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**Jordan Parks Policy Project
Final Report**

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July 1996

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TABLE OF CONTENTS

	<u>Page</u>
ACRONYMS	i
SUMMARY OF ACTIVITIES	iii
SECTION I	KEY FINDINGS AND RECOMMENDATIONS FOR ESTABLISHMENT OF A JORDAN PROTECTED AREA SYSTEM I-1
	A. Support for a Protected Area System I-1
	B. Designation Criteria I-1
	C. Protected Area Policy I-2
	D. Options for Jordan Protected Area Management I-4
SECTION II	JORDAN PROTECTED AREA POLICY FRAMEWORK II-1
	A. Introduction II-1
	B. Assumptions II-1
	C. Mandate for Jordan Protected Areas II-2
	D. Policy Objectives II-2
	E. Policies for Jordan Protected Areas II-2
SECTION III	DESIGNATION CRITERIA: SELECTING AREAS FOR A JORDAN PROTECTED AREA SYSTEM III-1
	A. Selecting an Area for Designation As a Jordan Protected Area III-1
	B. Significant Natural Resources IV-1
	C. Significant Cultural Resources III-2
	D. Significant Archaeological Resources III-3
SECTION IV	RANGE OF PARKS AND PROTECTED AREA CATEGORIES IV-1
SECTION V	ANALYSIS OF MANAGEMENT OPTIONS FOR A JORDAN PROTECTED AREA SYSTEM V-1
	A. Criteria for Assessment of Management Options V-1
	B. Option 1: Status Quo, with Policy Agreement V-2
	C. Option 2: A New Organization for the JPA System V-4
	D. Option 3: Three Separate Units under an Umbrella Organization V-4
	E. Option 4: Private Sector Operations V-6
	F. Option 5: Private Non-profit Trust V-6
	G. Option 6: Ad Hoc Council of Existing Managers V-6
	H. New Cultural Resources Unit V-7
SECTION VI	REPORT ON JORDAN PARKS POLICY WORKSHOP VI-1
	A. Workshop Evaluation VI-1
	B. Welcome, Introductions, Short Team Presentations, and Consultant Remarks VI-1

TABLE OF CONTENTS
(continued)

	<u>Page</u>
C. Protected Area Concept and Designation Criteria	VI-1
D. Policies for JPA System	VI-2
E. Organizational Management Options	VI-2
F. Follow-Up Action Plan, Ministry of Planning	VI-2
SECTION VII TEAM POLICY PAPERS	VII-1
Natural Resources and Protected Area Policy Paper	VII-1
Rural Cultural Landscapes Policy Paper	VII-31
Recreation Areas and Historic City Centres Policy Paper	VII-51
Archaeology Policy Paper	VII-73
ANNEX A TEAM ISSUE PAPERS	
A1. BIODIVERSITY ISSUES PAPER	
A2. LAND USE PLANNING ISSUES PAPER	
A3. NATURAL RESOURCES AND PROTECTED AREAS: ISSUES PAPER	
A4. RECREATION AREAS: ISSUE PAPER	
ANNEX B AGENDA FOR JORDAN PARKS POLICY WORKSHOP	
ANNEX C ATTENDEES AT JORDAN PARKS POLICY WORKSHOP	
ANNEX D RESULTS OF NOMINAL GROUP SESSIONS ON DESIGNATION CRITERIA	

ACRONYMS

ARA	Aqaba Region Authority
CEP	Council for Environmental Protection
DOA	Department of Antiquities
GAM	Greater Amman Municipality
GCEP	General Corporation for Environmental Protection
GIS	Geographic Information System
HRD	Human Resources Development
IUCN	International Union for the Conservation of Nature
JPA	Jordan Protected Areas
JPP	Jordan Park Policy
JVA	Jordan Valley Authority
MMRAE	Ministry of Municipal and Rural Affairs and the Environment
MOA	Ministry of Agriculture
MOP	Ministry of Planning
MOTA	Ministry of Tourism and Antiquities
MWI	Ministry of Water and Irrigation
NGO	Nongovernmental Organization
PA	Protected Area
RSCN	Royal Society for the Conservation of Nature
USAID	U.S. Agency for International Development

SUMMARY OF ACTIVITIES

This short report highlights activities of the two consultants, Barbara Koth and Jack Morehead, on PRIDE delivery order # 17, dated April 9, 1996. The scope of work for the delivery order states that "the objective of this activity is to assist the Ministry of Planning (MOP) of Jordan to synthesize policy issues relating to a Jordan park policy and to formulate a strategy for an integrated park management system. This activity involves both the presentation of cultural and environmental resources and the sustainable management of important resources for touristic purposes."

In the first phase, Team Leader/Parks Policy Specialist Barbara Koth arrived in Jordan on April 14 to hire Jordanian team members. When the original candidate pool was found to be unacceptable, the consultant expanded the search. She interviewed nine individuals and selected a team of six experts in biodiversity, natural resources, land use planning, recreation, and environmental law, as well as a team coordinator. Specifications for the scope of work responsibilities, including the preparation of papers and workshop involvement, were prepared and contracts signed. At a final USAID debriefing, on April 20 prior to Ms. Koth's departure, a commitment was made to begin work on the assignment, with coordination through Chemonics' Washington, D.C., office.

Over the next two and a half weeks, Jordanian team members wrote issue papers (see Annex A) documenting baseline conditions for the specialty areas. These papers analyze strengths, weaknesses, opportunities, and threats to the specific resource base under each area's current management. This information was shared among the team and became the basis for individual policy papers (see Section VII). The policy papers highlight recommendations for protecting significant natural resources, archaeological sites, and cultural assets in Jordan. The policy papers were the starting point for the policy integration by Koth and Morehead.

On May 16, Parks Management Specialist Jack Morehead met with various Chemonics officials in Washington for a briefing on the project and schedule. Koth and Morehead arrived in Jordan on the weekend of May 18-19 to begin the second and final phase of the assignment. They first met with Dr. Lenzen and Carl Dutto of USAID, and received most of the required issue and policy papers from the Jordanian team.

The first week was spent primarily in team and individual meetings to revise the draft papers. The only problem encountered was the quality of the legal paper and the lack of participation by the legal expert; by mutual consent, this individual's association with the activity was terminated. On May 22, the consultants met with officials from the Ministry of Planning to begin planning the workshop for official review of the policy statements. During the second week, the team's time was divided between MOP meetings on the workshop agenda, preparation of initial drafts of the policy and other deliverables, review, and rehearsals for the workshop presentations.

The workshop was held on June 1-2, with 25 attendees (see Section V). For the remainder of the contract, consultants incorporated the workshop comments into the final report, with a final debriefing at USAID on June 4.

SECTION I
KEY FINDINGS AND RECOMMENDATIONS FOR
ESTABLISHMENT OF A JORDAN PROTECTED AREA SYSTEM

The Hashemite Kingdom of Jordan is well-known for its archeological, cultural, and environmental resources. Since the 1930s, international attention has focused on the estimated half million archeological sites in Jordan dating from the earliest human settlements to the Roman provincial cities of the second century. There are also numerous sites of historical and cultural significance dating from later periods. With regard to environmental resources, Jordan has identified 12 significant natural areas to date, 6 of which are currently managed by the Royal Society for the Conservation of Nature as functioning nature preserves. Furthermore, the Kingdom has a number of recreational areas and touring trails that afford leisure opportunities to urban dwellers and other visitors. These cultural and natural resources provide substantial economic benefit and recreational enjoyment to the public.

To ensure the continued sustainable use of these resources, the Government of Jordan has recognized the need to improve the management of protected areas. At the moment, protected areas are managed by several different ministries and agencies. While many of these entities have established track records managing cultural and natural areas, there is concern that certain valuable resources will not be adequately protected, or even identified, without a national policy for protected areas and improved planning. In the absence of adequate management, popular areas may suffer from congestion, overuse, and physical deterioration. Unidentified areas may be lost to modern development or human encroachment.

The purpose of this report is to assist the Ministry of Planning of Jordan by identifying important park policy issues and by providing recommendations for a protected area policy and integrated management system. Ultimately, this system should serve to protect the Jordanian cultural heritage, preserve biological diversity, increase public awareness of cultural and natural resources, and enhance the recognition of these resources as valuable national assets. This report describes Jordanian support for a protected area system and suggests designation criteria for identification of significant areas. It also proposes broad policies to guide decision-making in regard to protected areas and outlines options for protected area management.

A. Support for a Protected Area System

There is consensus within the Government of Jordan that there is a need to improve the management of protected areas. There is, at the same time, widespread support for creating a more unified coordinating mechanism, without undercutting the role of numerous organizations with field responsibilities and established track records.

For many Jordanians, the term "park" implies leisure, recreation, and play, and refers to such facilities as luna parks, which are amusement parks for children, or picnic areas at the edge of the Amman municipality officially gazetted as national parks. A park may not be thought of as a natural resource setting where responsible activities are mandated. For that reason, the term "protected areas" was chosen to refer to the broad range of reserves and parks that exist in Jordan. Workshop participants and other stakeholders generally supported the notion of a protected areas system once definitions were clarified. The consultants recommended the following measures:

- At least three types of protected areas should be added to the current spectrum of protected areas: historic city centers, archeological parks, and national landmarks and other significant cultural resources. Such action entails simultaneous legislative action, human resource development, and institution building.
- Operational philosophies and agreement on management tools and allowable activities must be clarified for each protected area category, especially for natural resource units. The consultants suggested that these agreed-upon actions move toward international standards and be formalized in new regulations and guidelines.
- The Government of Jordan needs to standardize use of protected area titles, such as park, national park, reserve, landmark, and so forth.

The team's issue and policy papers (in Annex A and Section VII, respectively) referred to existing categories of protected areas and suggested additional categories. The objective is to improve management by grouping together those units that consistently provide a certain package of resource and user benefits. To that end, the team prepared a matrix, "Illustration of the Range of Parks and Protected Area Categories" (see Section IV) to include parks and protected areas that range from intensely used, urban neighborhood parks managed by municipalities, to strict nature reserves where natural processes dominate. This matrix includes all the units currently in operation in Jordan, adds certain categories, and suggests a range of protected areas for a kingdom-wide system. It is not prescriptive, but illustrates the breadth that a JPA might encompass.

For natural resource areas, the consultants compared on-the-ground operations with internationally accepted definitions, as put forth by the International Union for the Conservation of Nature. Following international definitions will help attract donor support and promote the use of common terms in the profession. In Jordan at present, the areas ostensibly managed by the Royal Society for the Conservation of Nature as Nature Reserves are in practice managed as national parks (e.g., Dana) or wildlife reserves (e.g., Shaumari); there are few protected wilderness areas where there is complete protection and little human impact. Nor does the Ministry of Agriculture appear to consider grazing reserves and forests as part of the continuum of protected areas.

For archaeological resources, there was an attempt to differentiate between the 4,000 antiquities sites already protected under the Antiquities Law, from the newly proposed, poorly defined category of archaeological parks. The gap in protection of post-1700 C.E. cultural resources was addressed by recommending the establishment of historic city centers and national landmarks/significant cultural resources.

As previously mentioned, titles and the terms used to designate protected areas currently used in Jordan are confusing. For example, Amman and Ghamdan National Parks are forested picnic areas (with serious litter problems and media advertisements for intensive private sector development) managed by the Amman municipality, belying their designation as significant natural resources deserving protection. The definition and relevance of terms such as national park, park, reserve, and landmark must be agreed upon as part of the process for establishment of protected areas.

B. Designation Criteria

After substantive and legal review, concurrent with efforts to establish a management structure, designation criteria can be applied to existing protected areas to lay the groundwork for an initial Jordan Protected Areas (JPA) system, urgently needed by the country. The JPA designation criteria presented in Section III can be refined by feedback and review once the umbrella policy is adopted by the Council of Ministers. The assumption in using the designation criteria is that the different resource types that would be represented in a JPA system carry equal weight and importance. The JPA system is not biased in favor of adding new natural resource areas rather than archaeological parks or vice versa; however, formal criteria are a means of ensuring that the best examples of Jordan's assets are in protected status. Applying selection criteria to units currently under resource management, designating them as protected areas under a protected areas system, would create the building blocks of a comprehensive JPA system even before management structure changes take place.

C. Protected Area Policy

- Draft policies, which have received initial acceptance by professionals in relevant fields, should be circulated for wider review to other levels of government, Jordanian citizens, and nongovernmental organizations.

The team's policy proposals are designed to serve as guidelines for decision making. The policy document (Section II) includes the following elements: the philosophy of the JPA system; a statement of the objective-driven policies for resource protection and sustainability, environmental benefits, economic returns, community involvement, coordinating mechanisms, the role of research and information, and visitor management strategies, and operational and management concerns. The JPA general policy document requires wider comment and review.

In addition to the broad policies applying to all protected areas, policies specific to each resource type are also needed. Because policy is often multi-tiered, the next step would be to prepare policy statements that address natural resources, archaeology, and cultural heritage issues. For example, the following policies for natural resource JPAs might be considered:

- Conservation of biological diversity, including species and habitat richness, representativeness, and scarcity, is a key principle in operation and management of natural resource protected areas (PAs). As such, preparation of a biodiversity strategy as part of JPA policy is imperative.
- A basic inventory of species representation and resources should be conducted.
- A primary distinction between natural resource protected areas relates to level of resource exploitation and extraction. Policies that control the sustainable use of renewable resources such as grazing, timber harvest, and agriculture, and the harvest of nonrenewable resources such as minerals are fundamentally different from policies that do not allow for consumption of the resource. JPA system policy should continue to reflect these key distinctions, regardless of authority.
- Sustaining viable wildlife populations or the re-introduction of animal species should be done through habitat improvement. A zoo-like atmosphere of pens and feeding of animals should be avoided.

- In those cases in which a resource has been exploited inside the PA boundary, substitutes outside the PA should be developed to the extent possible. This may require the involvement of management in community development initiatives to encourage conservation.
- Habitat rehabilitation and re-introduction of indigenous flora and fauna are the responsibility of natural resource managers. Exotic species, on the other hand, must be strictly controlled.

The above policy statements, which are not comprehensive, are for illustrative purposes only. A process similar to that used to develop the overall policy could be implemented for each resource category. For example, where archaeological sites are the core resource, policies might include:

- Archaeological parks can be thought of, from a management perspective, as enhanced antiquities sites. These units in the PA system would be large enough to accommodate significant visitation or include upgrades facilitating interpretation.
- Following designation as a JPA, a strategic plan will be developed for the *in situ* archaeological remains and the objects to be excavated. This plan will include how movable and immovable remains will be conserved or preserved; the housing of movable remains in on-site, regional, or national museums; future excavations; the presentation of information to the public; the presentation of information to the academic community; the identification of necessary resources, including expertise and financing; and a master plan for site visitation. Visitors to a new JPA unit will be strictly limited or not allowed prior to the implementation of the strategic plan.
- An environmental audit or inventory will be conducted for each designated archaeological JPA to determine the relation of the area to biodiversity issues. Such considerations will be factored into the implementation of site's carrying capacity.
- Where restoration and stabilization is performed at an archaeological JPA, care should be taken to avoid presenting the replication or restoration as original. Through signs or other interpretive techniques, artifacts should be designated as original or reproduced.
- A buffer zone should be created around the stabilized remains at the site, the extent determined by viewscales, land tenure in the surrounding area, and entrance and egress issues.

