significant biodiversity. The more a site contributes to this, the more valuable it becomes from the GEF point of view. Viability is important for reserve management, and also for biodiversity in the long-term, but it is not always a fixed entity as it can be manipulated by human intervention. For example, threats, land use, accessibility and management ease can all be altered by targeting an area with funded interventions aimed at making changes. Unless the viability (for managing as a conservation area) of a site is particularly low, viability should therefore probably not play a significant role in determining the choice of sites. Viability should be above a threshold, and above that threshold it is conservation value that should determine site selection.

Two criteria used by RSCN are actually on the 'wrong side of the fence', and these are 'area' and 'landscape'. The area of a site may seem to affect conservation value, but it is not the size that does it, but the fact that the larger an area, the more likely it is to include unique, rare or fragile species. Size does directly contribute to viability of an area, and should therefore be included under those criteria. Landscape value or the appreciation for a particular landscape contributes to the overall conservation value of a site.

As mentioned above, for a GEF biodiversity project it is of first and foremost importance that the protection of a particular site contributes to the protection of globally significant biodiversity. Firstly, a site may harbour globally significant species (e.g. unique, rare or endangered species), unique assemblages of species, or unique habitats. Secondly, a site may be essential for the survival of a globally significant species (e.g. breeding site of an endangered species). Thirdly, a site may be important for its cumulative importance to globally significant biodiversity: not the individual site, but a network of protected areas along may be required for the survival of globally significant biodiversity in a particular areas. The latter is particularly the case in areas where migratory species need to be protected, and creating networks of protected areas along flyways is of vital importance.

Based on the above, a revised set of selection criteria has been devised, based on conservation value and viability score (Table 5). Rarity can be replaced by a presence of globally significant species or species assemblages. A new criteria under conservation value is the contribution to the survival of a globally significant species (e.g. breeding areas for globally significant species), as this is obviously of more importance than if the species is merely found at the site. A second new criterion under conservation value would be the cumulative value of a site for globally significant species. This is determined by its geographic location (latlongs and altitude), location relative to other protected areas and relative to migration routes, and what the site has to offer in terms of feed and shelter (habitats, prey). Other criteria remain the same as with RSCN, other than landscape and size being moved to the other category. Scores for each criterion are 1-5 for Conservation value, and 1-3 for Viability score, except for size, which remains 1-5, and threats and land use, as these are deemed being more important for viability than the other criteria. Details are provided in Appendix 7.

Table 5. Selection criteria for current project

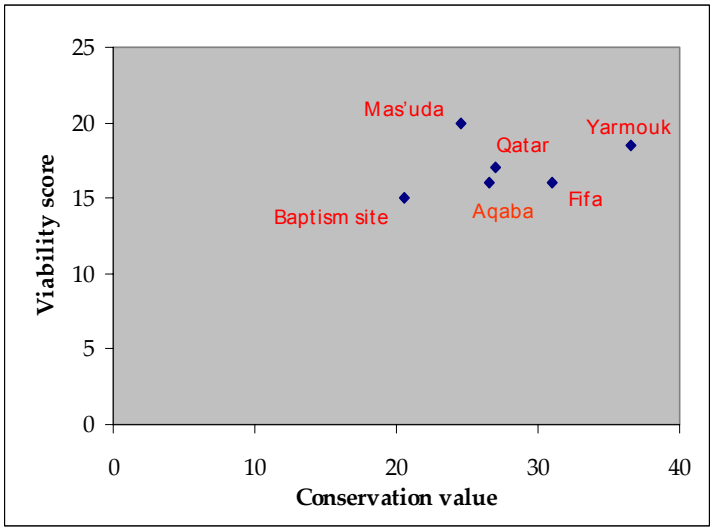
Conservation value	Viability score
Presence of globally significant species or species assemblages.	Size
Contribution to the survival of a globally significant species (e.g. breeding areas).	Threats
Cumulative value for globally significant species	Land use amenable with conservation
Habitats & diversity	Accessibility
Naturalness	Recorded natural history
Fragility	Educational potential
Typicality	Tourism potential
Landscape value (scenic beauty)	Management ease

Note: scoring systems are provided in Appendix 7.

Table 6. Conservation value and viability of proposed PAs

	Aqaba Mountains	Baptism site	Fifa	Jebel Mas'uda	Qatar	Yarmouk
Conservation value						
Presence of globally significant species or species assemblages.	5	4	5	5	5	5
Contribution to the survival of a globally significant species	3	2	5	3	3	5
Cumulative value for globally significant species	3	2,5	4	3,5	3,5	4,5
Habitats and Diversity	3	2	4	3	3	5
Naturalness	3	2	3	2,5	3	4
Fragility	2,5	3	3	2	3	4
Typicality	3	3	4	2	3,5	4
Landscape value/appeal	4	2	3	3,5	3	5
total for conservation value	**26,5**	**20,5**	**31**	**24,5**	**27**	**36,5**
Viability score						
Size	1	1	1	3,5	2	1
Threats	3	2	2	2,5	2	2
Land use	4	1	3	4	3	4
Accessibility	1	3	2	2	2	2
Recorded natural history	1	1	1	1	1	1,5
Educational potential	2	3	3	2	3	3
Tourism potential	2	3	1	3	2	3
Management ease	2	1	3	2	2	2
total for viability score	**16**	**15**	**16**	**20**	**17**	**18,5**

Figure 2. Conservation value and viability of proposed PAs



From this analysis, it is obvious that two sites should definitely be included in the final four sites to be targeted by the project, namely Yarmouk and Fifa, as both have the highest conservation value, and a good viability score. Of the remaining four, it is also obvious that the Baptism site should be dropped, as it score low on both conservation value and viability. A choice therefore needs to be made between the remaining three (Jebel Mas'uda, Qatar and Aqaba Mountains), as one of these is also to be dropped.

Important is to assess also how representative the sites are – i.e. are the major habitat types in the country well represented by these sites, or do they simply duplicate one another? Table 7 summarises the occurrence of the major habitats/vegetation types in the six short-listed proposed protected areas. From this information it is obvious that while Qatar and Jebel Mas'uda add new habitat types to the PA system (mudflat and Juniper forest, respectively), the Aqaba Mountains add more of the Acacia-Rocky Sudanian habitat already represented at Jebel Mas'uda and Qatar.

The final list of four proposed PAs to be targeted by the full GEF project are therefore:
1. Fifa
2. Jebel Mas'uda
3. Qatar
4. Yarmouk.

Table 7. Percentage (of total in Jordan) of major habitat types occurring in each proposed PA

Habitats	AQABA mts.	Baptism site	Fifa	Jebel Mas'uda	Qatar	Yarmouk
Mediterranean non forest				0.78		
Saline		0.72	0.57			
Steppe				1.56		
Tropical			5.51			
Deciduous oak forest						5.81
Acacia-Rocky Sudanian	1.69			1.09	0.80	
Juniperus				17.6		
Mudflat					3.14	

Source: RSCN (1999)

6. Contribution to Conservation of Globally Significant Biodiversity

All six short-listed proposed protected areas harbour populations of globally significant biodiversity, either continuously or on a seasonal basis. The occurrence of these species is listed in the site-by-site descriptions provided in appendices 1-6, and is summarised below in Table 1.8. From this it is obvious that protecting these sites will help safeguard globally significant biodiversity. Some of these sites harbour unique species, such as the plant *Crypsis schoenoides*, which has a very restricted range and is known from one site in Jordan only, or the fish Tilapia gallileae that is endemic to a few streams in Jordan and Israel. Other sites are critical in the

lifecycle of some species. The mudflats of Qatar, for example, seasonally harbours more than 1% of the world's population of both white stork *Ciconia ciconia* and black stork *Ciconia nigra*.

However, much of the globally significant biodiversity listed at each site is common to more than one site, and it may seem that efforts to conserve this overlaps to a large extent. It must be remembered, though, that the sites must also been seen in conjunction with each other. The Jordan Rift Valley is widely regarded as one of the most important flyways for migratory birds in the world, and a network of suitable – and preferably protected – areas along the Rift Valley is deemed essential for the survival of the many of these species. Preserving a network of appropriate sites, at a distance from each other, serves to provide a series of safe havens as "stepping stones" along the migration route.

The effectiveness of such a system of stepping-stones also depends on land use activities in the intermediate areas, and this will be tackled by the land use component of this GEF project, and in the parallel programme on management of Jordan's network of IBAs.

Table 8. Globally significant species at proposed PAs

Species group	Aqaba mts.	Baptism site	Fifa	Jebel Mas'uda	Qatar	Yarmouk
Plants	3	2	7	2	2	8
Reptiles	-	-	-	-	2	-
Fish	-	-	-	-	-	1
Birds	11	9	12	12	11	10
Mammals	5	5	7	7	8	10
Total	19	16	26	21	23	29

References:

BirdLife (2005) -

Budieri, A. (2005) – Hashemite Kingdom of Jordan. In: Directory of Wetlands of the Middle East. www.wetlands.org/inventory&/MiddleEastDir/JORDAN.htm

Clarke, J.E. (1979) – A Proposal for Wildlife Reserves in Jordan. IUCN/WWF Project Leader for Project 1591 Development of Wildlife Reserves in Jordan. Royal Society for the Conservation of Nature. Amman, 9 July 1979.

Evans, M.I. (ed.) (1994) – Important Bird Areas in the Middle East. BirdLife Conservation Series No.2. BirdLife International, Cambridge, U.K. 410 pp.

Hamidan, N.A. and S. Mir (2003) – The status of Garra ghorensis in Jordan: distribution, ecology and threats. Zoology in the Middle East 30: 49-54.