The cultural resource concept is a new one, a fact that is evident in the lack of existing policies from other locales governing these areas. The following are possible areas for consideration.

- Designation as an official cultural resource PA implies the authority to confer or withhold planning permits for modifications or refurbishment of privately owned buildings to project its original character, as well as site development plans for municipalities. However, such restrictions could be offset by a policy of

encouraging parallel tourism development or compatible private sector investment to create a thriving business area.

- On-the-ground management of cultural resources can be a national-local level partnership, insofar as capacities can be enhanced at the municipal level. Management authority can be delegated to local government for maintenance and non-technical staffing, whereas national-level responsibility for preservation methods and operating standards should be maintained.
- Zoning tools used at cultural sites can include pedestrian-only areas and urban landscaping.
- Over time, the JPA at the national and individual site levels will develop expertise to provide technical assistance for private owners and municipalities. In the first instance, owners could receive tax exemptions and financial aid for restoration, whereas municipalities would get assistance planning in cultural resource use.

It is important that this stage of policy drafting for distinct resource categories follow review of overall protected areas policies.

D. Options for Jordan Protected Area Management

- An immediate step in streamlining protected areas management is to request the Council of Ministers to approve protected areas policy.
- A long-term management recommendation is that the General Corporation for Environmental Protection (GCEP) undertake a coordinating role or establish a private, not-for-profit trust. While both options need further legal review, the first requires a legal change to expand GCEP's authority to include representatives of archaeological and cultural resources on a coordinating council or authority.
- A new unit for cultural resource conservation must be established for the protection of Jordanian heritage for the post-1700 C.E. period.

"Analysis of Protected Areas Organizational Options" (see Section V) discusses various management options. Rather than recommending a preferred organizational structure, the analysis describes the various organizational structures that may be appropriate at different times and stages in the development of a JPA system. Ability to coordinate numerous field units is a key criterion, as is the creation of a unit to manage cultural resources, a serious gap in the current system.

SECTION II

JORDAN PROTECTED AREA POLICY FRAMEWORK

A. Introduction

Jordan has diverse natural and cultural resources of national, even global, importance. These resources represent the richness and beauty of Jordanian history and culture, and are an important part of Jordan's heritage. The identification of these resources, their protection, and sustainable use presents many opportunities and challenges. Policies for the creation of a Jordan Protected Area (JPA) system, developed interactively with the government, private groups, and other stakeholders, will evolve over time, as conditions change.

The principles for the protection of natural and cultural resources include the following:

- Natural and cultural resources are important environmental and socio-economic assets, and their protection is of the highest national priority.
- Conservation of the natural heritage and perpetuation of biological diversity as part of a global biodiversity strategy are essential.
- Protection of cultural heritage of a country is critical.
- Natural and cultural resource management must be undertaken in the context of regional, national, and global conditions and influences.
- Any program to conserve natural and cultural resources must include local people, incorporate the knowledge, ideas, and opinions of area residents, and provide for the integration of their lifestyles into area designation and operations.
- It is critically important to educate citizens about the natural and cultural resources of Jordan, so that society can understand, appreciate, and benefit from them, and undertake actions to support resource protection.

B. Assumptions

The following assumptions underlie the establishment of a JPA system:

- Environment is defined to include natural, archaeological, and cultural resources, both tangible and intangible, including the people and their surroundings.
- The human resources required to manage JPAs require a national commitment on the part of the public and private sectors to invest in training, professional exchanges, and incentives to support performance excellence.
- Implementation of kingdom-wide integrated land-use planning is needed to control external factors adversely affecting JPAs, such as urbanization, agricultural expansion, over-extraction of water, air pollution, and so forth.

- The JPA system will cooperate with and complement ongoing, kingdom-wide multi-media campaigns to increase citizen environmental awareness and education about resource issues and create a sense of environmental appreciation and responsibility.

C. Mandate for Jordan Protected Areas

The fundamental mandate of the JPA system is to conserve, protect, perpetuate, and interpret Jordan's significant natural, archaeological, cultural, and recreational resources. Given that recreation can occur across the full spectrum of protected areas, three broad categories of JPAs, based on dominant resource attributes, can be identified. These categories are natural, archaeological, and cultural resources. Other JPAs can be further defined based on site characteristics and use patterns. Regardless of the eventual classification of JPAs, the underlying philosophy is to consistently manage units that provide a certain package of resource and user benefits.

D. Policy Objectives

Policy statements provide a standard set of guidelines for decision-making about management. The following JPA policies are designed to support the following goals: critical resource protection and sustainability of use; long-term environmental benefits via increased public environmental awareness; significant economic returns to Jordan, the local community, and traditional users; effective institutional and legal arrangements that coordinate resource management; management and decision-making based on valid information, research, and data; and the protection of resource quality and on-site experience through controlled visitation.

E. Policies for Jordan Protected Areas

When an area is designated as a Jordan Protected Area, the following broad policies will be applied in addition to existing specific mandates for the area. It is important that high priority be consistently placed on protecting the integrity of the resource for which the area was initially established.

These policies, as adopted, will ensure that each category of protected area will be managed under similar directives and mandates, with overarching policies for the three main resource types, rather than as separate, isolated units. Final coordination among the JPAs depends on the final management option chosen.

E1. Fundamental JPA Policies

JPAs will conserve the natural, cultural, archaeological, and scenic resources of the kingdom, while leaving them unimpaired for use and enjoyment by future generations. Visitor use, scientific study, education, and public enjoyment should all be encouraged, but only in such a manner that will not adversely affect the resource.

JPAs will be designated through a process of evaluation using the "Selecting Areas for a JPA System Criteria." An approved set of formal criteria will be applied during the designation process to assess significance. Additions to the JPA system will be strategic, and the system will expand in conjunction with the availability of staff and financial resources to meet protection and operating requirements.

The system should represent a full spectrum of significant Jordanian flora and fauna species, ecosystems, and natural habitats, as well as sites of important archaeological and cultural interest, and artifacts from important events in history. Proper selection of areas designated as JPAs will produce a nation-wide system of representative sites, with priority given to the finest examples of the nation's natural resources (geologic, scenic, flora, and fauna), outstanding archaeological artifacts, and sites illustrating or commemorating the most significant events in Jordan's history.

Most JPAs will protect more than one type of resource—for example, a natural area may contain archaeological features, and an archaeological or cultural area may provide habitat for native flora and fauna. Management for JPAs will be organized to reflect responsibilities. If the resource will be adversely affected by certain extractive activities—water removal, mining, grazing, and controlled hunting are examples—such uses should be controlled or prohibited. Where visitor use and outdoor recreation activities are allowed within the JPA system, special care must be taken that natural, archaeological, or cultural features are not substantially disturbed or artificiality introduced to the scene. Recreation and leisure are appropriate activities across most of the JPA categories, but major resource modification or impact are normally not appropriate in a JPA.

JPAs will normally be established through an agreed-upon national strategy based on approved criteria, incorporating where possible existing protected areas, whether public or private. Where this is not the case, existing expropriation laws may apply. In cases in which public land ownership is not imperative, a variety of compensation tools are available. For new JPA areas, displacement of resident inhabitants is an option only in cases involving extreme resource degradation.

Since the successful protection of significant resources and the quality of visitor experience do not stop at JPA boundaries, decisions regarding JPAs should make maximum use of land use management tools, such as clearly defined buffer zones, to protect the resource integrity on-site and in adjacent areas.

E2. Policy Category: Resource Protection and Sustainability

Minimum modification of resources and the protection of natural sites in their pristine state should be constant goals. Human intervention, including construction, is appropriate only to further resource management objectives and enhance user experience. Uses that impact JPA resources, such as development and intense use, will be monitored and controlled to protect area integrity. Each JPA management authority will develop carrying capacity specifications or use limits to ensure resource protection.

Each JPA management authority will ensure the strong monitoring and enforcement of laws, regulations, and instructions protecting the area, either through direct action or through coordination with other agencies. Where tourism is a primary JPA use, the site should be managed under ecotourism principles, defined as responsible visitation to a protected area to conserve the environment and improve the welfare of local people.

As distractions such as development, services, buildings, and intensive use may lower the quality of the visitor experience, such facilities should normally be moved away from the core resource. Particular attention should also be given to protecting scenic views.

E3. Policy Category: Environmental Benefits and Awareness

JPAs should produce long-term environmental benefits for Jordan. The protection of resources such as water and air quality, soil, biodiversity, and cultural heritage should always be considered in making decisions on JPA uses. Establishing JPAs will demonstrate a commitment to increasing environmental awareness within the Jordanian population. This commitment can be supported through national campaigns and on-site interpretive facilities such as museums and trails, as well as interpretive and volunteer programs and educational field centers.

E4. Policy Category: Optimize Economic Benefits

Private sector investment should be encouraged to the greatest extent possible to defray the costs of operating the JPAs. Priority will be given to local resident participation and business opportunities. Private sector for-profit operators, providing services including limited food service, tour guides, and sale of arts/crafts, may play a role within the JPA, but only if JPA management can ensure that activities do not negatively impact the resource base or user experience.

A proportion of JPA entrance and service fees such as concessionaire licenses and fees should be returned to the JPA to support protection, interpretation, development, and maintenance. This re-investment is key to proper operations and future expansion. While JPA revenues from entrance and concessionaire fees should be maximized, high costs should not be allowed to inhibit visitor use of the area. Revenues from more profitable JPAs can help support less profitable but equally important JPAs.

JPAs should consider multi-tiered entrance fees that set varying charges for school children, local residents, Jordanians, and foreign visitors. Entrance fees should generally reflect operational costs, but more popular protected areas can be priced higher to distribute use to lesser-used areas. The tourism industry, which should be treated as a close partner in meeting protection objectives, must be required to operate according to carefully defined guidelines.

Visitation should be optimized at levels that are sustainable within carrying capacity limits through proper advertising, marketing, and information sharing techniques.

E5. Policy Category: Socioeconomic and Community Participation

The process for JPA nomination, designation, establishment, and operation should be participatory and transparent. Local citizens should be consulted and their input used to the greatest extent possible. JPAs will safeguard and promote the rights of local citizens to control their own economic and cultural development in a manner that leaves existing resources intact. As part of this effort, priority should be placed on the creation and expansion of job opportunities in local areas near the JPAs.

Community understanding and appreciation of the significance of protected resources will be a major goal of every JPA. JPA managers should make an effort to inform, educate, and gain the agreement of the local residents on the significance of the resource being protected. School programs and other educational opportunities are especially effective means of achieving this goal. Local management of JPAs can be catalysts for development and should operate in partnership with government, NGO, and donor initiatives for community and economic revitalization.

E6. Policy Category: Coordination between Institutions/Agencies

JPAs will be managed in accordance with all applicable international treaties and conventions to which Jordan is a signatory.

The JPA lead management agency will ensure coordination among organizations with jurisdiction or responsibilities within a JPA. JPAs will incorporate the mandates and goals of other organizations in making decisions concerning preservation, use, development, and adverse impacts on other affected resources that are not within the primary set of responsibilities involving the significant resource for which the JPA was established.

E7. Policy Category: Research and Information

As a basis for management decision-making, JPAs will work toward establishing standards, comprehensive inventory systems, and baseline data, such as geographic information systems and the National Register of Historic Places. All JPAs should provide for research and field investigations. Monitoring of on-site conditions should be conducted through application of a standard set of indicators to determine resource status. When research is conducted, it will be monitored to determine progress and productivity. Universities, institutes, and research organizations can all serve as partners in information provision.

Each JPA must develop a means to make appropriate inventory and research information available to interested parties. Each JPA should have its own inventory and database readily available at the local level, but a centralized data repository should be considered when the information is of widespread relevance or cannot be adequately managed or updated in the individual JPA.

E8. Policy Category: JPA Management and Operations

Environmental impact assessments are required before designation of a new JPA, and environmental audits will be conducted for existing protected units that become part of the JPA system. Likewise, a management plan will be prepared for each JPA. A standard set of operating manuals and procedures will also be developed to assist JPA managers in planning, setting priorities, and making decisions. In addition to traditional operations, JPA staffing must reflect a commitment to resource monitoring, environmental education, and research. A system to make research and inventory information available to scholars, researchers, and the public via disks, CDS, or on-line should be an integral part of the JPA system.

Zoning for various uses within JPAs is necessary. An inner zone of maximum protection should surround the core area of significant resources. More permissive policies regarding appropriate use, and commercial activities could surround the maximum protection area. When adverse impacts are encroaching from outside a JPA, the physical boundaries should be clearly marked. Unobtrusive fencing or other physical barriers should be provided when necessary.

To minimize the effects of uses adjacent to JPAs on resources or visitor experience, integrated land use planning and buffer zones should be used. Buffer zone requirements vary between sites, and are determined by the resources' unique requirements. The boundaries of buffer zones will be determined by terrain, landscape, noise impact, and scenic views, rather than an inflexible common standard. Within buffer zones, specifications regarding siting and

construction type (for example, for roads or buildings) may be set. The agency responsible for JPA management will cooperate with all appropriate agencies and entities to achieve this result.

Within the boundaries of a JPA, physical development, such as trails, picnic areas, and buildings, will be limited to those facilities necessary to serve immediate visitor needs, and should be carefully located, designed, and constructed to be compatible with the natural or cultural features of the JPA.

Roads, parking, and management of vehicular traffic will be carefully planned and coordinated to avoid adverse impacts on the JPA. Coordination with other responsible agencies and the local community is required. At all times, care should be taken to locate roads and parking to balance the need to provide reasonable access and, at the same time, not interfere with the natural or original condition of the resource. In most cases, driving and parking in close proximity to the core resource will not be possible.

In all but the largest JPAs, overnight visitor accommodations will not be provided within the boundaries; if located in near proximity, hotels should be encouraged to locate in areas that do not adversely affect JPA scenic views. In the largest JPAs, where space is available, visitor accommodations should be carefully planned to protect the resources of the area. Small-scale lodging and guesthouses that use architecturally sensitive design concepts should be the standard for development.

The implementation of creative, user-friendly pricing policies should be considered. Such policies might include a tourist pass allowing multiple visits within a set period for international visitors, and an annual pass for Jordanians.

JPA management should initiate programs to instruct tour guides and service providers as to the significance and purpose of the areas resources. Proper introduction and explanation by these individuals will be a high priority responsibility. Whenever possible, the management of JPAs should provide technical assistance and advice to individuals, organizations, or agencies whose activities could affect protected resources or the user experience. Such assistance should be provided both within and outside the boundaries of the JPA.

SECTION III
DESIGNATION CRITERIA: SELECTING AREAS FOR A
JORDAN PROTECTED AREA SYSTEM

Currently, various government, NGO, and private agencies and organizations are responsible for a broad range of activities to protect natural, archaeological, and cultural resources and provide public education and recreation. Some of these areas are more significant than others. The designation "Jordan Protected Area" is being considered to identify those areas that are unique or have outstanding national significance. All areas designated as JPAs would adopt a set of agreed-upon, inclusive polices in addition to already existing agency mandates, to ensure consistent operation.

Designating an existing area as part of the JPA system does not change the area's use or change its current management. The designation serves as formal recognition that the area is a premier example in Jordan of a particular resource. Areas not designated as JPAs are not affected by this proposal. All the existing parks—including municipal, regional, and national parks, historic city centers, antiquities sites, archaeological parks, protected cultural and national landmarks and landscapes, preserves, reserves, forests, and study areas—will continue to play an important role in the country's life. The JPA designation will identify the most nationally significant areas in Jordan's overall system of protected areas and, as such, will provide national and international recognition for these areas.

A. Selecting an Area for Designation As a Jordan Protected Area

To be eligible for consideration as a JPA, an area must possess nationally representative, significant, or unique natural, archaeological, or cultural resources and must also be a feasible and reasonable addition to the system.

The following criteria ensure that the areas selected for designation as JPAs truly represent outstanding examples of Jordan's natural, archaeological, and cultural resources. A natural, archaeological, or cultural resource will be considered nationally significant only if it meets all of the following criteria:

- It is an outstanding example of a particular type of resource that is representative of, or significant to, Jordan.
- It retains a high degree of integrity as an accurate and exemplary representation of a representative, significant, or unique resource.
- It has exceptional value for illustrating important natural, archaeological, or cultural themes of Jordan's heritage.
- It offers well-identified opportunities for public use and enjoyment, education, or scientific research.

B. Significant Natural Resources

Natural resources may include scenery, geology or terrain, fossil remains, water, air, flora, and fauna. Nationally significant natural resources include:

- An outstanding site with landform or biotic characteristics representative of Jordan
- A site with a concentrated population of a significant native plant or animal species
- A site containing a landform, or a native plant or animal species unusual or rare in Jordan
- A refuge necessary for the continued survival of an existing native plant or animal species, especially if the species is endangered by development
- A site that allows the reintroduction of a formally endemic species
- A site possessing exceptional diversity of ecological components or geological features
- A site containing rare or unusually abundant fossil deposits
- An area with outstanding scenic qualities or other special landscape features

Criteria to be considered when selecting an area for designation as a JPA include:

- Education and research potential
- Integrity and naturalness
- Rarity, unusual biodiversity or extent to which the area represents native ecosystems
- Degree of threat to the resource; and the fragility of the ecosystem
- Adequate size of area for protection of the identified resource, or potential for protective land use planning or buffer zoning
- Cultural heritage, use-of the area by local people, and social and economic impact
- Potential for conservation and tourism
- Potential for refuge or other use by migratory species
- Regional and strategic significance
- Anticipated costs and benefits

C. Significant Cultural Resources

Significant cultural resources as defined do not include archaeological remains, either antiquities sites or archaeological parks. In Jordan, such remains are defined by the Antiquities Law as those areas, sites, buildings, structures, and objects within Jordan that represent the history of the area between A.D. 1700 (1111/1112 A.H.) to 1946, and 1946 (Declaration of the Kingdom) to present.

Cultural resources of national significance could include resources that are:

- Associated with important events in the history of Jordan, from which an appreciation of Jordanian history and culture may be gained
- Associated with the lives of significant people in either period
- Representative of a great ideal common to the Jordanian people
- Embodying the distinguishing characteristics of an architectural style from these two periods
- Representative of integral parts of the environment that commemorate or illustrate an endangered way of life or culture
- Associated with a cultural pattern or lifestyle endangered by development

Areas such as cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from original locations, reconstructed historic buildings, and properties that have achieved significance within the past 100 years would be considered appropriate for addition to the JPA system if they have transcendent historical or cultural, importance or possess architectural or artistic significance, especially if no other associated site remains.

Criteria to be considered when selecting a JPA site include:

- The intrinsic value of the resource and its recognized international value
- Historical value of the site and its significance in local culture
- Cultural heritage of the area, use by local people, and the impact of the site on local social welfare
- Education and research potential of the area
- Threats to the integrity of the site
- Economic impact of the site, especially on local people
- Potential for conservation and tourism
- Anticipated costs and benefits

D. Significant Archaeological Resources

Antiquities sites in Jordan are already protected by law. When such sites are designated JPAs, they automatically change from an antiquities site to an archeological park. According to the Antiquities Law, archaeological remains include:

- Any object, whether movable or immovable, that has been constructed, shaped, inscribed, erected, excavated, or otherwise produced or modified by humankind earlier than the year C.E. 1700
- Any object, movable or immovable, subsequent to the year C.E. 1700, which the minister may declare to be antique by order published in the Official Gazette
- Human, plant, and animal remains going back to a date earlier than the year C.E. 600

Archaeological resources of national significance include those that:

- Illustrate a significant period in archaeology within the boundaries of Jordan
- Represent rare archaeological resources, including caves, sculpture, coins, pottery, manuscripts, and artifacts from the development of previous cultures
- Represent a particularly significant event, either natural or human, in archaeology
- Serve as outstanding examples of Jordan's social history, including material culture remains, such as architecture

Criteria to be considered when selecting a site for designation as a JPA include:

- The degree the site represents Jordan's diverse history
- The uniqueness of the site
- Geographic location and accessibility of the site
- Size of the area
- Integrity of the site, especially within an urban context
- Degree of urbanization or industrialization
- Combination of cultural, and natural significance, including local cultural significance
- Potential for conservation and tourism
- Economic impact, especially on the local people
- Anticipated costs and benefits

ILLUSTRATION OF THE RANGE OF PARKS AND PROTECTED AREA CATEGORIES

Features/ characteris- tics	Neigh- borhood parks	Municipal / regional parks	Antiquities sites	Historic city centers	Archaeo- logical parks	Significant cultural areas/ national landmarks	Sustain- able use area	Nature Park	Strict nature Conservation Reserve wilderness/ science
IUCN Category						Some V	VI	II	Ia, Ib
Setting	Urban	Either	Either	Urban	Either	Rural	Rural	Rural	Rural
Key feature	Natural	Natural	Archaeo- logical	Cultural	Archaeo- logical	Cultural	Natural	Natural	Natural
Size	Small	Medium	As required	Area	Medium- large	As required	Large	Large	Large
Balance protection and use	Use	Use	Protection	Use	Protection	Use	Use	Protection	Protection
Dominant use	Recrea- tion	Recreation	Visitation	Recreation , commer- cial	Visitation	Visitation/ Recreation	Consump- tion of renewable resources	Visitation	Science/ existence value
Mining allowed	N.A.	No	No	N.A.	No	No	Under strict guidelines	No	No
Appropriate recreation	Most, incl. high intensity	Many, incl. active outdoor recreation	Appreciativ e	Leisure	Appreciative	Apprecia- tive	Most, plus hunting	Non- consumptive, low-density	Appreciative, if allowed
Importance of interpreta- tion and education	Low	Medium	High	High	High	High	Medium	High	Very high
International tourist demand	Low	Low	Varies	High	High	Medium	Low	High	High, if allowed
Carrying capacity	High	High/ medium	Medium	High	Medium	Medium	Medium	Low/medium	Low

SECTION IV
RANGE OF PARKS AND PROTECTED AREA CATEGORIES

IV-1

24

ILLUSTRATION OF THE RANGE OF PARKS AND PROTECTED AREA CATEGORIES (continued)

Features/ characteristics	Neighborhood parks	Municipal / regional parks	Antiquities sites	Historic city centers	Archaeo- logical parks	Significant cultural areas/ national landmarks	Sustain- able use area	Nature Park	Strict nature Conservation Reserve wilderness/ science
Visitor use limits and controls	Minimal	For resource protection	For resource protection	Minimal	For resource protection	Minimal	Minimal	More strict	Significant, if allowed
Current evidence of human impact/ intervention	High	Moderate	Varies	High	Moderate	Moderate	Moderate	Little	None, minimal
Facility construction and site improvements allowed	For visitor activity and enjoy- ment	For recreation	For site protection	Interpreta- tion	For site protection; minimal tourist services	Some	Some	Interpreta- tion, simple recreation improve- ments	Only for protection
Level of management authority	Municipal	Municipal	National	Municipal/ national	National	National/ municipal	National	National	National
Example		Ghamdan	Pella	Hashmiya Square	Petra	Tibna	Grazing reserves	Dana	Aqaba Marine Science Station

Notes: Lightly shaded areas are already under protection through the Antiquities Law. Darkly shaded areas, under municipal jurisdiction, are not part of a national JPA system.

DEFINITION OF PROTECTED AREA

FEATURES AND CHARACTERISTICS

Setting: Whether immediate environment is city or rural, less developed area (for example, agriculture use is significant).

Key feature: Whether **dominant** attraction of site is an archaeological, cultural or natural resource. Note that all sites are managed for their archaeological, cultural *and* natural attributes.

Size: Whether boundaries of the JPA typically enclose a small unit or an expansive area.

Balance of use and protection: Where along the spectrum from unlimited use to completion protection the type of PA is expected to lie.

Dominant use: Recreation = outdoor leisure, picnicking, sports, and play activities; Visitation = sightseeing, hiking, etc.; Consumption of renewable resources = timber harvest, grazing rights, etc.; scientific = study of natural processes; existence value = value related to being there, non-utilitarian .

Mining allowed: Yes or no, under rules/regulations of specific JPA category.

Appropriate recreation: High density, substitutable recreation = recreation activities characterized by dependence on built facilities, acceptability of some crowding, and widespread availability of substitutes (e.g., picnicking, playgrounds, sports games); Leisure = relaxing unorganized activities such as sightseeing, shopping; Appreciative and nonconsumptive = recreation that is not dependent on major resource improvements (e.g., hiking, camping, birdwatching).

Importance of interpretation and education: How critical learning opportunities are to overall visitor satisfaction and appreciation of the experience.

International tourist demand: How popular the sites are for foreign visitors (low/medium/high).

Carrying capacity: Number of visitors suggested by the inherent ability of the resource to be sustained.

Use limits: Whether limits on visitor access or controls on visitor use will be applied.

Current evidence of human impact: How significantly the resource and site have been impacted by human activity.

Facility construction and site improvements allowed: How much and what kind of site modifications can be made.

Level of authority: Whether municipal, national or other/combination level management is more appropriate.

SECTION V
ANALYSIS OF MANAGEMENT OPTIONS FOR A
JORDAN PROTECTED AREA SYSTEM

With a clearer vision of the definition of a protected areas system, it is possible to examine management options. Following certain guidelines for assessing options, such as choosing the best fit to meet objectives and promoting realistic change given current realities, the team developed a limited set of organizational structures for analysis. Similar options and proposals were developed independently by the consultants and suggested by workshop participants. These options include:

- The status quo, with policy agreement at the ministerial level
- A new unit that sets policy for and manages all JPAs
- Specialized management of distinct archaeological, natural, and cultural resources, under a formal policy umbrella
- Private sector management, an option proposed by workshop participants
- Private non-profit trust, an idea developed by other external consultants
- A new council of major resource management units, a possibility assessed briefly in the workshop

A related organizational issue is creation of a unit to manage cultural resources, as such a unit does not currently exist. As there is currently a process under way to identify the most effective organizational structure, this report leaves the specifics of that issue to the Jordanian committee and cultural resource professionals. But the current gap in protection of resources from the post 1700 C.E. period is a serious omission in a protected areas system.

A. Criteria for Assessment of Management Options

The principle advantages and disadvantages of each management option are examined in the following section. The evaluation criteria, developed by small groups in the workshop, merit further description. A commitment to resource protection, improved coordination, and short-term practicality given current conditions are key factors in the creation of an effective management structure. Options that simplify organizational structure, those, in effect, that do not add more bureaucracy or create another organization to be absorbed into government, are more favorable. Options that decrease power struggles and lessen the likelihood of turf disputes by competing organizations are also to be favored along with operations within the existing legal framework or those that necessitate only minor legislative changes. The team assessed human resource requirements. Cost issues were also raised, both as an operational issue and in regard to available financing for service and facility improvements.

The proposals did not call for new ministries or major structural changes in government; the team attempted to propose practical options consistent with on-the-ground realities. However, the team did favor those options offering a fresh start. Maintaining the role of organizations that already manage a category of protected units, and have thereby developed particular expertise,

was also viewed as positive. For example, the Department of Antiquities and Royal Society for the Conservation of Nature both have good demonstrated track records, and the team concluded that their authority should not be diluted or shifted.

The team was able to identify certain organizational structures that offer greater accountability and transparency in operations. For examples, government attention to JPA management issues appears to increase with the creation of a unit that focuses solely on the protected area management. In effect, there is a danger of loss of identity for protected area management if merged with other units with broader mandates. Another important element is the degree of public support and visibility that a management structure is able to generate.

B. Option 1: Status Quo, with Policy Agreement

This option involves the same organizational actors as at present, but with the addition of an agreement on general policy at a high level of government. Figure V-1 presents the current organization for protected areas management, which demonstrates how the multiplicity of actors complicates management, particularly in natural resources. In addition to the major players with significant responsibilities, other organizations with jurisdiction are the Ministry of Energy (the Natural Resource Authority has oversight responsibility for mining), Ministry of Planning, and Ministry of Culture. Local councils, the private sector, and donors also exert an influence.