Lowi, M. (1993) – Water and Power – The politics of a scarce resource in the Jordan River basin. Cambridge Middle East Library: 31. Cambridge University Press, UK, 297 pp.

RSCN (1999) – Protected Areas Review. Royal Society for the Conservation of Nature, Amman.

Annex 20 Appendix 1. Description of Aqaba Mountains

Location: The proposed protected area is located approximately between 29º20'N/35º05'E-29º27'N/35º12'E. It is located in the far southern part of Jordan along the border with Saudi Arabia, with a total length of 16.5 km. The proposed PA is located southeast of Aqaba Port.

Size: The proposed PA site has an area of about 4000 ha.

Altitude: The altitude of the proposed protected area ranges from about 450 m asl in the lowest wadis, to more than 1000 metres (highest point is 1431 m).

Climate: The Aqaba Mountains lie in the Acacia – Rocky Sudanian zone and is very arid, receiving only 32 millimetres of rainfall each year, on average (Table A1.1).

Table A.1.1 Average rainfall at Aqaba Airport (mm)

J	F	M	A	M	J	J	A	S	O	N	D	Year
5	5	5	4	1	0	0	0	0	2	3	8	32

Note: average for 1946-1999 (source: Jordanian Department of Meteorology)

Physical and Ecological Description:
The site is composed of narrow wadi systems flowing through very steep mountains. Some mountains have a gradient of more than 45°. Granite is the dominant formation in the mountains while the wadi beds are covered with gravel. In some areas sandstone lies uncomfortably over thick granite layers. The granites are purplish-red, and banded in many areas by thick, wavy bands of basalt. The wadi systems in the site represent a typical habitat for the flora and fauna of the Jordan Rift Valley, and the major habitat type is the Acacia-Rocky Sudanian type, belonging to the Sudanian-subtropical region. In the lower wadis the vegetation is dominated by low shrubs – mainly *Tamarix, Retama raetam* and *Arthrocnemum macrostachyum*, along with *Acacia tortilis* and *Acacia raddiana*. At some locations, acacias are parasitized by the mistletoe Loranthus acaciae. In more elevated parts of the wadis acacias are generally absent, and the woody vegetation is dominated by Tamarix and *Retama.* Herbaceous vegetation common in the area includes mainly spiny, sclerophyllic species such as *Arnebia tinctoria, Fagonia mollis* and *Zilla spinosa*.

Land use: There are a few minor gravel roads traversing the area to provide access to Bedouin herders, and there are a few temporary Bedouin camps. At some locations along the main wadis subterranean concrete water collection tanks have been constructed to provide drinking water. The only permanent Bedouin settlement near the area is Titin (or Tutun, on older maps), located east of the proposed PA (see Table A1.2). Titin has a population of about 300 persons, along with an army post and a police station. There is no electricity, school or reliable permanent source of water, and younger persons move out of the area to seek employment and/or education. Rainfall – and therefore also grazing/ browsing has reportedly been poor during the past 17 years, and as a result livestock herds have been reduced to about one third of former levels, to 300-400 camels and 2000 goats at present. Formerly, they received two tankers of water per day, but this has been reduced to two times per week. There is no alternative source of livelihood other than livestock, and they have become dependent on welfare, which they receive from Saudi Arabia. Prior to the last boundary adjustments, Titin was located in Saudi Arabia, and most Bedouin vehicles in the area have Saudi license plates. They used to engage in hunting, but wildlife stocks have dwindled considerably, with a number of species (wolf, hyena) having disappeared altogether. When grazing their herds they travel widely, into Saudi Arabia, throughout the Aqaba Mountains, and

far north as well – as formulated by the head of the village 'wherever there is grazing, we will go'. Apart from the police checkpoint in Titin village, there are two more checkpoints monitoring the area: one north and one west of the proposed PA (see Table A1.2). The main power transmission line from Aqaba to Amman runs directly along the entire length of the western boundary of the proposed PA. In addition, a large gas pipeline is currently being installed by Petrojet along the same alignment as the transmission line, and as a result a wide, unpaved road now runs along the entire length. Granite extraction operations have also been ongoing in the area – but just outside the proposed PA – for at least a decade. Two sites were visited on 24th May 2005, one run by the Abu Hayel Company from Aqaba, the other by the Jordan Granite Company from Amman, and eight extraction sites were seen, although there are undoubtedly more. Extraction is mainly based upon exploiting large granite boulders that have accumulated on certain slopes, although where this has petered out they have begun extracting this resource from the mountainside. As a result of the new access provided by the roads constructed by the mining companies and along the power transmission line, hunting has increased significantly, especially to the west of the proposed PA.

Land tenure: Government land, controlled by ASEZA.

Conservation measures: The Aqaba Mountain area was proposed as a 40 km² protected area by RSCN (1999). The site is embedded within a larger IBA identified by BirdLife (Evans, 1994; RSCN & BirdLife, 2000). It lies adjacent to the mountain range 'Non-developmental Zone' declared by ASEZA, which lies northwest of the Aqaba Mountains proposed PA.

Conservation value:
The area lies along the main flyway for many bird species, and raptor migration alone involves at least 100,000 birds per season. The vegetation is sparse but distinct, and characteristic species are *Acacia tortilis, Acacia raddiana, Caralluma sinaica* (threatened), *Hyphaene thebaica* and *Micromeria sinaica* (threatened). Threatened mammals found in the area are ibex *Capra nubiana*, caracal *Caracal caracal*, rock hyrax *Procavia capensis*, wolf *Canis lupus* and Cape hare *Lepus capensis*. Important bird species include (in the coastal area) white-cheeked tern *Sterna repressa* (migrant), white-eyed gull *Larus leucophthalmus* (non-breeding visitor), and (inland) the imperial eagle *Aquila heliacea* (rare migrant and winter visitor), Levant sparrowhawk *Accipiter brevipes* (migrant in spring, at least 10,000 per season), sooty falcon *Falco concolor* , Lanner falcon *Falco biarmicus*, Liechtenstein's sandgrouse *Pterocles lichtensteinii*, Hume's tawny owl *Strix butleri*, hooded wheatear *Oenanthe monarcha*, Tristam's grackle *Onychognathus tristramii* and Sinai rosefinch *Carpodacus synoicus* (possibly breeding in the mountains). Other species include grey wagtail *Motacilla cinerea*, chukar *Alectoris chukar* and desert lark *Ammomanes deserti*. Bird species of global significance are:

- Globally threatened: corncrake *Crex crex,* imperial eagle *Aquila heliacea*
- Regionally threatened species: Levant sparrowhawk *Accipiter brevipes,* honey buzzard *Pernis apivorus,* saker *Falco cherrug*
- Restricted range species: Hume's tawny owl *Strix butleri,* hooded wheatear *Oenanthe monarcha,* Arabian warbler *Sylvia leucomelaena,* Arabian babbler *Turdoides sqamiceps,* Tristram's grackle *Onychognathus tristramii,* Dead Sea sparrow *Passer moabiticus.*

Table A.1.2 Survey route in Aqaba mountains

Site	Description	North	East
1	Potash dump near NE corner of tailings pond	29º22’25’’	35º01’29.7"
2	Junction near police station	29º22’41’’	35º02’39.7"
3	Corner of trail along pipeline/transmission line	29º23’03’’	35º02’55"
4	Line, at point of squatter's camp	29º22’26.6’’	35º03’33"
5	Line, near km13 sign	29º22’50.3’’	35º04’49.1"
6	Pipeline/transmission line	29º23’11.6"	35º05’18.3"
7	Side road corner, leading to first granite exploitation site	29º23’21.5’’	35º05’27.7"
8	Along this side road	29º23’32’’	35º05’15.8"
9	Granite exploitation site #1 Abu Hayel	29º24’15.1’’	35º05’19.9"
10	Pipeline/transmission line	29º24’05’’	35º06’11.8"
11	Pipeline/transmission line (downhill section)	29º24’54.0’’	35º06’59.1"
12	Bend in road along pipeline/transmission line	29º25’44.7"	35º07’52.9"
13	Water harvester along pipeline/transmission line	29º26’59.4’’	35º08’33.3"
14	Pipeline/transmission line	29º28’47.2’’	35º09’28.9"
15	Turn uphill to the left, along pipeline/ transmission line	29º29’46.5’’	35º09’59.8"
16	Halfway up escarpment, along pipeline/ transmission line	29º31’20.1’’	35º09’59.8"
17	Junction of road to 2nd granite exploitation site	29º32’31.5’’	35º10’05.7"
18	Granite exploitation site #2 Jordan Granite Company	29º32’32.4’’	35º10’00.9"
19	Junction on road to Ain Titin	29º29’47.4’’	35º10’00.9"
20	Along road to Ain Titin point 1	29º28’51.3’’	35º10’06.0"
21	Along road to Ain Titin point 2	29º28’12.1’’	35º11’16.0"
22	Ain Titin village	29º25’50.5’’	35º12’01.7"
23	Junction of road leading back to main road to Aqaba	29º29’38.1’’	35º09’55.5"
24	Gravel mine #1	29º30’35.4’’	35º08’31.2"
25	Gravel mine #2	29º33’51.5’’	35º08’16.4"
26	Junction main road (police station)	29º31’54.1’’	35º07’25.9"

Cultural or historic value: The traditional Bedouin lifestyle is still strong in this area, especially in and around Titin village to the east of the proposed PA. Archeological sites are to be xpected in the honeycombed sandstone hills and ridges that dot the eastern part of the area.