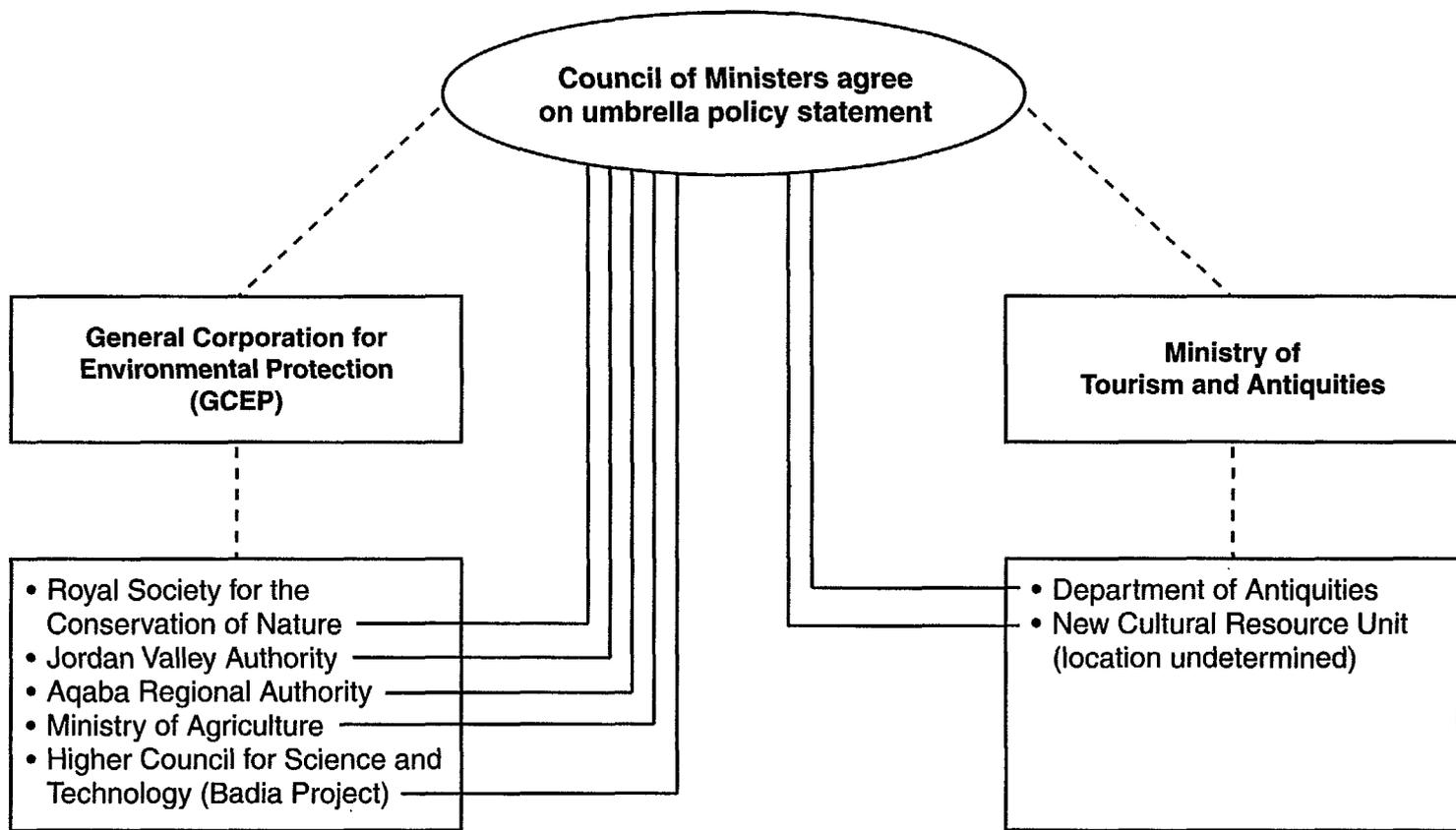
Optimally, a general policy agreement would occur at the ministerial level. Such a visible endorsement and commitment would encourage JPA management to become more accountable, as actions violating the integrity of protected areas would be dealt with at the highest levels. Advantages of this option are that no new laws would be required; it begins the process of introduction of the JPA concept and establishing JPAs without alienating other players; and this approach continues current specialization in managing diverse resources.

The primary disadvantage is that this option represents only a slight contribution to much-needed improved coordination. There would still be too many organizations with overlapping authority and conflicting objectives under a loose network. Rather than rewarding cooperation, this option, in fact, may worsen the competition for funds and establishment of JPA sites. In addition, too many existing laws create conflict for organizations; and policy agreement without reorganization does not increase public awareness of and support for a JPA system.

A slight variation on this option is to have natural resources-related organizations work through the General Corporation for Environmental Protection (GCEP), and sites related to antiquities or cultural resources work through the Ministry of Tourism and Antiquities (MOTA), as indicated by the dotted line in Figure V-1. It is assumed GCEP and the Department of Antiquities (DOA) would have parity and operate at a similar level of ministerial contact in this option. The complexities added by introducing these organizations is outlined below in Option 3.

The overall assessment of this option is that, while it is an immediate step that moves toward a more desirable structure, it does not solve the long-term issues in establishing a high-profile, effective JPA system.

Figure V-1
Option 1



V-3

30

C. Option 2: A New Organization for the JPA System

In this option, an entirely new organization encompassing all JPA areas, including policy and field operations, would be established. Previous tourism consultants have suggested this option to incorporate all relevant existing units related to JPA management under a new umbrella organization. Many professionals in Jordan seemed to believe that this model would be proposed by the PRIDE consultants, based on familiarity with the U.S. National Park Service tradition.

The primary advantages of the option are two-fold: it facilitates coordination and avoids the biases of past organizations. In addition, the option assumes new staffing, thus offering the potential for more creativity and flexibility; simplifies reporting within government and the organization; and draws public attention to JPAs.

The major disadvantages are the immediate obstacles posed by a requirement for a massive investment in staffing and operating budget. In addition, a separate unit is too large and diverse to be effective, and can lead to struggles over priorities. With its wealth of antiquities and archaeological resources, this is especially true in the Jordanian situation. Such an option would also add yet another organization to the bureaucracy, as other units of the Department of Antiquities and Ministry of Agriculture (MOA) would remain intact. Finally it would mean that the DOA and MOA would likely resist the partial integration, resulting in decreased staff motivation, given their relative strengths and autonomy.

The single-organization option is probably best as a long-term option, in 10 years or more, after the JPA system has evolved and matured.

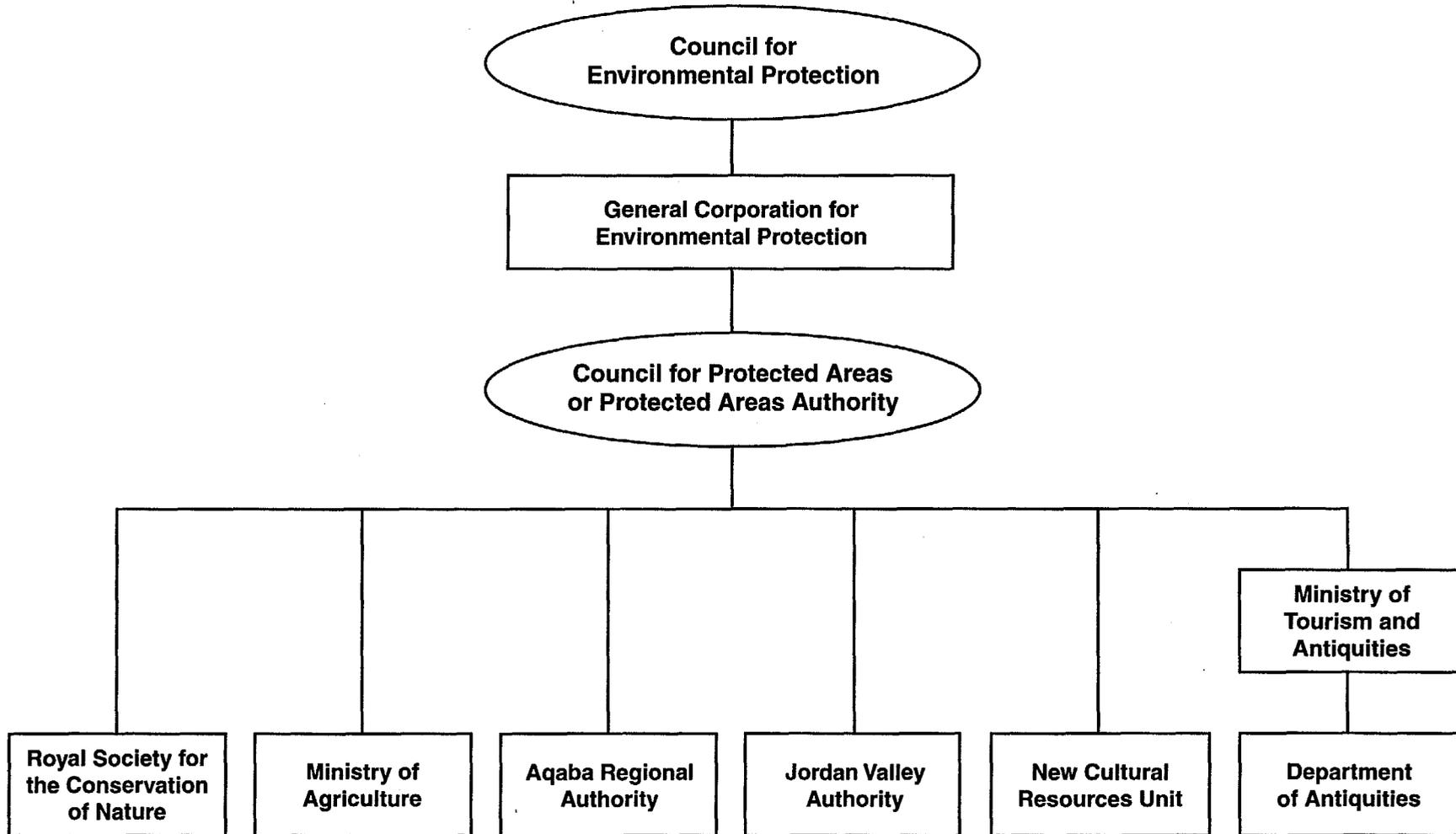
D. Option 3: Three Separate Units Under an Umbrella Organization

As it is advantageous to have an official policy coordinating body, this option builds on existing law. The following articles in the 1995 Protection of Environment Law are relevant: Article 5 states: "To achieve the objectives of this law, the corporation [General Corporation for Environmental Protection] practices the following authorities and functions: to put the conditions and bases of establishing wild reserves and national parks and to monitor them and all of the relevant issues according to a regulation published by the rules of this law." Article 21 continues: "The specifications and conditions which should be available in any wild or aquatic reserve or in a national park are determined by a regulation to conserve and environmentally protect them."

In this option, the General Corporation for Environmental Protection would serve as a basic policy body and umbrella regulatory unit for all protected areas, ensuring balance in managing archaeological, cultural, and natural resources (Figure V-2). Each organization would retain authority for management in the field. The Council for Environmental Protection (CEP) with 22 representatives from ministries, NGOs and the private sector, directs the activity of GCEP. A council or authority for protected areas would be established within GCEP to coordinate resources and tasks; a separate department within GCEP is not adequate, as it would not include the regular consultations necessary for coordination.

The primary advantage to this option is that coordination is maximized; furthermore, regular consultations contribute to attaining a balance in priorities. Other benefits are the continuation of specialization in protected area fields and the establishment of a mechanism for sharing information.

Figure V-2
Option 3



V-5

321

The biggest drawback to this option is that, at present, the Ministry of Tourism and Antiquities is not represented on CEP. One solution is that the mandate of GCEP would be changed, with legislation rewritten to include antiquities and cultural resources, which would cover all protected areas. The option of MOTA representation is not a strong possibility, as it was considered and rejected during the deliberative process prior to passing the law. More likely, the legal structure would be altered to give GCEP the authority to form a council or authority with MOTA involvement.

Other disadvantages to this option are that DOA may not be considered a full partner under this scenario, even if DOA eventually attains equity as a member on the JPA council. Furthermore, accountability is weakened by scattering responsibility across numerous field units, each with its own independence, specialization and legal framework. Overall, the team concluded that this option is advantageous over the medium term, and deserves further analysis by legal experts.

E. Option 4: Private Sector Operations

This option was discussed only briefly in the workshop, as its fundamental flaw soon became evident—the private sector is not likely to be oriented toward conservation and sustainability. The private sector also lacks an implementing authority as present, and would thus require massive legal changes. However, small group discussion highlighted the positive aspects of the role of concessionaires within JPAs, including the private sector's ability to offer high quality professional services, provide investment capital, and generally minimize bureaucracy.

F. Option 5: Private Non-profit Trust

In this option, a nongovernment body would be established to set JPA policy and manage JPA units. Funds would come from a variety of sources, including internally generated revenue, grants, donors, tourist taxes, and so forth. Used in many other locales, nongovernment management entities have the advantage of removing protected areas from the philosophical inconsistencies, staffing problems, and funding limits inherent in overburdened, resource-poor, government.

However, this option conflicts with current environmental law, which includes no provision for nongovernment management of protected area. As this option has been examined by other external consultants, this report defers to their more thorough analysis. The non-profit trust option appears promising, but requires a complete assessment of management options and legal structures related to the JPA system.

G. Option 6: Ad Hoc Council of Existing Managers

This option was also discussed only briefly. The suggestion in the workshop was that an ad hoc council be formed consisting of the major organizations managing archaeological, cultural, and natural resources. Actors might include MMRAE, MOTA, and MOA.

The advantages of the option are increased coordination, and monitoring and enhanced use of existing resources; furthermore, this option would not require changes to current organization law. On the negative side, participants concluded that this option was only a marginal improvement on the current situation. As it would be largely based on the goodwill of

the actors involved, it would, at best, only result in slight improvements in management consistency rather than a comprehensive JPA system.

H. New Cultural Resources Unit

Regardless of the option chosen, it is imperative that a new unit be established for the protection of post-1700 C.E. cultural resources, as this represents a serious gap in the conservation of Jordan's heritage. Management options are wide ranging and include the following:

- Change in the Antiquities Law to bring the date forward
- Establishment of a new unit within MOTA
- Establishment of a new unit within the Ministry of Culture
- Establishment of a new unit within MMRAE
- Designation of a private, non-profit trust for heritage conservation
- Partnership with municipal government

Because there is a consultation process under way to assess these strategies, this report does not recommend a specific organizational structure. But the consultants strongly support the creation of a cultural resources unit to increase national pride and heritage awareness, enhance Jordan's visitor attractions, and protect valuable historic assets.

ASSESSMENT OF JPA ORGANIZATIONAL OPTIONS

	Status quo	New overall organization	Umbrella for ✓ types	Private sector	Private non-profit trust	MOA, MMRAE and MOTA meet
Commitment to resource protection	✓	✓	✓		✓	✓
Improves coordination		✓+	✓+	?	✓	✓
Simplifies organization structure		✓	✓	?	?	
Clarifies priorities, reduces conflicting mandates		✓+	✓	?	✓	✓
Reduces competition and power struggles		✓	✓	?	?	
Human resource capacity at present	✓		✓			✓
Does not require new law or legislation changes	✓					✓
Less costly	✓			✓	✓	
Investment monies available				✓	✓	
Practical, given history	✓		✓			✓
Fresh start, fewer biases		✓+	✓	✓	✓	
Specialization	✓		✓			✓
Accountability		✓	✓	?	✓	
More attention to JPA issues by government		✓	✓		✓	✓
Increased public awareness		✓	✓		✓	

✓ indicates that the option meets management criteria ✓+ indicates that the option is above average in meeting management criteria

? indicates that it is not known whether the option will meet management criteria, as distinct structural options exist

8-V

36

SECTION VI
REPORT ON JORDAN PARKS POLICY WORKSHOP

The workshop was held on June 1 and June 2 at the Intercontinental Hotel. An agenda and list of the 20 attendees is attached as Annex B and Annex C.

A. Workshop Evaluation

The workshop provided a needed forum for presenting the draft papers to an interested and knowledgeable group, and eliciting their comments and suggestions. The workshop participants' input was reflected in the changes to the final report, improving the consultants' recommendations.

The number of attendees, however, was smaller than expected. The natural resource area was over-represented, with proportionately fewer participants from cultural and archaeological organizations. For example, GCEP and MOTA were each represented by only one person on a single day. There were also complaints about a lack of background material provided beforehand that would have ensured that participants arrived informed and well prepared. For future workshops of this nature, a professional Jordanian facilitator is strongly recommended.

Overall, the consultants received more compliments and expressions of support than complaints. Perhaps the greatest endorsement was the fact that, after two days of intense discussion, no major changes were made in the material developed by the consultants. Workshop participants made a number of suggestions for improvement, and recommended that certain points be emphasized, but the essence of the material and the concepts presented to the group remained fundamentally intact.

Several participants verbally endorsed the basic premise of establishing a system of protected areas in Jordan, and underscored that the timing was now right to begin the process. Participants from organizations entered fully into the discussions, with suggestions on how the process should progress. Such participation was very encouraging.

B. Welcome, Introductions, Short Team Presentations, and Consultant Remarks

In general, the Jordanian team's contributions were considered too short to be effective; participants felt they should have been more involved and prominent as resource people in the workshop. The consultants provided background on the rationale for establishment of a protected areas system, and described the categories of parks and reserves currently in Jordan now and proposed for a future system.

C. Protected Areas Concept and Designation Criteria

This was a very productive session after individuals presented their positions. There was some hesitation to commit to particular breakout groups. However, after the breakout sessions started, most people started working together quite well. This session provided useful information on the significant resource information previously prepared, and refined the participants' priorities. The session was invaluable as a means of introducing the group to the general concept of a Jordan protected areas system and illustrating the types of areas that could be included.

Of special importance were the suggestions received from the three breakout groups concerning "selection criteria" for areas within the JPA system. Most suggested criteria have been incorporated in the paper, "Selecting Areas for a Jordan Protected Area System." The solution for each nominal group team is appended.

D. Policies for JPA System

This session was the key to the entire workshop. The session's discussions were prolonged and intense, necessitating a half-day increase in the time allocated for the exercise, and resulted in many valuable suggestions. As this session demanded the deep involvement of participants, other less-important workshop session topics were dropped to allow more time.

Work done prior to the workshop held up consistently well under the close scrutiny of the group. Many meaningful suggestions for improvement were made and have been incorporated; overall, the main elements of the draft policy statements were reinforced, not replaced. The results of the session were incorporated in the paper, "Jordan Protected Areas Policy Framework."

E. Organizational Management Options

In consultation with the representatives from the Ministry of Planning, the strategy for this session was changed. The MOP representative and consultants asked for group suggestions, while not proposing pre-determined options. Using group suggestions as discussion topics, the breakout groups discussed pros and cons, and made suggestions and comments. The results of the two groups bore certain similarities, resulting in a proposed management structure that the consultants had previously identified as a valid option. The identification of advantages and disadvantages allowed organizational representatives to point out their respective mandates and responsibilities and pinpoint how the organizations might support the proposed initiatives.

While there was no consensus, there was a general recognition that there were options that would be difficult to implement and others, while not perfect, that were far more practical. The options are presented in the paper, "Analysis of JPA Organizational Management Options."

F. Follow-Up Action Plan, Ministry of Planning

Boulos Kefaya of the MOP led this brainstorming session, during which a number of suggestions for action were proposed:

- Copies of the team members' and consultants' papers should be distributed as quickly as possible to the workshop participants and other interested parties who were not represented at the workshop.
- Options for a JPA management structure should be carefully reviewed by legal experts. Their analysis would include legal problems that would prevent options from being implemented, regulations or laws required to allow implementation, and legal opinion on the most practical and workable options to pursue. Particular concern was expressed concerning the legal authority and responsibility of GCEP, particularly in reference to MOTA authority and responsibility.
- An NGO forum should be held to allow for discussion of workshop results.

- A more detailed action plan that incorporates legal advice should be developed to achieve a JPA system.
- A committee, including legal representation and consultants, should be formed to draft a process for nomination, evaluation, and designation of JPAs.
- After review by a wide audience of interested parties, the resulting papers including the workshop report, the legal review, and the proposed action plan, should be sent to decision makers, a high council, and the prime minister.

As the development of an action plan was not part of the consultants' scope of work, no detail, elaboration, or proposed time schedule for completion and implementation were made.

The workshop concluded with strong goodwill and commitment to the concept of a JPA system. While opinions varied widely on details, emphasis, structure, and organization, the consensus emerged that Jordan needs a protected areas system, perhaps modeled in part after the national park systems in other countries. Ideally, participants will work together cooperatively in the future to resolve obstacles that stand in the way of this important goal.

SECTION VII

TEAM POLICY PAPERS

DRAFT

MINISTRY OF PLANNING OF THE HASHEMITE KINGDOM OF JORDAN
AND
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

JORDAN PARKS POLICY PROJECT

**Natural Resources and Protected Areas
Policy Paper**

Prepared by

Dr. Maher F. Abu-Taleb

*President,
Environmental Resources Management Consultants*

May 23, 1996

DRAFT

TABLE OF CONTENTS

Executive Summary		3
Section I. Introduction		
A. Overview		5
B. Organization of the Paper		5
Section II. Natural Resources and Protected Areas Issues		
A. The Issues		6
Section III. Definitions and Specifications		
A. Definitions		7
B. Specifications		7
Section IV. Criteria for Establishment		
A. Overview		10
B. Criteria for Establishment of Natural Resources Protected Areas		10
Section V. Community Relationship to the Protected Unit		
A. Stakeholders		14
B. Involvement in Planning and Management		15
Section VI. Designation Process		
A. Legal Control		16
B. Funding		16
Section VII. Policy Recommendations		
A. Principles		17
B. Policy Statements		18
Section VIII. Management		
A. Management Plan		21
B. Specific Area Management		22
Section IX. Regulations		
A. Legislative and Rule Conflicts		24
B. Expected By-Laws		24
Annex A. Bibliography		
Annex B. Scope of Work		
Annex C. Persons Contacted		

EXECUTIVE SUMMARY

The current economic and environmental status of Jordan creates potentially conflicting goals: a desire to increase and maintain economic growth, while preserving and protecting an appealing but highly vulnerable environment. This paper looks at the choices available for natural resources and protected areas (NRPA) policy in Jordan. The following summarizes the most important features in each section of this document.

Section I. Introduction

To address its ecological fate, Jordan needs to choose policies and investments that encourage more efficient use of resources, protection of wildlife, and the adoption of sustainable development practices.

Section II. NRPA Issues

Natural resources and protected area issues were classified under five general categories: management, socioeconomics, environment, institutions, and information and use patterns issues. Each issue is documented in detail in the Issues Paper in Annex E.

Section III. Definitions and Specifications

A natural resources protected area is defined as a nationally important site in Jordan protecting significant natural resources. Nationally important site refers to areas of specific importance to Jordanians, while significant natural resources refer to land, minerals, water, forests, and representative flora and fauna. Four kinds of nature reserves in Jordan were developed, broadly falling within the most recent IUCN categories developed in 1994.

Section IV. Criteria for Establishment

Seventeen generalized criteria for establishing natural resource protected areas based upon RSCN's previous work and the results of the issues paper were developed under five issues (see Table 1 page 11).

Section V. Community Relationship to the Protected Unit

If natural resources are to be effectively conserved, any protected area must (i) give particular attention to the social and economic welfare of the various users; and (ii) seek sustainable development initiatives which do not conflict with objectives of conservation.

Section VI. Designation Process

The current network of nature reserves in Jordan have been designated by concession from the government, specifically MOA, to the RSCN. Funds to operate and manage the natural resources protected areas mostly originate from the government, private contributions, revenue from the hunting licensing process and from revenue from entrance fees.

Section VII. Policy Recommendations

To succeed, natural resources and protected areas policy must be part of an overall national conservation strategy compatible with policies in the water, agriculture, and natural resource sectors. Recommended policies aimed at "maximizing economic benefits" include imparting greater emphasis to the creation and expansion of job opportunities; promoting ecotourism; and levying a voluntary "Conservation Tax" on visitors. Policies aimed at "maximizing environmental benefits" include strengthening all services leading to the promotion of sustainable development, economic incentives, and strict protection in the short term; and conducting environmental impact analyses for all new activities. Policies aimed at "maximizing efficiency of institutional management" include empowering GCEP's Council for Environmental Protection to become an active policy making body; creating a department under the control of the Council to oversee establishment and monitor development objectives in line with the policies developed herein (in the short term, however, and until such time as GCEP becomes strong enough to regulate and enforce a protected parks policy, a blanket policy must be adhered to); providing RSCN with controlling authority for Nature Reserves; and promoting closer cooperation and coordination among institutions. Policies aimed at "maximizing protection of significant natural resources" include enforcing regulations for monitoring; halting and reversing habitat degradation; promoting the need for a fully representative network of nature reserves; reforming land tenure systems with more stringent laws; and prohibiting development in defined buffer zones. Policies aimed at "maximizing stakeholder participation and involvement" include organizing local community stakeholders to assume greater responsibility for development; strengthening the generation and dissemination of technical information; and coordinating efforts of stakeholders through awareness programs. Policies aimed at "maximizing the sustainable operations of nature reserves" include invoking a consistent pricing policy; improving incentives from sustainable practices; and monitoring marginal land by outlawing unsustainable uses.

Section VIII. Management

The attributes of the existing management model rely on a number of laws. The existing model can be described as one of overlaps and commonality of objectives among the various "institutions" making up the model. The management issues prevailing for the types of natural resources and protected areas defined in III are discussed in terms of type of tourism desired, desired level of visitation, access, staffing, buffer zones, and pricing policy.

Section IX. Regulations

In confronting the key concerns facing natural resources protected areas, the available laws and by-laws illustrate clear shortcomings. Articles in the Agriculture Law insufficiently deal with some related issues. At present, the environmental protection law does not go far enough in specifying the kind of by-laws to emanate from the law. The only given, however, is that a wildlife or aquatic reserve or national park regulation will be developed.

SECTION I INTRODUCTION

A. Overview

Jordan's natural beauty attracts hundreds of thousands of visitors each year. Jordan is heavily dependent on tourism, so one of its attractions, the quality of its natural resources, is crucial to the country's continued development and prosperity. Not only are these natural resources alluring, but they are also unique and fragile. Situated in a semi-arid climatic zone, the country's flora and fauna offer hundreds of species found native or migratory. These features create potentially conflicting goals: a desire to increase and maintain economic growth, while preserving and protecting an appealing but highly vulnerable environment.

Today, Jordan has more choices: it can choose policies and investments that encourage more efficient use of resources, protection of wildlife, and the adoption of sustainable development practices. How Jordan addresses these issues will determine its ecological fate.

B. Organization of Paper

This paper looks at the choices available for natural resources and protected areas (NRPA) policy. The paper begins by presenting the policy issues developed for NRPA by the author in a previous paper. The paper then addresses definitional issues for protected areas, criteria for establishment, community relationships in and around the protected units, the designation process, area management, and national regulations. Finally, a set of policy recommendations are developed and discussed.

The paper benefitted from meetings with a number of individuals and from examination of a number of relevant references. The annexes contain a list of those references, the scope of work for the natural resources and protected areas theme, a list of persons contacted, and the issues paper developed previously by the author.

SECTION II NATURAL RESOURCES AND PROTECTED AREAS ISSUES

A. The Issues

Natural resources and protected area issues were classified under five general categories: management, socioeconomics, environment, institutions, and information and use patterns issues. Below is a list of twenty three issues arising from the analysis in the issues paper. Each issue is documented in detail in Annex E. These issues and their subsequent analysis are the starting point for the policy recommendations in Section IX.

MANAGEMENT ISSUES

- Lack of management plans (resource protection, visitor and research facilities)
- Property ownership / management
- Definition, scale, and extent of protected area

SOCIOECONOMIC ISSUES

- Loss of access to productive land
- Potential for tourist use of protected area
- Absence of economic incentives to conserve habitats
- Encroachment of agriculture
- Financial constraints and priorities

ENVIRONMENTAL ISSUES

- Protection of wildlife feeding and breeding grounds
- Maintaining ecological balance of critical ecosystems
- Pollution (air, water, solid waste, mining spoils)
- Overgrazing/areas, periods, and durations
- Deforestation (fires, legal/illegal cutting, grazing, trespassing)

INSTITUTIONAL ISSUES

- Lack of integrated planning
- Existence of ambiguous land tenure systems
- RSCN capacity building

- Weakness of laws / lack of enforcement
- Absence of nationally agreed upon land use plans / buffer zones
- Lack of mechanism to add new parks to the system

INFORMATION AND USE PATTERNS ISSUES

- Lack of comprehensive, updated information that is distributed
- Lack of initiatives not conflicting with conservation objectives
- Placing limits on use of habitats
- Lack of comprehensive park rules for nature reserves

SECTION III DEFINITIONS AND SPECIFICATIONS

A. Definitions

According to the International Union for Conservation of Nature and Natural Resources (IUCN), areas which are managed to meet compatible conservation objectives can be considered to be "protected areas." Thus they can be classified according to the objectives for which they are being managed. IUCN (1994) defines four categories for natural resources and nature reserves: (i) strict nature reserve/wilderness area; (ii) ecosystem conservation and recreation area (National Park); (iii) habitat/species management area; and (iv) managed resource protected area. Taking into account the issues developed for this policy paper and the cultural, institutional, and economic considerations in Jordan, the definitions and specifications of nature reserves are as follows:

Definition. A natural resources protected area can be defined as a nationally important site in Jordan protecting significant natural resources. The underlined terms are elucidated below:

Nationally important site: Areas of specific importance to Jordanians, e.g., watershed value, education and research, biodiversity protection, maintaining/enhancing productive capacity, and consumptive and nonconsumptive benefits.

Significant natural resources: Within the context of this paper, natural resources refer to land, minerals, water, forests, and representative flora and fauna. Significance is imparted by the uniqueness of the resource and the level of economic wealth derived from the resource such as agricultural production, ecological process protection, vegetative cover, and other benefits to sustain and advance our well-being.

B. Specifications

Based on the analysis of the issues, a set of general specifications for four kinds of nature reserves in Jordan can be developed. These broadly fall within IUCN categories and are delineated in terms of human interference, size, and control. A range of examples of current natural resource protected areas in Jordan is given for each specification.

B1. Scientific Reserve/Strict Nature Reserve (IUCN Category Ia)

These areas possess some outstanding ecosystems, features and/or species of flora and fauna of national scientific importance, or are representative of particular natural areas. The educational function is to serve as a resource for studying and obtaining scientific knowledge.

Human Interference. Natural processes are allowed to take place in the absence of any direct human interference; tourism, recreation, and public access are not permitted.

Size. Size is determined by the area required to ensure the integrity of the area to accomplish the scientific management objective and provide for the protection of the area.

Control Over Use. Use of the reserve should in most cases be controlled by the central government. Exceptions may be made where adequate safeguards and controls for long-term protection can be ensured and where the central government concurs.

Jordanian Examples. None at present.

B2. Nature Conservation Reserve/Wilderness Area (IUCN Category Ib)

This category is desirable when protection of unmodified land areas or habitats is essential to the continued well-being of their natural character and influence.

Human Interference. Public access is allowed for at a level that will maintain the wilderness qualities of the area for present and future generations.

Size. The area should be of sufficient size to allow for preservation and use.

Control. Ownership may be by the Jordan Government or, with adequate safeguards and controls, by local authorities, e.g., delegated authority to the RSCN.

Jordanian Examples. Azraq Wetland Reserve and Shaumari fit into this category to a certain extent, but at the same time they are also ecosystem protection and recreation areas as defined below.

B3. Ecosystem Conservation and Recreation (IUCN Category II: National Park)

This is a natural area designated to protect ecological integrity, exclude exploitation, and provide a foundation for scientific, educational, and visitor opportunities which are environmentally and culturally compatible with conservation.

Human Interference. No exploitation of the natural resource base is allowed. Spiritual, scientific, educational, recreational, and visitor opportunities are provided in so far as they do not conflict with the objectives of management.