Threats: The main effects of the Bedouin settlements in the area are overgrazing and woodcutting, although hunting was also an issue in the past when there was more wildlife to the east of (and in) the proposed PA. The area is reportedly used as a smuggling route from Saudi Arabia, which raises security issues. The power transmission line, (underground) gas pipeline and major road that all run along the western border are unsightly scars on the landscape and reduce the wilderness value of the site. They also provide easy access to all, and together with the granite mining operations have encouraged poaching in the area. The granite mining operations also create ugly scars, although at this moment this is limited to extracting and carving up of granite boulders. All access roads from the west traverse along unsightly dump sites (industrial waste, construction and demolition rubble), and even settling ponds for toxic mining waste. The main access road from the north runs along several gravel and sand quarries. Closer to Aqaba, many polluting industries such as a potash plant, fertiliser industry, and paint industry have encroached into the wadis west of the proposed PA.

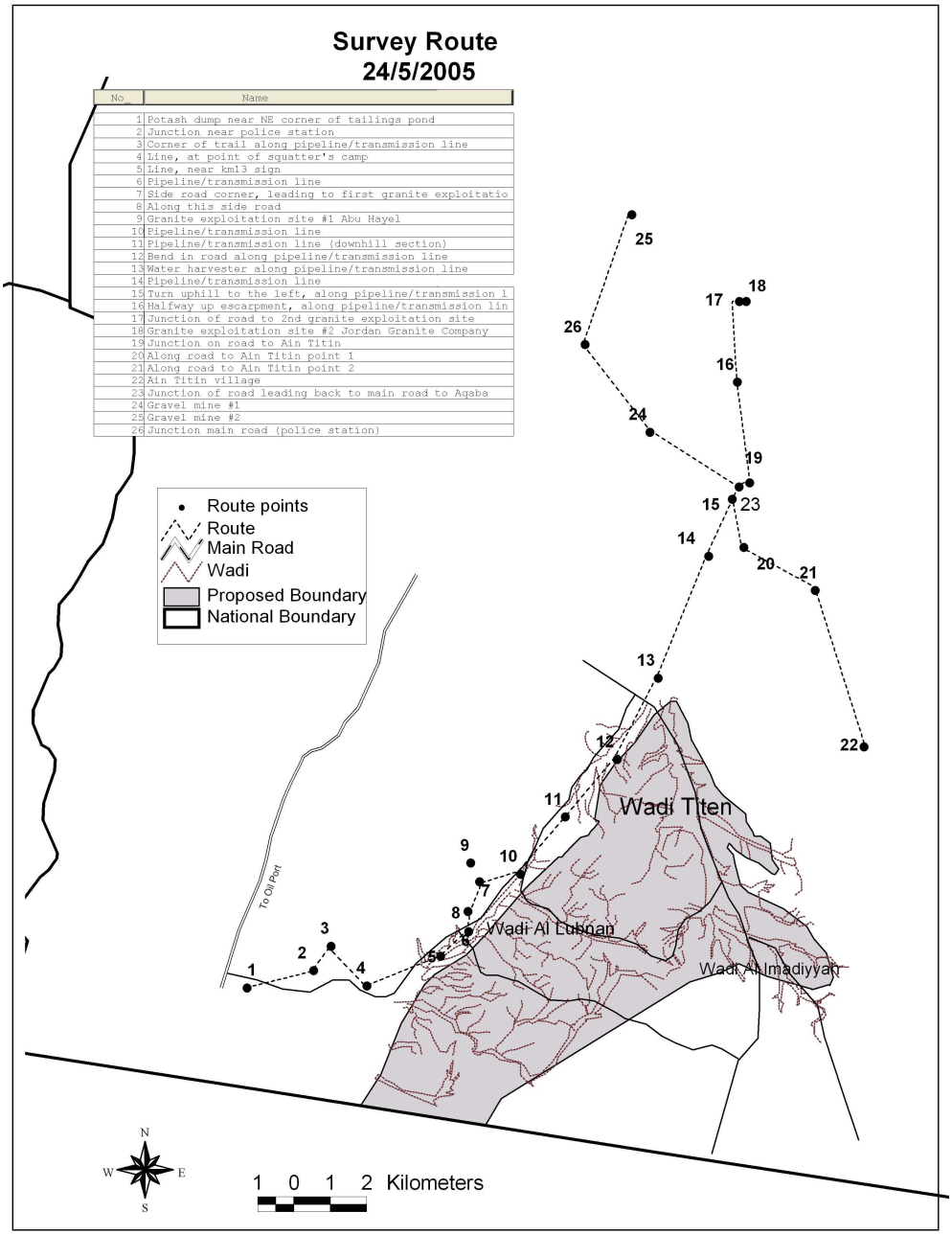
Alternative options: The originally proposed PA is relatively small (40 km²), and ideally the area should be extended, although options to the west are limited because of ongoing granite extraction, and the likelihood that the road along the power transmission line will develop into a major access route. Options that may be considered are:

Option 1) Linking the area to Wadi Rum NR, which lies to the northeast of the proposed Aqaba Mountains PA. However, the distance to Wadi Rum is significant (tens of kilometres), which would mean that the entire area would become very large, and unmanageable unless staffing and budget is increased significantly.

Option 2) Keeping the current non-development status, and targeting the area with land use planning improvement, along with typical IBA management activities such as awareness raising and extension activities.

Option 3) Given the scenic beauty of the area, if the transmission line road was paved this could be used as an alternative access route to Wadi Rum, and perhaps include stops at various points for short walks or photo opportunities. If this is developed, at least one access road from Aqaba eastwards will require a clean-up operation to remove the highly visible eyesores.

Map A.1 Aqaba Mountains and survey route taken on 24th May 2005, with the location of the proposed PA (RSCN, 1999).



Annex 20 Appendix 2. Description of Baptism Site

(also known as Maghtus, Wadi Al Kharrar, Bethany beyond the Jordan)

Location: Located at approximately 31°49'N/35°33'E. The site is located at South Shouneh, about 6 km from the northern shores of the Dead Sea.

Size: The size of the proposed PA is 400-500 ha.

Altitude: The site is located at an altitude ranging from 390 m to 328 m below sea level.

Climate: Annual rainfall is about 157 mm, most of which falls from November to March.

Physical and Ecological Description: The area is part of the Jordanian Subtropical bio-geographical zone, but is characterised by saline habitats, with halophytic and xerophytic species. The area is generally flat with silt dunes, steep edges of Jordan River and is dissected by small wadis. The geology of the area consists of a dissected lacustrine plain formed from Lissan (limestone) marl. Weathering has caused the soils to become very saline, poorly drained, calcareous and gypsoferous silty and loamy textured. Tamarix thickets, reeds and other, sub-tropical vegetation dominate along the river, in side wadis and on the northern edge of the Dead Sea. The Jordan River is the second largest fresh water body in Jordan and an important source of water for irrigation and industry.

Land use: The area is largely a military zone due to the proximity of the border. The archaeological sites that occur throughout the area have been excavated (and where necessary protected by raised roofing) and are linked by a network of paths. The area is managed as an archaeological and historic site by the Ministry of Tourism and Antiquities. The area around the proposed PA has been developed for agricultural use (mainly irrigated orchards).

Land tenure: Government land, managed by the Ministry of Tourism and Antiquities

Conservation measures: Maghtus was proposed as a 4-5 km² protected area by RSCN (1999). The site is located within a larger IBA (Evans, 1994; RSCN & BirdLife, 2000) that extends from the King Hussein Bridge (on the Jordan) in the north, up to Sweimeh on the northern shores of the Dead Sea. No active measures have been taken so far, other than surveys.

Conservation value: A total of 66 vascular plant species have been recorded at the site, including *Ziziphus lotus*, *Ziziphus spina-cristi*, *Ziziphus nummularia*, wild palm *Phoenix dactylifera,* tamarisk *Tamarix* sp., reed *Phragmites australis, Scirpus* sp., *Nitraria retusa* and the introduced *Eucalyptus camaldulensis.* Wild date is a regionally threatened species. The site is not rich in small mammals, as only two species were recorded: *Acomys cahirinus* and *Mus musculus*. Threatened species such as wolf *Canis lupus*, golden jackal *Canis aureus*, Egyptian mongoose *Herpestes ichneumon*, Cape hare *Lepus capensis* and hyena *Hyaena hyaena* have been recorded in the area in the past, and other large mammals occasionally found include fox *Vulpes vulpes* and wild boar *Sus scrofa*. The area is important for passing migratory birds that migrate from Europe to Africa and vice versa. It is also important as a refuge area for certain groups of birds such as plovers, warblers, martins, larks and bulbuls. Breeding birds include sand partridge *Ammoperdix heyi*, black francolin *Francolinus francolinus*, little bittern *Ixobrychus minutus*, cream-coloured coursor *Cursorius cursor*, blue-cheeked bee-eater *Merops superciliosus*, Smyrna kingfisher

Halcyon smyrnensis, clamorous reed warbler *Acrocephalus stentoreus*, Arabian babbler *Turdoides squamiceps*, Spanish sparrow *Passer hispaniolensis* and the Dead Sea sparrow *Passer moabiticus*. Other, non-breeding residents or visitors include the marsh harrier *Circus aeruginosus*, Egyptian vulture *Neophron percnopterus* and cattle egret *Bubulcus ibis*, while white stork *Ciconis ciconia* and corncrake *Crex crex* have been recorded as migrants. Bird species of global significance are:

- Globally threatened: corncrake *Crex crex*
- Species of which 1% or more of the world population have been recorded at the site: white stork *Ciconia ciconia,* cattle egret *Bubulcus ibis*
- Regionally threatened species: black francolin *Francolinus francolinus,* bittern *Botaurus stellaris,* Egyptian vulture *Neophron percnopterus*
- Restricted range species: sand partridge *Ammoperdix heyi,* Arabian babbler *Turdoides squamiceps,* Dead Sea sparrow *Passer moabiticus.*

Cultural or historic value: The area has always been of historic and cultural value, but over the past decade this has increased immensely since the discovery of various archaeological finds in the mid-1990s. Archaeologists are convinced they have located the historic site where John the Baptist baptised his converts in the Jordan River, and spring, steps leading to where the Jordan once flowed, foundations of very early Christian churches, ancient wells, and so on. It is also the reputed site where Jesus was baptised – the Bethany Beyond the Jordan of the Bible. A new church has been constructed, along with a new facility leading down to the Jordan River for modern pilgrims to use. Vehicles must be left at the Maghtus tourist centre, and from there shuttle buses take tourists to the archaeological site. In the archaeological area, a network or paths have been constructed so that all the sites (about a dozen) can be accessed on foot. A good account of the history and archaeology of the sites is provided by http://www.elmaghtas.com/ancient/ancient.html.

Threats: The water level in the Jordan River has become very low in recent years due to over pumping for agriculture and the water itself has become rather saline. The numbers of tourists at present are low, but do cause some limited disturbance. Land mines have been laid along the border by Israeli occupying forces in 1967, and their removal or explosion poses a threat.

Alternative options: As agricultural and other development has extended right up to the 4-5 km² proposed PA, there are no opportunities for further expansion. The surrounding IBA still retains most of its conservation value, however, and should be managed as such.

Location: Located at approximately 30º56'N/35º25'E. Fifa (or Fifi) lies to the west of Fifa village just to the south of the Dead Sea. It is centred between Wadi Al Jeib in the north and Wadi Dahel in the south.

Size: The size of the proposed PA is 2700 ha.

Altitude: The proposed Fifa PA is located between 340-380 metres below sea level, and as such would qualify for the lowest terrestrial nature reserve in the world.

Climate: Fifa lies in the Acacia – Rocky Sudanian zone and is very arid, receiving only between 50-100 mm of rainfall each year, in an erratic distribution pattern. The sparse rainfall that does fall, however, is invariably recorded from November to March. Characteristic is a hot and dry summer and a cold and dry winter.

Physical and Ecological Description:
Safi Association: medium to low angle piedmont alluvial fans supporting coarse to medium textured, calcareous and often saline soils. The toeslopes are often extremely saline and finely textured. The soil is loamy and sandy, mixed, hyperthermic, consisting of deep families of typical Torrifluvent soils. Fifa consists of agricultural plains with sand and silt dunes covered with halophytic vegetation and sub-tropical vegetation. The site has a saline soil wadi system with a small perennial stream that crosses from the south to the north and has created two oasis ecosystems that are unique in the Jordan valley. The water of these oases is saline, with an electroconductivity of 56.1 mS, a TDS of 28.3 ppt, and a low dissolved oxygen level of 1.5 mg/l20. The site contains the only remnants of what was formerly a much larger area of vegetation characteristic of the Sudanian biogeographical zone. The site is generally flat with a saline soil, penetrated by a (groundwater) system from south to north that forms two large oases that are largely (70%) covered with wetland vegetation dominated by common reed *Phragmites australis, Juncus maritimus*, and *Typha domingensis*. The main vegetation type is dominated by *Acacia tortilis* trees, along with *Ziziphus spina-cristi* and *Tamarix* species. In addition there are wadis with *Suaeda aegyptiaca, Tamarix* sp., and *Nitraria retusa*. A single and unique *Phoenix dactylifera* community is found in the southern side of the site and getting its nourishment from the fertile soil and spring of Ebn Eth-theker, the only spring in the proposed site. To the south it borders on a steep, badland escarpment that runs northwest to southeast, and abruptly rises 50-60 metres above the plain.

Land use: The land has no suitability for rainfed cropping. The low angle fan alluvia have a moderately to high suitability for irrigated agriculture, and is already used for this purpose. RSCN surveys in the late 1990s assessed that there were a total of 11 illegal farms inside the rangeland, fully served with water pipes from the Jordan Valley Authority. In the second phase of the agriculture project of Ghour Fifa, the authority will serve more farms with water, which may affect the remaining land of the area. Because of its proximity to the border, the area is a military terrain (since 1948) and access is both controlled and limited.

Land tenure: Government land.

Conservation measures: Fifa was proposed as a protected area by RSCN (1999). The area has been proposed as a protected area by RSCN since the late 1990s, but to date few concrete

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20 Pers. comm. Nashat Hamidan (RSCN), based on his field notes of 17 July 2003.

measures have been undertaken other than surveys. It is embedded within a larger IBA identified by BirdLife (Evans, 1994; RSCN & BirdLife, 2000). The site is already declared a rangeland reserve under the name of "Fifa range land reserve". This area was under protection since 1948 by the presence of the Jordanian army, this allowed the plants to grow and reach advanced levels of succession.

Conservation value:
The unique oasis ecosystem is a very important location for migratory birds. At least 7 plant species are of conservation importance, being either (nationally or regionally) threatened or having a restricted range; these include *Epipactis veratifolia, Salvadora persica, Maurea crassifolia, Cordia sinesis, Arundo donax, Acacia tortilis, Suaeda monoica, Phoenix dactylifera, Acacia raddiana* and *Crypsis schoenoides*. The site is the only recorded locality in Jordan where the rare plant *Salvadora persica* occurs in considerable numbers, and is the only site in the country where *Crypsis schoenoides* is found. 7 species of large mammals were recorded in the site, which, although small, is also considered the last refuge for many important mammals (see below). Around 100 species of birds have been recorded, in addition to several species of reptiles. Breeding birds include Bonelli's eagle, sooty falcon, black francolin, sand partridge, namaqua, turtle dove, collared dove, palm dove, rock dove, blue-cheeked bee-eater, great grey shrike, white-crowned wheatear, black wheatear, hooded wheatear, Tristam's grackle, Arabian babbler, fan-tailed raven, Indian silverbill and the Dead Sea sparrow. Migratory species include Levant sparrowhawk, honey buzzard, black kite, white stork and corncrake. The most important mammals recorded are caracal *Caracal caracal*, wolf *Canis lupus*, golden of Asiatic jackal *Canis aureus*, sand (or Rüppells) fox *Vulpes rueppellii*, hyena *Hyaena hyaena*, Cape hare *Lepus capensis* and wild boar *Sus scrofa*. Bird species of global significance are:

- Globally threatened species: corncrake *Crex crex,* Houbara bustard *Chlamydotis undulata*
- Regionally threatened species: honey buzzard *Pernis apivorus,* Levant sparrowhawk *Accipiter brevipes,* sooty falcon, *Falco concolor,* black francolin *Francolinus francolinus*
- Restricted range species: hooded wheatear *Oenanthe monarcha,* sand partridge *Ammoperdix heyi,* Dead Sea sparrow *Passer moabiticus,* Syrian serin *Serinus syriacus,* Arabian babbler *Turdioides squamiceps*

Cultural or historic value: Bronze Age remains have been found at Fifa[21]

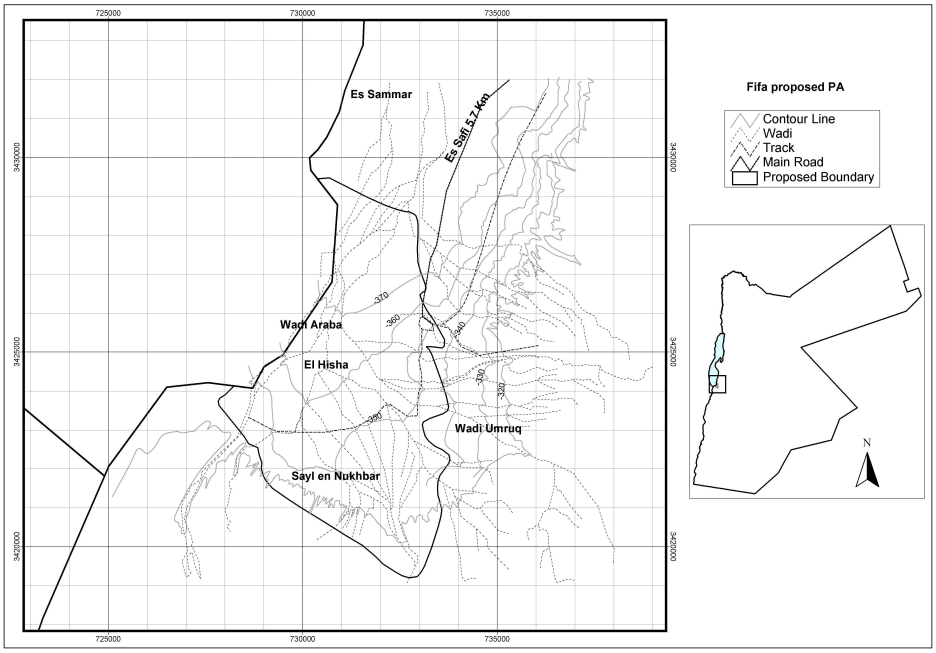
Threats: The area is threatened by industrial development to the north (salt/potash pans and industry), although these attract migrating waders. Other threats include irrigated agricultural development, overgrazing, fuelwood collection, road construction, animal poisoning by the illegal farmers, and hunting of wild boar in the border area. Human pressures started reaching the area specially recently after the peace process. Land mines have been laid along the border by Israeli occupying forces in 1967, and their removal or explosion poses a threat. Also, one of the alignments of the proposed Red Sea-Dead Sea Canal passes directly through (or more likely under) the proposed Fifa PA. The main threat is agricultural expansion, which has recently become more serious due to the completion of the *Integrated Irrigation Project for the Southern Ghors and Wadi Araba*[22]. As part of this project, the Tanur Dam is to provide water for around 10,000 dunums <1000 ha> of new agricultural land in Safi, Fifa and Mazra'a Ghors (http://www.foeme.org/main/newsletter12.htm), and already JVA is providing irrigation water to

[21] Jordan Times, Tuesday, March 21, 2000.
[22] Al Dustur Wednesday, July 9th 2003.

farms encroaching upon the site (see land use section). Although these farms are illegal and established on state owned lands, the Jordan Valley authority is providing these farms with water, which in turn encourages other farmers to establish themselves in the area. The area is traditionally a smuggling route for persons wanting to cross the border between the Israeli occupied territories and Jordan. Not for smuggling of goods, but for smuggling of people, under the cover of tall reed vegetation. For this reason this has always been strongly guarded by the military. This has also resulted in the clearly of some dense palm groves by the military, to provide a less obstructed view.