Size. The area should contain a representative sample of protected features, habitats, and flora and fauna for scientific, recreational, and tourist use.

Control. Land ownership is under government control, with delegated authority to local government or the RSCN or ARA.

Jordanian Examples. Azraq, Shaumari, Dana, Zoubia, Wadi Mujib, Wadi Rum and the Red Sea Marine Park are potential future examples.

B4. Sustainable Use of Natural Ecosystems (IUCN Category VI)

These areas are managed to ensure long term protection of biodiversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.

Human Interference. Human interference and use must be managed to maintain the overall productivity of the areas and their resources in perpetuity. The needs of indigenous people must be met in so far as they do not conflict with the objectives of management.

Size. The area should be large enough to absorb sustainable resource uses.

Control. The area must be managed on a sustained yield basis in partnership with the local community. Land ownership is under government control with possible delegated management authority to local government or the local community.

Jordanian Examples. Forests and MOA grazing reserves.

SECTION IV CRITERIA FOR ESTABLISHMENT

A. Overview

The issues paper (Annex E) presents an inventory of flora/fauna, describes the natural resources and protected areas in Jordan, and identifies key threats to protected areas and the resource base. This section builds upon that background in order to develop criteria for establishment of nature reserves.

One of the significant points raised in the issues paper was the lack of a mechanism to add new units to the system of parks in Jordan. Over the years, RSCN has set certain criteria for establishment of reserves, most notably John Clarke's proposal for wildlife reserves in Jordan in 1979. That document sets out the criteria for selecting reserves and is the basis of all current and proposed reserves. Clarke discussed definitions of "national parks" and argued for coordinating the management of three elements - natural areas, historical sites and recreation grounds. The 1979 paper is outdated and needs updating, an exercise attempted below at the general level.

B. Criteria for Establishment of Natural Resources Protected Areas

The generalized criteria for establishing natural resource protected areas based upon RSCN's previous work and the results of the issues paper are listed below under five issues. The seventeen criteria will assist decision makers in making sure that the minimum possible levels of adequacy can be achieved before establishing a natural resources protected area.

The criteria were developed for the specific case of nature reserves in Jordan taking into account the relevant issues, the current state of knowledge in conservation, and through consultation with concerned parties (see Annex C: Persons Contacted). The criteria set was developed to take into account comprehensive coverage of all the land types and representative samples of habitats recognized by research in Jordan and ensure that designs conflict as little as possible with existing land use while considering administrative and budgetary factors. The criteria set was designed to be complete, minimal, decomposable, and measurable; features that necessarily impart workability to the criteria for establishment of nature reserves.

Table 1. Criteria for Establishment

NATURE RESERVES CRITERIA FOR ESTABLISHMENT	
POTENTIAL FOR PROTECTION	
1.	Representative Samples/Wide Cross Section of Ecosystems
2.	Viable Populations of Indigenous Species
3.	Areas where locally extinct species can be reintroduced
4.	Scientific Research
EXTENT OF AREA	
5.	Size/Shape/Natural Barriers
6.	Adequate Buffer Zone
LINKAGES TO OTHER UNITS	
7.	Combination Reserves
8.	Infrastructure
SOCIO-ECONOMIC CONSIDERATIONS	
9.	Economic Benefits or Return
10.	Environmental Benefits
11.	Cost of Life Cycle Development
12.	Number of Beneficiaries in Community
13.	Ecotourism Potential
INSTITUTIONAL & LEGISLATIVE CONSIDERATIONS	
14.	Preliminary Management Plans for Priority Areas
15.	Application of Environmental Assessment
16.	Rights of Ownership/ Demands on Land Usages
17.	Legal Control

Potential for Protection - This issue refers to the potential level of protection offered by each site as well as to the habitat or species requiring protection.

Representative Sample/Wide Cross Section of Ecosystems - What is needed is to establish a system of wildlife reserves for Jordan covering as wide as possible a cross section of the country's various ecosystems; and protect representative samples (as large as practicable) of each major type of ecosystem found in the country so that their characteristic features might be safeguarded under protected conditions.

Viable Population of Indigenous Species - Protect viable populations of all indigenous species of plants and animals.

Areas Where Locally Extinct Species can be Introduced - Protect areas in which locally extinct species of plants or animals could be reintroduced.

Scientific Research - Future studies will add to existing knowledge on ecosystems. A determination whether environmental baseline data needs exists or needs to be conducted.

Extent of Area - This refers to the availability and condition of area within/outside a site.

Size, Shape, Natural Barriers - Reasonable size and shape should be taken into consideration wherever possible and also natural barriers in land types that offer tracts of inaccessible terrain.

Adequate Buffer Zone - Buffer zones are necessary to provide a natural barrier and absorb any potential impacts around the protected area.

Linkages to other Units - Linkages of units would be a plus in terms of ecotourism and management.

Combination Reserves - There are administrative and financial advantages if protected samples of two or more different land types can be included within a single reserve.

Infrastructure - Access to the a protected site is an issue reflected in accessibility and routes. Fulfilling the objectives of development can be enhanced by connecting different protected areas of different size together.

Socio-Economic Considerations - This issue deals with the financial aspects of the development of protected areas including benefits as well as costs of development.

Economic Benefits or Return - This refers to the potential for economic growth, locally and nationally, associated with the establishment of the site, and thus becomes a reflection of public preferences. This can be scrutinized by the amount of expenditure in services, souvenir shops, admission fees, transportation, and lodging.

Environmental Benefits - Benefits that could be valued include recreation/tourism, watershed protection, ecological process and biodiversity protection, education and research, and consumptive and non-consumptive benefits.

Cost of Life Cycle Development - Reserves should be part of the overall national conservation strategy and take into account full capital and operating costs over a selected number of years. It may be impractical to establish enormous reserves that involve unrealistic expenditures.

Number of Beneficiaries in Community - Beneficiaries of a reserve can be defined as the local community adjacent to the site, the authority responsible for the site, hotels, restaurants, tourism business, private travel agencies, and other private sector interested groups, including scientists and researchers.

Potential for Ecotourism- To provide a base for visitor opportunities which are environmentally compatible with conservation.

Institutional and Legislative Considerations - Administrative and management constraints to effective areas management must be identified and overcome.

Preliminary Management Plans for Priority Areas - Adequate management plans ensure sustainability of the reserve operations. These preliminary plans can be updated at the early stages of establishment.

Application of Environmental Assessment - Environmental assessment (EA) is a tool that achieves coordination between development and sustainability. The process of EA ensures that protected areas meet acceptable standards and will be sustainable.

Rights of Ownership and Land Usages in and around Sites - It may be necessary to establish whether any portions of the proposed protected areas impinge upon private land or land already earmarked for projects unknown to the present study. Demands of other land usages must be taken into account.

Legal Control - A managing authority must be identified early in the process of establishment. If it is a nongovernmental organization, the scope of concession from the government to manage the site must be determined.

SECTION V COMMUNITY RELATIONSHIP TO THE PROTECTED UNIT

If natural resources are to be effectively conserved, it is imperative that the broader issues of natural resource management be addressed. For example, any protected area must (i) give particular attention to the social and economic welfare of the various user groups; and (ii) seek sustainable development initiatives which do not conflict with the objectives of conservation.

As stated in the issues paper, with the absence of economic incentives to conserve, and without stakeholder or local population involvement in the short and long terms, conservation efforts will most likely fail. Currently, conservation is regarded to have one single objective: protection of sites and wildlife without economic benefits to anyone. However, short term and long term incentives, like jobs from sustainable practices and other direct benefits must be established for and with local populations by coordination and management.

Initiatives such as education and job opportunities do not conflict with conservation objectives and are necessary for long term sustainability of reserves. With the lack of such initiatives not conflicting with conservation objectives, the protection processes is jeopardized.

A. Stakeholders

A1. Identification

The stakeholders in Jordan can be identified as members of the local community in and around a protected area, educational groups, scientists and researchers, users (visitors, tourists), involved government agencies, and the institutions with delegated authority from the government for protection of areas.

A2. Local Attitudes Toward Protection

Examples of reserve operation and management in Jordan illustrate the difficulties of dealing with the local communities. Some sites, e.g., Dana have been quite successful in providing some form of job opportunities but, as yet, are having difficulty with local grazing practices. Local communities know that establishment of a protected area implies some job opportunities but they also fear the controls that come with the establishment. Ultimately, effective conservation of any area can only be possible with the full support of the general public, both resident and visiting. Consequently awareness programs for implementation must be developed and aimed primarily at local residents, tourists, and policy makers.

B. Involvement in Planning and Management

Heretofore, efforts to involve communities in the planning process have been minimal. There is no consultation with relevant local communities during any part of the process to produce integrated plans of action. RSCN, through its experience with establishing and

operating conservation reserves, has developed outlines for community participation in planning by proposing new mechanisms to consult with all relevant bodies. The Dana reserve is an example where RSCN has worked with members of the local community in order to proceed with management plans.

B1. Tradeoffs of Establishment

Since there are different stakeholders and multiple management objectives in the process of establishing protected areas, conflict and tradeoffs inevitably arise. Stakeholders have individual preferences which affect the process of establishment, operations and management. The multiple objectives of management dictate uses for adjacent lands, identify buffer zones, and disrupt human usages of land within a reserve. The tradeoffs can be handled through participation in group decision making techniques and multi-objective decision analysis. These processes ultimately provide for reaching a "compromise" or an optimal decision that may not be the "best" decision for any one individual or group of individuals.

B2. Involvement in Management

Any required involvement in management can only occur by training and education. Community outreach education activities must be developed to (i) ensure that the local community understand the benefits of protection and learn ways to help; and (ii) curtail problems which may arise from non-involvement. The local community's fears of resettlement must be allayed and their contribution to the ecotourism experience highlighted. Thus, there must be a conscious effort to involve the local communities in management plans. Private sector investments must also be addressed in so far as development is allowed to occur outside the reserve's buffer zone. With the exception of Dana, management plans for protected areas currently do not

- prioritize problems (e.g., disturbances, littering);
- identify the most effective means of bringing about public support; and
- identify local organizations to be involved in coordinating and contributing to protection.

These management concerns are addressed in the section on Policy Recommendations.

SECTION VI DESIGNATION PROCESS

A. Legal Control

The current network of nature reserves in Jordan have been designated by concession from the government, specifically MOA, to the RSCN. Thus, RSCN has delegated authority to control, operate and manage the selected reserves according to their rules of establishment. For the areas that have been declared nature reserves or brought under legal control, some degree of protection is usually warranted depending upon the relative need and the funds available. RSCN has employed guards at Dana, for example, that will soon coordinate very closely with the local police force and be authorized to monitor and enforce protection rules more systematically.

B. Funding

Funds to operate and manage the natural resources protected areas mostly originate from the government, private contributions, revenue from the hunting licensing process that RSCN controls by delegated authority, and from revenue from entrance fees.

RSCN is in the process of setting up a 5 million JD trust fund to cover operations of the reserves under its control. According to RSCN, fifty percent of current revenue from entrance fees is pumped directly back into the operations funds of reserves. This recovery cycle for keeping funds within reserves ensures sustainable operations and re-investment in the reserves. This is in sharp contrast to national tourist sites where entrance fees are collected by the Ministry of Tourism for the Ministry of Finance which eventually allocates these and other revenue to prioritized public sector programs.

SECTION VII POLICY RECOMMENDATIONS

A. Principles

To succeed, natural resources and protected areas policy must be part of an overall national conservation strategy compatible with policies in the water, agriculture, and natural resource sectors. Based on that premise and the foregoing analysis of issues, the government park policy should be founded on the following principles:

Maximize economic benefits - The economic and financial costs of establishing and managing nature reserves and protected areas are large, requiring a balance in terms of potential revenue from multiple use areas, employment opportunities, and the provision of services.

Maximize environmental benefits - The potential negative environmental and social impacts of establishing and managing nature reserves and protected areas must be minimized. This requires enhancement of positive impacts. Regulations need to be developed to ensure that delicate ecosystems are not damaged in these areas.

Maximize efficiency of institutional management - Institutional strengthening and human resource development must be undertaken in order to overcome administrative and management constraints to effective natural resources and protected areas management. In addition, efforts must be coordinated among institutions.

Maximize protection of significant natural resources - Minimizing further degradation of the natural resource base is needed before irreversible damages occur.

Maximize stakeholder participation and involvement - Effective environment for conservation can only be possible with the full support of the general public. Consequently the country needs awareness programs. Short term and long term incentives, like jobs from sustainable practices and other direct benefits need to be established.

Maximize the sustainable operations of protected areas - This principle stems from the necessity for a long term sustainability perspective: the idea of short term limits versus longer term limits on use of certain habitats must be considered. For sustainable development and operations, economic incentives, consistent pricing policy and strict protection in the short term are needed to continue into the longer term.

B. Policy Statements

Some of the principles above overlap and complement each other, while others conflict. The conflict arises from the usual environmental protection versus development for economic

benefits, especially between long term sustainability and short term economic benefits. Because both are needed, policy must aim at achieving as much of the principles as possible. With that in mind, the following general policy statements are developed. More in depth analysis would be required to transform these policies into strategic action plans. The potential implementing agencies for each set of policies are also presented for completeness.

B1. Policies Aimed at Maximizing Economic Benefits

Implementing institutions: MOA, GCEP, MMRAE, RSCN.

B1a. Impart greater emphasis to the creation and expansion of job opportunities in and around natural resources protected areas. Develop management plans for multipurpose use areas that allow for sustainable consumptive and nonconsumptive benefits.

B1b. Promote ecotourism and planned activities including the establishment of educational field centers at reserves. Entrance and other service fees could be imposed for all visitors thus generating revenue to maintain and develop parks, with any excess transferred to the government. The government must apply aggressively the principle of cost recovery for supplying inputs and services to ensure sustainable operation of natural resource protected areas.

B1c. Levy a voluntary "Conservation Tax" on visitors to Jordan through a well documented information program through an NGO in Jordan. For this to succeed, it must begin on a short term voluntary basis in order to be able to assess responsiveness, followed by a mandatory tax in the long term. Moreover, individuals donating money must be assured that a non-governmental organization is administering the fund and utilizing it in designated places.

B2. Policies Aimed at Maximizing Environmental Benefits

Implementing institutions: MOA, GCEP, MMRAE, RSCN.

B2a. Strengthen all services leading to the promotion of sustainable development, economic incentives, and strict protection in the short term.

B2b. Conduct environmental impact analyses for all new activities. This process will identify the positive impacts and enhance environmental benefits. It will also identify potential negative impacts and provide for mitigation measures that will ensure environmental protection early in the planning of an activity.

B3. Policies Aimed at Maximizing Efficiency of Institutional Management

Implementing institutions: MOA, GCEP, MMRAE, RSCN, ARA, NRA, MOP, MWI, various local and international research institutes.

B3a. Empower GCEP's Council for Environmental Protection to become an active policy making body. It should contain a core staff working under the supervision of the Council Chair and members to coordinate with other agencies on natural resources issues.