Alternative options: Given the proximity and ecological linkage to Wadi Hasa as a dry season water source which is also an IBA) the original proposal for Fifa could be expanded up and into the escarpment ecosystem. This would provide an additional link in the north-south biodiversity conservation corridor, which would assist in establishing protection for wildlife and birds moving from Wadi Mujib to Wadi Dana. It would also provide additional cover for the IBA and potentially add an east-west wildlife corridor unit.

Map A.2 Location map of Fifa PA, as proposed by RSCN in 1999.



Location: The proposed site is located in the southern part of Jordan, in Ma'an Governorate, at approximately 30°10'E/35°20'N.

Size: The size of the proposed PA is 46,000 ha.

Altitude: The name of the site was taken from the central mountain peak in the area, Jebel Mas'uda, which attains a height of more than 1240 metres. The proposed PA extends over an altitude of 180 m asl in the west, via the main *jebel*, up to the road that runs along the southern and eastern border, at altitudes of up to 1500 (-1600) m.

Climate: The area receives between 100-200 mm of rainfall a year, most of which falls from November to March. The nearest station is Wadi Musa, which received 179 mm per year (see Table A.4.1).

Table A.4.1 Rainfall in Wadi Musa (mm)

J	F	M	A	M	J	J	A	S	O	N	D	Year
40	38	37	10	4	0	0	0	0	4	13	34	179

Note: average for 1976-1998 (source: Jordanian Department of Meteorology)

Physical and Ecological Description:
Jebel Mas'uda straddles three biogeographical zones: Arid Mediterranean, Irano-Turanean and Saharo-Arabian. It lies in a region including parts of the Southern Escarpment, Esh Sharrah Plateau and the Rift Valley Desert. Mas'uda belongs to the same land formation type as Petra and is characterised by sandstone. The Jebel Mas'uda area consists of high relief overlooking Wadi Araba to the west, and the Sharrah Mountains to the east. The area is very rugged, especially to the west and north, and the landscape is dominated by steep mountains and sandstone gorges. In the drier part of the escarpment much of the steep land is largely devoid of plant cover, but some areas support scrub growth (Clarke, 1979), while small clumps of *Juniperus* occurs in clefts and below ridge tops. In the west towards Wadi Araba, the land is somewhat flat and tends to be sandy – in this area there is vegetation dominated by *Acacia tortilis* trees *and Haloxylon persicum* shrubs. Later descriptions by RSCN (1999) record that much of the entire area seems to be devoid of vegetation cover. However, a rapid survey by the consultants on 23 May 2005 do not indicate that the area is more denuded than arid parts of Mujib NR or Dana NR. There are large, bare expanses, but most wadis support a tree'd vegetation – usually dominated by oleander, tamarisk and *Retama raetam*.

Land use: Clarke (1979) reports that nomadic Bedouin graze their sheep and goats in the area, and temporarily live in the area. They also collect fuelwood in the proposed reserve. Some hunting is thought to take place in peripheral areas. People live mainly along the eastern side, where Clarke (1979) reports a total population of 8,500. A small village – Bir Hamad – occurs in the central part of the proposed reserve (for location see Table A4.2). This is a traditional village, consisting of flat-roofed houses constructed out of stone blocks. At the time of the survey (23 May 2005) it was not inhabited, as all were away tending their livestock. It is likely that the village is used during the winter months only. Some exploratory gold mining is occurring on the far northwestern corner of the proposed reserve, but this is small scale and has not entered production in spite of seven years of exploration. It is run by the National Resources Authority,

and the facility has six mobile housing units, two office blocks, and a variable number of staff ranging from 5-20, depending on the activities. The exploration site area is an igneous outcrop of 2-3 km².

Table A.4.2 Survey route Mas'uda (see Map A.3)

Site	Description	North	East
1	Start of road entering proposed PA	30º17'10.9''	35º15'24"
2	Junction for road to mining site	30º16'45''	35º15'51"
3	Gold mining exploratory site	30º15'16.9''	35º17'52.9"
4	Watering point (for livestock)	30º16'28.6''	35º16'54.6"
5	Construction point	30º16'03''	35º20'16.1"
6	Along road	30º15'10.9''	35º21'08.9"
7	Wadi crossing	30º14'25.4''	35º21'29"
8	Bedouin camp site	30º13'00''	35º22'04"
9	Halfway up Jebel Mas'uda	30º11'09''	35º21'59"
10	Viewpoint near top	30º10'47.9''	35º21'46"
11	Junction with small road heading south; springs	30º07'15''	35º22'04"
12	Right turn on small road to Bir Hamad village	30º05'51''	35º21'53"
13	Bir Hamad village (centre)	30º05'22.0''	35º21'56.7"
14	Link up with old road alignment	30º06'40''	35º23'40"
15	Main junction with southern/SEborder road	30º08'03.2''	35º24'30.7"
16	Link up with King's Highway	30º10'18''	35º25'40"

Land tenure: Government land.

Conservation measures: Included in the 12 original sites recommended by Clarke (1979), and in the sites proposed by RSCN (1999). To date no concrete measures have been undertaken in the field, other than surveys by RSCN in the late 1990s. The proposed protected area largely overlaps with a large IBA (Petra) identified by BirdLife (Evans, 1994; RSCN & BirdLife, 2000).

Conservation value: The area is of significant scenic value, offering spectacular views in a number of directions, including towards Wadi Musa/Petra, but also in other directions.
Plant species in the upland area includes *Thymelaea hirsuta, Artemisia sieberi, Ononis natrix, Nerium oleander, Retama raetam* and *Tamarix,* while in the western lowland it is characterised by the presence of *Acacia tortilis* trees and *Haloxylon persicum* shrubs. The *Juniperus* patches in the area are among the last remaining examples of this habitat in the region. Clarke (1979) describes the area as being one of the last areas remaining in Jordan where viable populations of some of the large mammals of the country still survive, and at the time species such as striped hyena *Hyaena hyaena*, red fox *Vulpes vulpes*, wolf *Canis lupus,* Cape hare *Lepus capensis*, jackal *Canis aureus*, badger *Meles meles*, rock hyrax *Procavia capensis* and Indian crested porcupine *Hystrix indica* were still recorded in the area. Whether these species still occur is unclear, as there have been few recent mammal surveys in the area, although these were confirmed by RSCN surveys in 1998. Bird species recorded in the area include Temminck's horned lark *Eremophila bilopha*, bimaculated lark *Melanocorypha calandra*, desert lark *Ammomanes deserti*, crested lark *Galeria cristata*, great (or southern) grey shrike *Lanius excubitor*, crag martin *Ptyonoprogne rupestris*, yellow-vented (common) bulbul *Pycnonotus xanthopygos*, mourning wheatear *Oenanthe lugens*, white-crowned black wheatear *Oenanthe leucopyga*, blackstart *Cercomela melanura*, Tristram's grackle *Onychognathus tristrami*, Sinai rose-finch *Carpodacus synoicus*,

rock sparrow *Petronia petronia*, brown-necked raven *Corvus ruficollis* and fan-tailed raven *Corvus rhipidurus*. Globally significant bird species recorded at the site include:

- Globally threatened species: lesser kestrel *Falco naumanni,* imperial eagle *Aquila heliaca*
- Regionally threatened species: lammergeier *Gypaetus barbatus,* griffon vulture *Gyps fulvus,* honey buzzard *Pernis apivorus,* Egyptian vulture *Neophron percnopterus,* sooty falcon *Falco concolor*
- Restricted range species: sand partridge *Ammoperdix heyi,* Tristram's grackle *Onychognathus tristramii,* Sinai rosefinch *Carpodacus synoicus,* Syrian serin *Serinus syriacus,* Hume's tawny owl *Strix butleri.*

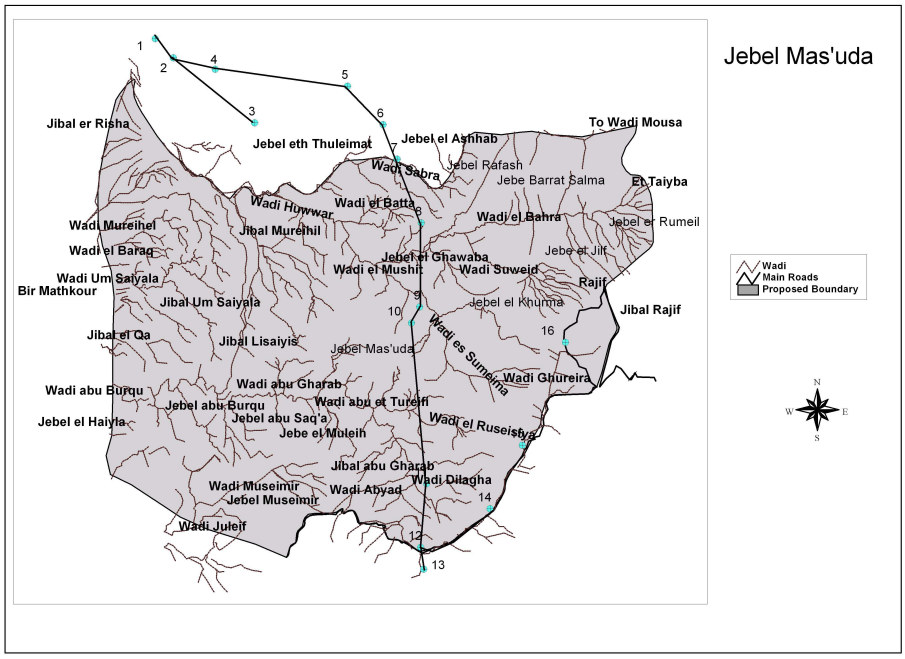
Cultural or historic value: Ruins occur at various sites along the proposed eastern boundary of Jebel Mas'uda, 3-4 km south of Rajif. If Jebel Mas'uda is expanded to the north so that it is contiguous with Petra, it is likely that several more Nabatean sites will be included as well.