B3b. Create a department under the control of GCEP's Council to become the National Institute for Protected Areas to oversee establishment, monitor, and enforce development objectives in line with the policies developed herein. In the short term, however, and until such time as GCEP becomes strong enough to regulate and enforce a protected parks policy, a blanket policy must be adhered to. This interim policy shall be based upon the policy statements contained herein. In the longer term, the Protected Areas By-Law to emanate from the new environment law could set the precedent for integrated planning, management, enforcement, and monitoring requirements.

B3c. Provide RSCN with controlling authority for Nature Reserves. RSCN can greatly expand its conservation role by careful planning and management of all the reserves under its concession from the government. In order to ensure dissemination of information and financial direction, the National Institute must set standard monitoring and performance measures to oversee the work of RSCN. With a new mandate to GCEP, monitoring and enforcement will become more strict and more systematic.

B3d. Promote closer cooperation and coordination among institutions. Coordinate overlapping issues and responsibilities for natural resources and ecosystem protection among MOA, ARA, MWI, GCEP, and RSCN by direct involvement through the GCEP Council.

B4. Policies Aimed at Maximizing Protection of Significant Natural Resources

Implementing institutions: MOA, GCEP, MMRAE, RSCN, ARA, MWI, various local and international research institutes.

B4a. Enforce regulations for monitoring through the use of police force/guards. Enforce pollution prevention.

B4b. Halt and reverse the habitat degradation process by setting up committees to coordinate activities at all levels of government and promulgate rules and regulations. The committees should be empowered with decision making authority concerning short term limits on use of certain habitats to ensure breeding, feeding, and migratory functions. Thus, clear regulations need to be developed to ensure that delicate ecosystems are not damaged in multiple use areas

B4c. Promote the need for a fully representative network of nature reserves. This will ensure the maintenance of Jordan's valuable and internationally important ecosystems, while facilitating economic development through preparation and implementation of multi-user protected area management plans.

B4d. Reform land tenure systems with more stringent laws at the national level. Nationally agreed upon land use plans, including buffer zone definition, will automatically

lead to sustainable uses of the limited resource base and can save large areas of land by more careful monitoring and enforcement of regulations and laws.

B4e. Prohibit development in the defined buffer zone for each area. This policy requires the integration of land use plans with the requirement of buffer zones around a protected area.

B5. Policies Aimed at Maximizing Stakeholder Participation and Involvement

Implementing institutions: GCEP, MMRAE, RSCN, ARA.

B5a. Organize local community stakeholders to assume greater responsibility for improvement and development in and around protected areas. Widen participation of local residents in nature reserve protection.

B5b. Strengthen the generation and dissemination of technical information on natural resource protection. A national set of readily available data, categorizations, levels of service, and protection standards is key to ensure more involvement.

B5c. Coordinate efforts of stakeholders through awareness programs. An effective environment for conservation can only be possible with the full support of the general public.

B6. Policies Aimed at Maximizing the Sustainable Operations of Nature Reserves

Implementing institutions: GCEP, RSCN, various local and international research institutes.

B6a. Adopt a consistent pricing policy that covers specific costs. This pricing policy must not limit Jordanian's access, must differentiate between reserves at different levels of development and it must differentiate between local and international visitors.

B6b. Improve short term and long term incentives from sustainable practices. Direct benefits must be worked out with local populations.

B6c. Monitor marginal land by outlawing unsustainable uses within the framework of protected areas. Monitor and control uses in reserves at certain times and allow for scientific research to develop and continue.

SECTION VIII MANAGEMENT

This section presents the attributes of the current management model for natural resource protected areas with the aim of overcoming deficiencies and finding an optimal plan for Jordan as part of the policy recommendations. The section also discusses details of a potential operational plan for specific area management according to the definitions in Section III.

A. Management Plan

Table 2 below presents an evaluation of the attributes of the current management model based on the issues raised previously. The attributes stem from the existing model which relies on a number of laws, including the Agriculture Law of 1973 and the Environment Law of 1995. The existing model can be described as one of overlaps and commonality of objectives among the various "institutions" making up the model. The main institutions include the MOA, ARA, RSCN, GCEP, the Jordan Valley Authority (JVA) and the Natural Resources Authority (NRA).

Table 2. Attributes of Existing Management Model For Nature Reserves

Attributes of Existing Protection Model	Positive / Negative	Discussion
RSCN has delegated authority over reserves and is in the process of establishing new ones	Positive	Historically, RSCN has achieved its purposes in establishing conservation sites for representative habitats, but the society requires major strengthening and sustainable funding
The Law of Environmental Protection for 1995 will develop specifications and guidelines for protected areas in Jordan	Positive	The by-laws will be developed by a coordinating committee from the Council, including ARA, and RSCN. The by-law should discuss coordination among agencies, e.g., NRA and RSCN.
GCEP has overall responsibility for national parks and protected areas	Positive, Negative	GCEP by-law on the issue has not been released and it will take some time. From the record of achievement of DOE (the predecessor of GCEP), enforcement of regulations is not a strong suit.
Involvement in Planning & Management	Positive	Some involvement of concerned parties may occur through the environmental council on the board of GCEP.
Funding is <i>ad hoc</i> and duplicative in nature and provides short term assistance without sustainability	Negative	Non-sustainable conservation and duplication of effort implies a loss of resources. RSCN will be establishing a trust fund to cover operations.

ARA has overall responsibility for the Red Sea Marine Park	Positive, Negative	ARA has a mandate to establish and maintain the park, but with no previous experience. Other organizations could bolster ARA's strength.
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B. Specific Area Management

As stated previously, any required involvement in management can only occur by training and education. This subsection examines the management issues prevailing for the types of natural resources and protected areas defined previously.

B1. Type of tourism/domestic use desired

In IUCN category Ia, natural processes are allowed to take place in the absence of any direct human interference; tourism, recreation, and public access are not permitted. Exceptions may be made where adequate safeguards and controls for long-term protection can be ensured.

In IUCN Category Ib, public access is allowed for at a level that will maintain the wilderness qualities of the area for present and future generations.

In IUCN Category II (National Park) no exploitation of the natural resource base is allowed. Spiritual, scientific, educational, recreational, and visitor opportunities are provided in so far as they do not conflict with the objectives of management.

In IUCN Category VI, sustainable use is considered to be the management of all renewable resources, utilized in some combination to best meet the needs of the country. Any human interference must be managed to maintain the overall productivity of the areas and their resources in perpetuity. The needs of indigenous people must be met in so far as they do not conflict with the objectives of management. The area must be managed on a sustained yield basis.

B2. Desired level of visitation

Depending upon the type of nature reserve, some legal controls are assumed. Such control could be broad-based and preclude all other forms of land use. If possible, Category Ia and Ib reserves should be well separated from detrimental outside pressures, existing or potential. It is, however, highly favorable for Category II parks to allow a wide range of sustainable tourist and research activities. A desired level of visitation can be determined based upon the size of the reserve, the sensitivity of the habitats, the physical constraints imposed by the natural terrain, local community input, and the management objectives of the protected area.

B3. Access and appropriate provision of infrastructure

Each reserve will need an administrative headquarters and ranger stations. Suitable sites are, in general, not difficult to locate; but in some regions, according to RSCN, the non-availability of water is a limiting factor. Each reserve should have a fairly easily negotiable

61

road or track leading at least to its headquarters along which building materials and supplies can be carried without difficulty.

B4. Staffing

The required level of staffing for a protected area varies with size, degree of protection, presence of archaeological units, local community populations in and around the area, and number of visitors. At a minimum, maintenance staff are needed to ensure safety and support daily activities from facilities cleaning to waste collection. Trained personnel in preservation and biodiversity must be on site along with "tour" specialists, e.g., for site interpretation, and public awareness. A senior reserve manager will coordinate all management activities for the reserve.

B5. Zoning/Buffer Zones

Buffer zones are necessary to provide a natural barrier and absorb any potential impacts around the protected area. There must be a policy that integrates land use plans with the requirement of buffer zones around a protected area. For example, there shall be no hotel development in the buffer zone. Local community development activity must be minimized within this zone.

B5. Pricing Policy

As described in the Policy Recommendations Section, pricing policy must possess a number of important features: (i) the policy may not limit Jordanian's access, i.e., prices have to be compatible with local willingness and ability to pay and allow educational establishment free entry; (ii) the policy may have to differentiate between reserves at different levels of development; (iii) the policy will differentiate between local and international visitors; and (iv) the policy must be a consistent one in the short to medium terms.

The concept of "conservation tax" mentioned in the policy recommendations may be another way to ensure sustainable management of reserves and parks. A well documented information program developed by an NGO is a must.

SECTION IX REGULATIONS

A. Legislative and Rule Conflicts

In confronting the key concerns facing natural resources protected areas, the available laws and by-laws illustrate clear shortcomings. For example, the Jordan Agriculture Law discusses in detail the issue of wild birds and animal protection, bird endowment, and hunting practices, and there are many articles in the law that regulate grazing. Despite all that, the articles regarding the protection of wild animals and birds do not protect the natural medium or habitat, like bushes and trees, that must exist to protect these birds and animals. In the process of regulating grazing the legislation did not consider that necessary balance. The purposes of the articles that regulate hunting are to preserve by reducing the number allowed to be hunted. Moreover, articles that regulate grazing authorize the minister to determine the areas, periods and duration of grazing without any correlation between hunting and grazing, and without consideration to birds and animals mating season or their needs for specific vegetation and food.

The main purpose of the Ship Act No. 51 of 1961, is to protect the harbor from chemical materials and other wastes. Articles in the Agriculture Law insufficiently deal with some related issues. Article 118 of the Agriculture Law prohibits only commercial fishing and protects the corals from commercial use. The law does not penalize non-commercial fishing, nor does it define commercial and non-commercial use. The issue of the protection of marine life requires more attention and from a more serious perspective. The law does not protect against dumping sewage and wastewater in regional waters nor does it prohibit ships from dumping waste, chemical and radioactive materials in the waters. Instead, the law is limited to protecting the harbour from chemical wastes (Article 215 of the Ship Act).

B. Expected By-Laws

At present, the environmental protection law does not go far enough in specifying the kind of by-laws to emanate from the law. The only given, however, is that a wildlife or aquatic reserve or national park regulation will be developed. Such a regulation will explore all the issues relevant to protected areas and define some mechanism for zoning around a park, currently non-existent. Zoning laws are needed to protect the intrusion of developments incompatible with natural sites and to limit growth at the expense of these sites.

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ANNEX B SCOPE OF WORK

JORDAN PARKS POLICY AND MANAGEMENT Terms of Reference for Natural Resources and Protected Areas expert

Key objective: As a participatory member of an interdisciplinary team and consultative process, the Natural Resources and Protected Areas Expert will be responsible as the lead author for preparing a policy paper on nature reserves/parks.

Definitions:

Archaeological park - archaeological site of national significance with related historic/cultural attributes

Nature reserve/park - nationally important site protecting significant biological/ecological/faunal resources

Cultural landscape - regional approach to protecting a compatible mix of land use, historical connections, aesthetics to maintain integrity of resource (e.g. scenic byways, viewsheds, marketing regions)

Recreation areas - areas of importance for leisure and recreation by Jordan, including outdoor recreation sites, green space, historic districts, and individual architecturally significant structures.

Tasks and Responsibilities (all):

1. Participation in all team orientation activities during week one, including group and individual meetings with Parks Policy Consultant, brainstorming session, and meetings to the development of a work plan for the activity.
2. Attendance at regularly scheduled team meetings chaired by Team Coordinator.
3. Preparation of one of four brief issue papers on land use planning, biodiversity, natural resources and protected areas, and recreation. Each issues paper will include a brief overview of the issue in a historical context, discussion of the regulatory environment, and documentation of the current situation in a SWOT (strengths, weaknesses, opportunities, threats) matrix. Preparation of these papers will be followed by a period of focused team interaction, on order to clarify the range of park options included in each of the four categories, and as a means of identifying the specific topics each park policy paper will address. Due April 30.
4. Written draft of policy paper for each category of park with recommendations addressing (including but not limited to the following):
 - a. Write definitions and specification of the type(s) of "park units included under each of the four categories.
 - b. *Criteria for establishment:* antiquities/flora/fauna descriptive inventory, is resource

intact/threatened, save all/some (i.e. priorities)?, how are the proposed protected units linked to other protected areas or attractions, application of Environmental Impact Assessment process, other.

c. *Community relationship to the protected unit*: identify stakeholders, consideration of local attitudes toward resource protection and tourism (as appropriate), type of involvement in the planning process, ongoing management and opportunities, role of associations, NGOs and cooperatives, tradeoffs of establishment, process of land use conflict resolution, financial and employment opportunities, other.

d. *Designation/gazettelement process*: link to central government, institutional arrangements, source of funding, boundary marking, other.

e. *Management*: specify type of tourism/domestic use desired, desirable level of visitation (carrying capacity, limits of acceptable change), access, appropriate provision of infrastructure, facilities, amenities and services, educational role, circulation, zoning options, concession operations, private sector role, financial considerations (entrance fees, self-financing, returns and fund distribution), staffing, volunteers, training, other.

f. *Regulations*: legislative and rule conflicts, overlap and needed changes, other.

5. Contributions to revisions of policy papers based on review by Parks Policy and Parks Management consultants and Ministry of Planning and USAID/Jordan officials.

6. Participation in workshop to collect input from various government and parastatal representatives and major revisions to policy paper based on workshop discussions.

Tasks and Responsibilities (individual):

Responsible for natural resource and protected areas issue paper that summarizes lessons from existing protected areas, including the nature reserves under the Royal Society for the Conservation of Nature, the Red Sea Marine Park, the Jordan Valley Authority institutional arrangements, and the National Parks are protected rangeland/forests managed by the Ministry of Agriculture. This paper will also include a status report on the Jordanian resources base, including water, forested areas, rangeland, minerals, and agriculture.

Responsible for policy paper on protected natural areas.

Early in the activity, using organizational charts, and baseline information on staffing, staff training, funding, and inter-agency relationships, analyze the organizational capacities of the Ministry of Water and Irrigation. Interpret this information for use by the full team.

ANNEX C
PERSONS CONTACTED

Aqaba

Mohammad Arabiyyat, *Aqaba Region Authority*
Dr. Ahmad Abu Hillal, *Aqaba Marine Station*

Azraq Conservation Project Team

Parks Policy Consulting Team

Dr. Cherie Lenzen, Archaeology
Ramzi Kawar, Land Use
Ruba Kanaan, Recreation
Yousef Atari, Legislation
Raed Al-Daoud, Coordinator

General Corporation for Environmental Protection

Dr. Saleh Al-Shara', Director

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Dr. Walid Abedrabbouh, Director of Agricultural Policy
Dr. Cay-D. Mentz, Agricultural Production
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Othman Dawlat, Director, Shaumari Reserve
Aqel Hamad, Deputy Director, Shaumari Reserve

**HASHEMITE KINGDOM OF JORDAN
MINISTRY OF PLANNING
AND
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT**

JORDAN PARKS POLICY PROJECT

**Rural Cultural Landscapes
Draft Policy Paper**

Prepared by

Ramzi N. Kawar

**Managing Partner,
Community Development Group**

May 25, 1996

TABLE OF CONTENTS

- Section I. **Introduction**
- Section II. **Policy Issues Related To Land Use Planning**
- Section III. **Definitions and Specifications**
- Section IV. **Criteria For Establishment**
- Section V. **Community Relationship to the Protected Unit**
- Section VI. **Designation Process**
- Section VII. **Management**
- Section VIII. **Regulations**
- Section X. **Policy Recommendations**

SECTION I INTRODUCTION

This paper looks at rural cultural landscapes defined in the Terms of Reference as "regional approach to protecting a compatible mix of land use, historical connections, aesthetics to maintain integrity of resource (e.g. scenic byways, view sheds, marketing regions)". The TOR also requests that the policy paper include such topics as: zoning including buffer concept, erosion, village development and encroachment, water use, land tenure, ownership, and use rights.