Threats: Overgrazing and woodcutting have had a significant impact on the site. The tree cover has been especially effected and is often completely absent throughout much of the area (RSCN, 1999). Incremental development of tourism facilities (for Petra, at Wadi Musa) may detract from the area's value for biodiversity conservation. Community pressure for infrastructure development (roads) may detract from it's biodiversity conservation value. A paved road now bisects the proposed PA, running from the northwestern corner to the southeastern corner via Jebel Mas'uda, and continuing along the eastern side. This road is a mixed blessing, as it simplifies access for management, but at the same time is provides easy access for poachers, and will encourage further development along this route.

Alternative options:

- Option 1) The northern boundary should be extended so that it joins with Petra, and a *modus operandi* be developed with the Petra Development Authority for jointly addressing management issues. There is significant scope for synergy, as visitors to the famous historic/cultural site at Petra may be encouraged to extend their stay for a visit to the to-be-established adjacent nature reserve.
- Option 2) The western boundary should be extended in Wadi Araba up to the international border. This would lead to the inclusion of important habitat for the endangered Dorcas gazelle, which occur in this border area and frequently cross from the Negev desert into Jordan.
- Bir Hamad poses both a management issue and an opportunity. Because of its central (enclave) location it could be considered developing the location for ecotourism, turning some of the houses into home stays (e.g. by providing guidance and soft loans to villagers) and using as a starting point for hikes.

Map A.3 <u>Location map of Jebel Mas'uda proposed PA</u> (RSCN, 1999), with the survey route taken on 23rd May 2005 (see Table A.4.2).



Location: 32º44'N/35º44'E

Size: The size of the proposed PA is 5250 ha.

Altitude: The Qatar mudflat area has a very small altitude range from 43 m a.s.l to 50 m a.s.l.

Climate: Qatar is located within the *Acacia* – Rocky Sudanian zone and is very arid, receiving less than 50 mm per year, on average. The nearest rainfall station is Aqaba Airport located 40 km to the south (see Table A5.1), which receives only 32 millimetres per year, on average.

Table A.5.1 Average rainfall at Aqaba Airport (mm)

J	F	M	A	M	J	J	A	S	O	N	D	Year
5	5	5	4	1	0	0	0	0	2	3	8	32

Note: average for 1946-1999 (source: Jordanian Department of Meteorology)

Physical and Ecological Description: The Qatar proposed PA consists of a very flat mudflat wetland, dune and *Acacia*-Rocky Sudanian habitat located to the west of the Dead Sea highway, connected to more steppe habitat east of the road down the Aqaba mountains. The *Acacia*-Rocky Sudanian habitat is characterised by an *Acacia tortilis* woodland that extends towards the western side of the road. Most of the local residents live in Qatar village (250 inhabitants in 2004), which is located close to the highway. The lower area consists of sand dunes (30% of area) with *Haloxylon persicum* vegetation, which gives way to mudflats in the lowest part of the area. The mudflat (43% of area) is surrounded by *Tamarix* and *Nitraria retusa* shrubs/treelets, but the centre of the mudflat is devoid of woody vegetation, although in the wet season small, annual Chenopodiaceae (unidentified species) occur in large numbers. The *Nitraria shrubs* are all heavily sculptured due to intensive browsing by sheep and goats. The mudflat consists of dry to moist mud in the summer, and is wet or submerged in the rainy season. An oasis with date palms extends over less than 1% of the total area, and is characterised by a clump of old palm trees. These may be considered remnants of a wetland and the oasis system found in the area <not to be confused with the date palm plantations recently established along the road>. *Acacia* woodland – characteristic for the subtropical climate zone – extends over about 26% of the area, especially to the east of the highway, but also in a narrow belt along the western side. The dunes are up to about 10 metres in height and are sparsely covered with vegetation. Further north – outside of the proposed protected area – the dunes gradually become lower and are almost devoid of vegetation. Land consisting of gravel and marl is found on both sides of the road, but is more evident on the eastern side of the highway.

Land use: Human use of the area is mainly grazing (browsing) and wood cutting, carried out by the people of Qatar village. Qatar village has reportedly been expanding rapidly over the past few years, and many of the houses appear to be new. Some private land is located on the border of the proposed site, to the west of the highway, and has been, or is in the process of being converted to date palm groves. During a visit to Qatar on 24 May 2005 it was noticed that many of these palm groves are in a sorry state, with many young palms either dead or dying. There are also some extensive, privately owned irrigated vegetable and fruit gardens located along the road.

Land tenure: Government land, partially encroached upon by farmers.

Conservation measures: Qatar was proposed as a protected area by RSCN (1999); after this, a transboundary reserve was proposed on the Israeli occupied side. Qatar is dealt with in the Jordan Rift Valley Integrated Development Plan - Environmental Profile – of 1996. The proposed protected area is embedded within a larger IBA (Wadi Araba) identified by BirdLife (Evans, 1994; RSCN & BirdLife, 2000). The Jordan Society for Sustainable Development is currently implementing a USAID-funded *Biodiversity Sensitivity Mapping Project* (2002-2005) in Wadi Araba, from Aqaba to about 70km north. They will be proposing a sustainable land use development programme in the area to USAID.

Conservation value: The mudflat vegetation dominated by *Tamarix* and *Nitraria retusa* shrubs is a unique feature of the Qatar site, along with a ground cover of diminutive Chenopodiaceae and patches of *Juncus maritima*. The *Acacia* woodland to the east of the highway is widely regarded as being the most representative example of this habitat in Jordan. The site also has a significant palm community, which is representative for oasis habitat. Plant species recorded at Qatar further include *Acacia raddiana, Acacia tortilis, Alhadji maurorum, Anabasis articulata, Asphodelus* sp., *Atriplex* sp., *Fagoma mollis, Haloxylon persicum, Hammada salicornica, Juncus maritimus*, *Neurada procumbens, Nitraria retusa, Phoenix dactylifera, Phragmites australis, Plantago* sp., *Retama raetam, Salsola vermiculata, Shismus arabicus, Tamarix* sp., *Ziziphus spina-cristi* and *Zygophyllum domosum.*

Two threatened species of reptile have been recorded at Qatar, namely the desert or grey monitor lizard *Varanus griseus* (Red Data Book-1994, list 3 / CITES-I) and the spiny tailed lizard *Uromastyx aegyptius* (CITES-II, a herbivorous agamid lizard). Mammal species of global significance recorded in the area are ibex *Capra nubiana* (Red Data Book-1996, list 1), Dorcas gazelle *Gazella dorcas* (Red Data Book-1996, list 3 / CITES-I), wolf *Canis lupus* (Red Data Book-1994, list 1 / CITES-II), hyena *Hyaena hyaena* (CITES-II), Indian crested porcupine *Hystrix indica* (CITES-III), Cape hare *Lepus capensis*, rock hyrax *Procavia capensis*, and Rüppell's fox *Vulpes rueppellii*. In the not so distant past, leopard was also recorded in the area, but these have become extinct in Jordan. Birds of global significance recorded in the IBA are:

- Globally threatened: lesser kestrel *Falco naumanni*, Houbara bustard *Chlamydotus undulata*
- 1% or more of global population: white stork *Ciconia ciconia,* black stork *Ciconia nigra*
- Regionally threatened: Egyptian vulture *Neophron percnopterus,* griffon vulture *Gyps fulvus*
- Restricted range species: hooded wheatear *Oenanthe monarcha,* sand partridge *Ammoperdix heyi,* Arabian babbler *Turdioides squamiceps,* Tristram's grackle *Onychognathus tristramii,* Sinai rosefinch *Carpodacus synoicus.*

Cultural or historic value: Unknown.

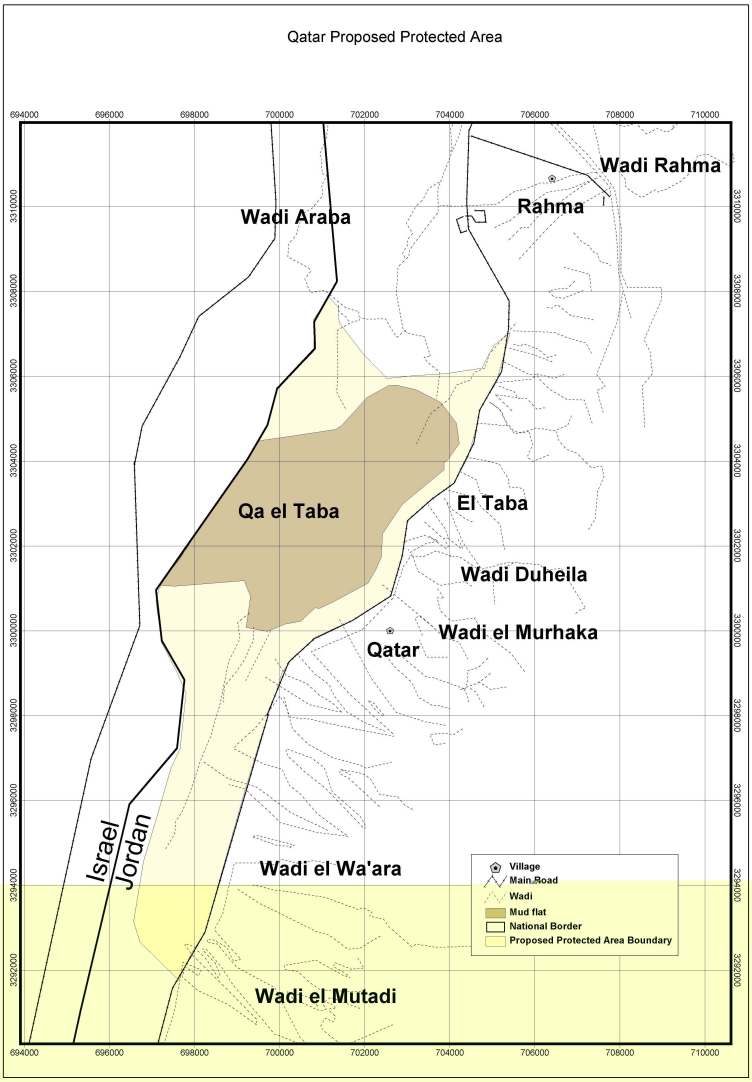
Threats: Overgrazing and –browsing and wood cutting are the major threats to the site. Further encroachment of (date-)farms and water extraction to irrigate these date farms is likely to affect the hydrology of the area and may threaten the wetland. The date farms are reportedly being supported by date palm seedlings provided for free from Saudi Arabia. Reportedly, the area was strongly polluted by a copper smelting(?) plant, located to the southwest of the wetland area in nearby Israeli occupied territory. This plant reportedly discharges its effluents directly into the wetland, having created a bluish-green layer that was discovered by a RSCN team in 1998. Analysis of samples indicated that this was waste material from a copper industry; whether the plant is still active is not known. Qatar village has received development assistance from FoEME in their regional programme for promoting solar power. There are plans for constructing a new and significantly expanded Aqaba International Airport to the north of the present airport, which may threaten a southward expansion of the reserve (as recommended below; see alternative

options), and threaten migratory birds (potential bird strikes!) as the airport will be along the direct route of this major flyway.

Alternative options: The proposed Qatar protected area lies within a very narrow corridor bounded by the international border to the west and the alluvial fans of several short steep wadis emerging directly form the southern JRV escarpment. This is the narrowest portion of Wadi Araba and there is a direct ecological link between the alluvial fans and the Qatar mudflats plant communities due to the presence of underground water sources throughout much of the year in this very arid zone. There are various options for expanding the current size, which would increase viability and add to the site's conservation value; these options are:

- Option 1. The boundaries of the proposed protected area are expended to the east up to the watershed boundary, which lies at approximately 1000m asl (although the topography is quite complex in the escarpment at this stage). This would add another link in the north-south biodiversity corridor and migratory bird habitats between Wadi Dana and Wadi Rum. The project should explore opportunities for linking up with the Hmeimah archaeological site (Roman era ruins, including cisterns), and scenic areas west of this site, as recommended by ASEZA (pers. Comm. Bilal, 26 May 2005).
- Option 2. The boundaries are expanded further south in the direction of Aqaba. The originally proposed southern reserve boundary coincides with a rise in the topography near the road. However, further south of this rise the area consists of natural vegetation that appears to be either seasonally inundated sand flats, or areas that receive a lot of surface runoff. This area is characterised by a reasonable density of low bushes and scrub. Because of lack of a security clearance and the proximity of a large military post, the consultant was unable to enter the area, and the survey was limited to what could be seen from the Dead Sea Highway.
- Option 3. Expanding further north in the sand dune habitat. Recommended is that as much of this habitat is included as possible, up to where the dunes become (virtually) devoid of vegetation and are of little interest to biodiversity conservation.

Map A.4 Location map of Qatar proposed PA (RSCN, 1999).



Annex 20 Appendix 6. Description of Yarmouk

Location: Yarmouk is located in the far north west part of Jordan along the Yarmouk River, at 32º44'N/35º44'E, along the Syrian border, about 20 km north of Irbid, Irbid Governorate.

Size: The size of the proposed PA is about 3000 ha.

Altitude: 300 m above sea level to 210 m below sea level.

Climate: The climate in the area is typical Mediterranean climate with hot summer days and cool to cold winter days. Rainfall is mainly in from November to March, with an annual average between 500-600 mm. Rainfall in Irbid, the nearest station, is 472 mm per year.

Table A.6.1 Rainfall in Irbid (mm)

J	F	M	A	M	J	J	A	S	O	N	D	Year
110	93	88	26	7	1	0	0	1	13	51	83	472

Note: average for 1937-1999 (source: Jordanian Department of Meteorology)

Physical and Ecological Description: The site is located within the Mediterranean ecological region of Jordan. The Yarmouk River, which is said to be the least polluted of Jordan's rivers, flows through a steep-sided valley running along the international border with Syria, and eventually enters the Jordan River a few kilometres south of Lake Tiberias. The average annual flow in the river has been variously estimated at 357-393 million cubic metres (Budieri, 2005). The river banks support lush stands of common reed *Phragmites communis,* bullrush *Typha angustata* oleander *Nerium oleander,* sea rush *Juncus maritimus,* willow *Salix acmophylla* and other wetland plants typical of the region, while the northern hill slopes support remnants of native Aleppo pine *Pinus halepensis* woodland. Other species include *Amygdalus communis, Platanus oreientalis, Salix alba, Styrax officinalis* and *Ziziphus lotus.* The southern upper part of the site contains mountains that are covered with steppe vegetation and the largest remaining stand of Valonia oak *Quercus aegilops* (a.k.a great prickly-cupped oak, a deciduous oak species) forest in the region. Although generally described as 'forests' most of the wooded area does not have a closed canopy and consists of a woodland with 50-80% tree cover, with many rocks exposed at the surface. Along the steep northern slopes there are several seasonal wadi systems that flow into the Yarmouk. Some of the wadis are hard to pass through because either they are too steep or have high waterfalls.

Land use: Because of its proximity to the Golan Heights/Syrian border, the river valley is a military zone and access is restricted. Water from the Yarmouk River is used as a water supply to irrigate farmland in the Jordan Valley. Fishing and reed-cutting occur along the river, and the adjacent land is intensively cultivated for fruits and vegetables. In the upper areas, farmlands occur scattered on the moderate slopes – these concentrate on vegetable crops along with some sheep and goat grazing. Wood is collected in the forests for fuel. The woodland area of the upper slopes is popular for Jordanian tourists and day visitors (esp. school children) who come to picnic and see the famous Yarmouk Battle site. Therapeutic hot springs at Al Himma, just to the west of Yarmouk and 10km north of Umm Qays, are highly popular. There are two bathing facilities: a privately run, high quality complex and a public bath complex with separate timetables for men and women. Local communities are interested in ecotourism opportunities, and have expressed an interest in having the area declared a protected area, managed by RSCN, as this might provide employment opportunities.

Land tenure: Government land, partially encroached upon in the valley bottom and upper slopes.

Conservation measures: Yarmouk was proposed as a protected area by Clarke (1979) and again by RSCN (1999). Access to much of the area is restricted for security reasons (it lies opposite the occupied Golan Heights), and this provides some indirect protection. The Yarmouk Valley has been identified as an IBA by BirdLife International (Evans, 1994; RSCN & BirdLife Jordan, 2000). It has also been identified a wetland of particular importance in the Directory of Wetlands of the Middle East. BirdLife International's regional GEF-funded *Soaring Birds Project* will target Yarmouk as one of its key sites (there will be 1-2 sites in each of the 11 countries), for IBA type activities, such as awareness raising, achieving agreements with land users, and so on.

Conservation value: Yarmouk is considered of very high importance in the flyways of large numbers of migratory species, including waterfowl and raptors. The site also has a high diversity of habitats and species. About 120 plant species were recorded in the site most of them are annuals. The most important species are *Quercus aegilops, Salix alba, Platanus orientalis, Amygdalus communis, Rhamnus palaestina, Ferula communis, Orchis papilionacea* and *Rosularia libanotica*. The *Quercus aegilops* forest in the area is the largest deciduous oak forest in the region. In addition, 25 species of aquatic and terrestrial animals and many important raptors and migratory birds have been recorded. Many species of waterbirds are recorded in the area during the migration seasons and in winter, including *Bubulcus ibis*, *Ardea cinerea*, *A. purpurea*, *Anas crecca*, *Gallinula chloropus*, *Vanellus vanellus*, *Gallinago gallinago*, *Tringa totanus*, *T. nebularia*, *Actitis hypoleucos*, *Larus ridibundus* and *Alcedo atthis*. Common coot *Fulica atra* breeds, and the rare brown fish owl *Ketupa zeylonensis* is known to have occurred in the area as recently as 1986 (Evans, 1994). The area is a nesting site for the important Egyptian vulture *Neophron percnopterus* that is found in significant numbers. Three species of amphibian have been recorded, including *Rana ridibunda, and t*he fish fauna in the river includes two species of tilapia *Tilapia* including the endemic *Tilapia gallileae*. 15 species of large mammal have been recorded, including the rock hyrax *Procavia capensis*, jungle cat *Felis chaus*, caracal *Caracal caracal,* mountain gazelle *Gazella gazella,* Eurasian otter *Lutra lutra*, and the introduced coypu *Myocastor coypus.* Bird species of global significance are:

- Globally threatened species: pygmy cormorant *Phalacrocorax pygmaeus,* marbled teal *Marmaronetta angustirostris*
- Regionally threatened species: griffon vulture *Gyps fulvus,* honey buzzard *Pernis apivorus,* lesser spotted eagle *Aquila pomaria,* brown fish owl *Ketupa zeylonensis,* Levant sparrowhawk *Accipiter brevipes*
- Restricted range species: Finsch's wheatear *Oenanthe finschii,* Upcher's warbler *Hippolais languida,* sand partridge *Ammoperdix heyi*

Cultural or historic value: Yarmouk – or more accurately a small hilly area in the lower valley – was the site where Byzantine armies were defeated by Arab armies at the Battle of Yarmouk in 636 AD. There is a plaque commemorating this located at a picnic site overlooking the valley. The Al Himma hot springs were already in use during Roman times and considered highly therapeutic. The now defunct Hejaz railway – which was constructed between 1900-1908 and runs from Damascus to Medina – winds its way through the Yarmouk valley.

Threats: Diversion of water to supply irrigation to intensive agricultural projects in the Jordan Valley is regarded a critical problem along the lower course of the river. Since the Peace Agreement with Israel, allocations have been regulated according to Annex II of the agreement (see below). Wetlands along the riverbanks have been drained for agricultural purposes, and agricultural expansion along the river is still ongoing. Soil erosion is said to be a problem locally,

and occasional hunting occurs, although the military presence prevents this to a large extent. Over-exploitation of groundwater in the basin has led to a general depletion in spring flows. The coypu (a large, semi-aquatic mammal) *Myocastor coypus* has been introduced; its effects on riverine vegetation are unknown but may be highly destructive. Exotic fish – especially *Tilapia zillii* – compete with indigenous endemic *Tilapia gallileae.* The Ramtha Wastewater Treatment Plant – which services 3000 households in and around Al Ramtha, 20-odd kilometres southeast of Yarmouk – discharges treated effluent into the river, but this is currently considered to be at an acceptable level (Budieri, 2005). The plant, initially built in the late 1980s with a capacity of 2000 m³/day, has recently been upgraded and now has an active capacity of 3200 m³/day. In 2003 it ran at 3136 m³/day, close to its operational maximum. Treatment consists of pre-treatment, biological treatment to remove carbon and nitrate pollution as well as phosphorus, and tertiary sand filters treatment to remove algae and parasites (http://www.ngwa.gov.jo/sewer/).

Water allocations: Annex II on Water Related Matters of the Israel-Jordan Peace Treaty of 1995 includes an important Article on the "Allocation of Water from the Yarmouk River". According to the relevant article, the following allocations have been agreed to:

- Summer period - 15th May to 15th October of each year. Israel pumps (12) MCM and Jordan gets the rest of the flow.
- Winter period - 16th October to 14th May of each year. Israel pumps (13) MCM and Jordan is entitled to the rest of the flow subject to provisions outlined herein below: Jordan concedes to Israel pumping an additional (20) MCM from the Yarmouk in winter in return for Israel conceding to transferring to Jordan during the summer period the quantity specified in paragraphs (2.a) below from the Jordan River.
- In order that waste of water will be minimized, Israel and Jordan may use, downstream of point 121/Adassiya Diversion, excess floodwater that is not usable and will evidently go to waste unused.

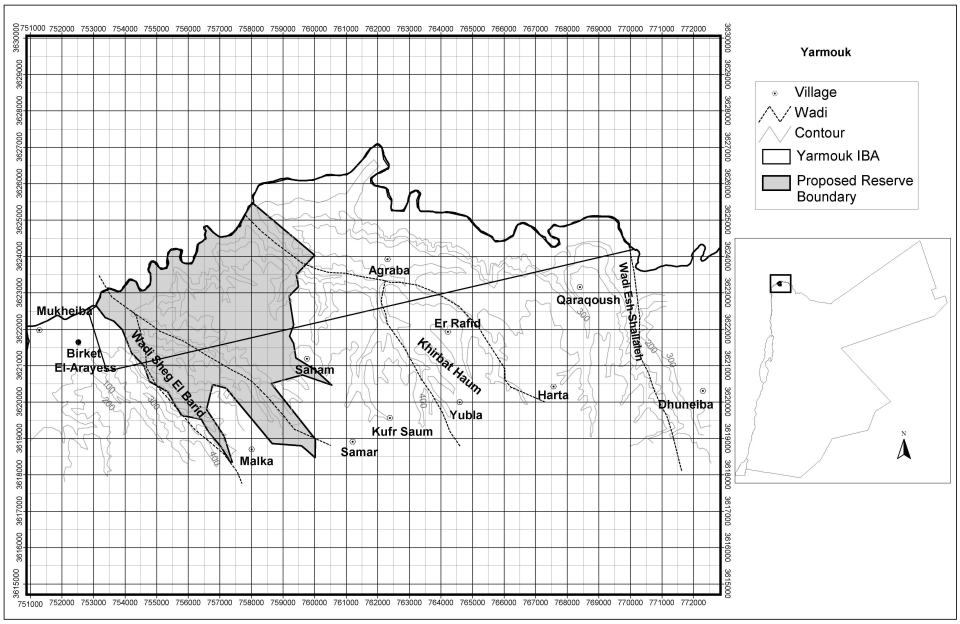
Plans for a large-scale, joint Syrian-Jordanian dam on the Yarmouk at Maqarin were first drawn up in 1953 (Lowi, 1993), but due to political pressures these have been shelved and redrawn on a number of occasions. Following a treaty between Jordan and Syria, however, work finally began on the dam – known as the Wahda, Wehda or Unity Dam – early in 2003. The dam will be located near Maqarin and is designed to have a height of 100 m and a gross storage capacity of about 230 million m³. It is a dual-purpose dam, primarily supplying water to Jordan and hydropower to Syria. Both the dam and other water extractions on the Yarmouk are expected to affect wetland habitats in the valley bottom. However, these are not the primary habitats targeted for conservation – these are the forests on the higher slopes, and the migratory birds that mainly depend on woodland and grassland habitats.

Alternative options: A number of options for reserve boundaries and management have been formulated in the past; these are:

- Option 1. RSCN already manages two other highland forest protected areas (Ajloun and Dibbeen) in northeastern Jordan, and there may be opportunities for cooperation in managing these sites.
- Option 2. There are some places that are outside the proposed reserve but are of importance to conservation and could be added, or at least have some form of reserve management extended to them; these are:
  - A cave close to the borders near Mukheibeh village. This cave has a good population of Egyptian fruit bat *Rousettus aegyptiacus*.

- The second is a site is near a village called Adassiyeh that is to the south of Mukheibeh. On the road to this village there is a large population of rock hyrax *Procavia capensis*. A special protection for these two species should be designed because a high population of these two species is hard to find anywhere else.
- Lastly, there is a small, spring-fed pool at Birket al Rais, outside but near the proposed protected area, which support amphibians and waterbirds. As it is surrounded by farmland it has not been included in the proposed PA.

Map A.5 Location map of Yarmouk proposed PA (RSCN 1999).



Annex 20 Appendix 7. Scoring system for site selection criteria

Conservation value

CRITERIA	SCORE	THRESHOLDS
Presence of GSS *Presence of globally significant species or species assemblages.*	5 4 3 2 1	>10 species 5-10 species 2-4 species 1 species Absent
Survival of GSS *Contribution to the survival of a globally significant species (e.g. breeding areas).*	5 4 3 2 1	Present in significant numbers Present in moderate numbers Present in low numbers Present in very low numbers Absent
Cumulative value *Cumulative value for globally significant species*	5 4 3 2 1	Very high High Moderate Low Very low
Habitats and Diversity *The site contains specific habitats that distinguish it from the surrounding areas and should contain enough fauna and flora species to give it a unique status.*	5 4 3 2 1	Very high High Moderate Low Very low
Naturalness *The degree of human impact on the area.*	5 4 3 2 1	Very low Low Moderate High Very high
Fragility *The site contains sensitive species and habitats, easily affected by human impacts.*	5 4 3 2 1	Very high High Moderate Low Very low
Typicality *The site contains a large number of species and habitats that make the site typical for its ecosystem(s).*	5 4 3 2 1	Very high High Moderate Low Very low
Landscape *The amount of intrinsic appeal (natural or special natural features).*	5 4 3 2 1	Very high High Moderate Low Very low

Viability score

CRITERIA	SCORE	THRESHOLDS
Size	5 4 3 2 1	>750 km² 501-750 km² 251-500 km² 51-250 km² <51 km²
Threats *The amount of pressure facing a site due to human activities and development in general.*	5 4 3 2 1	Very low Low Moderate High Very high
Land use *Land use ongoing in the area by local people or by agencies with project in the area.*	5 4 3 2 1	Very amenable to conservation Amenable to conservation Moderately amenable to conservation Marginally amenable to conservation Not amenable to conservation
Threats *The site contains a high amount of threat that is due to human pressures.*	3 2 1	Low Moderate High
Land use *The different uses taking place in the site by the local people and different institutes that have any projects in the site.*	3 2 1	Low Moderate High
Accessibility *Easiness of the site to access. (determined by location, roads, military presence, etc..)*	3 2 1	High Moderate Low
Recorded natural history *The intensity of study and research in the past to the site.*	3 2 1	High Moderate Low
Educational potential *The potential of the area to be an educational area for students and interested people in conservation.*	3 2 1	High Moderate Low
Tourism potential *The potential of the area in becoming a tourist attraction area.*	3 2 1	High Moderate Low
Management ease *The feasibility of the area for management.*	3 2 1	High Moderate Low