This paper examines the options for the development of rural cultural landscapes in Jordan. The paper addresses definitional issues for cultural landscapes, criteria for establishment, community relationships in and around cultural landscapes, the designation process, area management, and national regulations. Finally, the paper proposes a set of policy recommendations for discussion.

SECTION II POLICY ISSUES RELATED TO LAND USE PLANNING

Definition Issue

Issue: No common working definition of sustainable land use and planning

Environmental Issues

Issue: The absence of land use planning has aggravated the degradation of natural and cultural resources of Jordan.

Issue: Absence of EIA for urban planning

Issue: Imbalanced population growth and pressure on the land.

Issue: The encroachment of urban and rural development on prime agricultural lands, green areas, open spaces, and forests.

Legislation Issues

Issue: The lack of a clear legal mechanism for enforcing the use of integrated regional/urban land use planning/zoning as a part of comprehensive national development planning.

Issue: The lack of a clearly defined prioritization mechanism used in land use planning.

Issue: Weakness of existing laws and inadequate enforcement of laws, codes, and regulations.

Issue: Existing legislations related to land need strengthening, updating, and development.

Issue: Existence of ambiguous land tenure systems.

Issue: Inappropriate pricing and taxation (urban land speculation, property tax, transfer tax, vacant land tax, profit tax).

Issue: lack of comprehesiveness of existing legislation.

Institutional Issues

Issue: There are multiplicity of institutions responsible for land use planning. Overlapping authorities which believe they control the use of land.

Issue: Lack of integrated planning.

Issue: Lack of communication and co-ordination among agencies.

Issue: Absence of nationally agreed upon land use plans / buffer zones.

Issue: Decentralisation of operations to the local level

Management Issue

Issue: Availability, accessibility, co-ordination, and proper use of land information.

Issue: Lack of a system of monitoring and evaluation the land use situation.

Issue: Lack of funds for land use planning and management.

Issue: Lack of stakeholders awareness and participation in land use planning process.

SECTION III DEFINITIONS AND SPECIFICATIONS

Definitions

There is no clear definition of cultural landscapes that could be easily applied to Jordan. What we present here is a review of the working definitions of Cultural Landscapes in order to arrive at a definition suitable for Jordan.

In general national Cultural Landscape are defined as coherent land areas possessed of extensive archaeological remains, or land areas upon which important cultural events occurred.

According to the IUCN, cultural landscapes are defined under Category V: Protected Landscape or Seascape. In brief, two types of areas could fall under this category of parks:

1. areas whose landscapes possess special aesthetic qualities which are a result of the interaction of man and land, and
2. areas that are primarily natural areas managed intensively by man for recreational and tourism uses.

While it may be argued that all of the types of parks could be used for recreation and tourism, for the purposes of this paper, only the first part of the definition will be dealt with, since, it is assumed that the recreation area expert will address the second part of the definition.

In the context of Jordan, this definition cuts across the variety of landscapes and across the various historical periods of Jordan. What is unique in Jordan is that the human settlement patterns, cultivation, and Bedouin lifestyles continue to reflect the patterns of interaction with the landscape which goes back to thousands of years. In the modern era, political events had more influence on this historical pattern of man and land relationship, so that the rich natural and cultural resources of Jordan have been preserved or neglected in direct relation to the political factors affecting the country.

Categorisation

IUCN's classification of protected areas refers to those which are managed to meet specified compatible conservation objectives. As such, conservation categories provide the basis for clearly incorporating conservation into development (eco-development). Each category relates to one or several of the major goal of a nation's development plan.

The National Parks Service defines cultural landscapes as: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes.

Historic Landscapes include: residential gardens and community parks, scenic highways, rural communities, institutional grounds, cemeteries, battlefields and zoological gardens. Examples in Jordan include Al Karamah Battlefield.

Historic vernacular landscape: a landscape that evolved through use by the people whose activities or occupancy shaped that landscape. Through social or cultural attitudes of an individual, family or a community, the landscape reflects the physical, biological, and cultural character of those everyday lives. Function plays a significant role in vernacular landscapes. They can be a single property such as a farm or a collection of properties such as a district of historic farms along a river valley. Examples include rural villages, industrial complexes, and agricultural landscapes.

Historic Site: a landscape significant for its association with a historic event, activity, or person. Possible examples in Jordan include Wadi Arabah: Peace Treaty Site, Sharif Hussein's house in Aqaba

Ethnographic Landscape: a landscape containing a variety of natural and cultural resources that associated people define as heritage resources. Examples are contemporary settlements, religious sacred sites and massive geological structures. Small plant communities, animals, subsistence and ceremonial grounds are often components. Jordanian example could include the Hijaz Railway System (including trains, bridges, and stations), Pilgrimage Road, Religious Shrines.

Other Jordanian examples include:
Road to Madaba from Amman,

Sites which have both archaeological and traditional remains and the setting is also unique: Um Qais, Iraq al Amir, Jerash, Ajlun, Mekawir.

Sites which commemorate a famous Jordanian figure: King Abdullah's house in Jordan Valley.

Villages with surrounding landscape that are examples of human settlement patterns: Dhana, Tibneh, Fuhais, Ma'in.

A collection of trees or single tree that are unique for their age or religious significance: Ancient Olive Trees, Wali Trees in various villages.

Areas of traditional agricultural patterns that are unique: al Haffayer at Aqaba, Ma'an Basatin.

SECTION IV CRITERIA FOR ESTABLISHMENT

The criteria of establishment should take into account the various layers of information in a certain locality. The method of determining whether a certain area is to be a cultural landscape area should take into account the following:

1. The landscape possesses special aesthetic qualities which are the result of man and land.
2. Ease of physical definition.
3. The possibility to have a buffer zone around the area, or itself be a buffer zone to a reserve or recreational area.
4. Linkages with other protected areas which could reduce costs in economies of scale. Sharing of management and infrastructure resources could also be a positive feature. The rural cultural landscape could also be a part of a route to one of the archaeological parks, or be part of a tour.
5. The landscape has historical national, regional, or local significance.
6. The landscapes are characterised by scenically attractive or aesthetically unique patterns of human settlement.
7. The area is large enough to ensure the integrity of the landscape pattern.
8. The landscape has natural or scenic areas along a coastline, shoreline, or mountain.
9. The area has the potential to be developed for a variety of outdoor recreational uses with national significance.
10. The status of the environmental and cultural resources. If the area is under threat, there may be an urgency to save it.
11. Application of Environmental Impact Assessment process.

SECTION V
COMMUNITY RELATIONSHIP TO THE PROTECTED AREA

In response to the conflicts of interests arising between protected areas and local people, due to the inability to balance competing objectives of conservation and increasing pressures of human activities, a new initiative, the integrated conservation-development project (ICDP) has been launched. This approach attempts to reconcile the management of protected areas with the social and economic needs of local people.

To achieve these objectives, three distinct types of operations are undertaken: Protected area management activities, Buffer Zones establishment, and Local social and economic development.

This approach is distinguished from others by its effort to promote social and economic development among communities adjacent to protected areas and is comparable to those in rural development projects.

The development of thinking regarding cultural landscapes has evolved to the point whereby today there is a the dynamic qualities inherent in a landscape: the role of both natural and construed systems, and the features which comprise those systems, and the resultant need to manage change in the landscape rather than attempt to freeze it at a particular moment in time. The principal is to assist the local communities' socio-economic development through the creation of the cultural landscape park.

Ensure the involvement of the local community into the planning process: Identify the stakeholders prior to the designation of the proposed protected area. The views of the local communities living in the proposed protected areas, and in the areas adjacent to it, must be taken into account in the planning stages in order to take into considerations the local attitudes towards protection and tourism.

SECTION VI DESIGNATION PROCESS

A two-step process for identifying rural historic districts and their landscape components are: first, to locate the district to be studied and the second is to identify the landscape components which form and define the district.

The location of the district includes its physiographic, ecological, historical, and cultural contexts. The boundaries of the district can be cultural, political, and natural. The various components which make up the landscape also need to be identified in order to understand the interrelationships between them. Ten material components are presented in this report: 1. overall pattern of landscape spatial organisation, 2. land use: categories and activities, 3. response to natural features, 4. circulation networks, 5. boundary demarcations, 6. vegetation related to land use, 7. cluster arrangements, 8. structures: type, function, materials, and construction, 9. small scale elements, and 10. historical views and other perceptual qualities. Techniques of study include historical documentation, photography, aerial photography, field notes, maps, sketches, etc.

After the landscape components have been identified, the rural landscape can be evaluated according to its historical significance. Four criteria for evaluation are outlined. Information is given on how to define categories of historic properties, determine the context for evaluating a rural historic district, identify the type of significance of rural historic district, evaluate the integrity of a rural historic district.

Following identification and evaluation for significance and integrity, a management strategy for the rural historic district should be developed. Existing planning policies, standards, and guidelines are reviewed for their relationship to rural historic districts.

Management concerns are discussed, and existing local, national programs are outlined. They include local land protection programs, such as land zoning, planning, and easements: national activities which include registers and local controls; and lastly, antiquities programs, and agricultural programs.

Apart from the existing preservation measures, there are many alternative methods for managing and protecting rural historic districts. These include methods by means other than acquisition such as education, technical assistance, private conservancies, zoning, or tax incentives. Protection alternatives through the acquisition include: co-operative agreements, leases, easements, partial acquisition, fee acquisition, leaseback, and sell back. Within any one rural historic district, a combination of several methods will be required to ensure effective management and protection.

SECTION VII MANAGEMENT

General Management Plan for Cultural Landscapes

Management Objectives

- To maintain a dynamic land use system which perpetuates the historical balance between people and nature.
- To conserve the biodiversity and ecological integrity of the ecosystem in the rural cultural landscape.
- To conserve the areas' significant cultural resources.
- To safeguard and promote the rights of the indigenous residents of the area to control their own economic and cultural development in a manner that leaves the existing resources intact.
- To encourage responsible tourism which benefits the local, regional, and national economy.
- To provide opportunities for interpretation, education, and research concerning the areas' natural and cultural resources.
- To maintain and promote those values for which an area is designated as a rural cultural landscape.

Management Plan for Specific Site

Management Objectives

Management objectives are descriptions of the resource quality, social conditions, and visitors experience that will be the goals of the park management authority for management and development of the cultural landscape.

Natural Resources Management Objectives

The ecological integrity and biological diversity will be managed as basic components of the cultural landscape they are essential to the quality of life for residents and are the heritage for the nation and the world.

1. Scientific and indigenous knowledge of the area's natural resources and ecological processes will be compiled, shared, and applied.
2. Exceptional resources will be managed to preserve their special values.
3. Water catchments and natural water sources will be protected for the benefit of human, animal, and wildlife populations.
4. Any threatened or endangered species will be protected and managed to encourage viable populations.
5. Forests will be protected and conserved.
6. Essential wildlife corridors and habitats will be conserved.
7. Range conditions will be improved and maintained.
8. Man-caused soil erosion will be minimised.
9. Areas of scenic beauty will be maintained and preserved.
10. Commercial extraction of raw materials will not be allowed, extraction for local use will be minimised and controlled.
11. Pollution of air, water and soil will be minimised and controlled.
12. The introduction and spread of non-native species will be prevented or controlled.

Cultural Resources Management Objectives

1. Archaeological and historic sites will be better protected, manage, and where appropriate, interpreted.
2. Potential archaeological areas will be investigated and incorporated into the cultural resource management of the area.

3. The integration of management authorities responsible for natural and cultural resources will be clarified and improved.
4. all additional developments and actions will be evaluated for impacts on the areas cultural resources.
5. Indigenous residents will be educated as to the value of natural and cultural resources and will have a role in the care and interpretation of these resources.
6. The public will be better informed and educated about the significance and value of the area's natural, archaeological and contemporary cultural resources.
7. Contemporary cultural sites and resources will be identified, protected, and interpreted in co-operation with indigenous residents.
8. Opportunity will be promoted for indigenous residents to share their cultures with visitors in ways which respect traditions and individuals.
9. All topographical site references will reflect accurate, traditional names.

Community Development management Objectives

1. Residents and neighbouring communities will participate in reaching conservation and development objectives of the cultural landscape.
2. The relationship between the park management and the residents will continue to improve.
3. The delivery of social services will be designed to meet the special needs of local communities.
4. Social services and economic development will be planned and co-ordinated in a regional context.
5. Food availability and security will be enhanced to improve nutritional status of residents.
6. Health services will be improved and made more accessible to residents.
7. Opportunities will be improved for formal and extension education for children, youth and adults.
8. Communication and transportation network connecting the residents in the park to the outside will be improved.
9. Economically viable and environmentally acceptable income generating activities will be promoted.
10. Residents will have the opportunity to improve their standard of housing in way which does not conflict with other objectives.
11. Traditional grazing areas and corridors will be protected and improved.

Tourism Management Objectives

Tourism will be promoted within the context of rural cultural landscapes

1. Visitors will have improved opportunities to experience and understand the values for which the area was declared a rural cultural landscape.
2. Opportunities will be provided for a diversity of visitor experiences in different areas of the landscape.
3. Visitation by the Jordanian citizen will be promoted.

4. Limits of acceptable use will be determined for each management zone and tourism activities and development controlled within these limits.
5. Visitation will be controlled to protect the exceptional qualities of the landscape.
6. A consistent high standard of tourism services and facilities will be promoted.
7. Residents will participate in and benefit from tourism.
8. Revenues from tourism within agreed limits of acceptable use, will b maximised in support of the areas objective.
9. Private sector companies will be encouraged to participate in reaching management objectives.

Administration and Operations Management Objectives

The rural cultural landscape will be implemented in such a way as to sustain each component in an optimal balance.

1. The cultural landscape will exemplify the conservation ethic in its administration and operations.
2. The Protected area will adopt a participatory, transparent procedure for major decisions affecting multiple stakeholders.
3. Indigenous resident communities will be involved at all levels and stages of policy and decision-making.
4. The protected area will collaborate with government institutions and other interested parties in reaching its objective, following a set of agreed procedures.
5. The park will seek to implement management objectives in collaboration with regional development and conservation initiatives.
6. Environmental impact assessments will be conducted in a transparent manner for major actions in order to avoid adverse environmental and social impacts.
7. The park will recruit and maintain a well-motivated and a multi-disciplinary skilled staff which includes indigenous residents.
8. A system of financial management will enable the park to achieve continuity and accountability in reaching management objectives.
9. Annual action plans for each department will be developed to implement the management objective.
10. Research that supports the priorities of the park will be promoted.
11. There will be a system for monitoring the components of the rural cultural landscape.
12. Unique qualities of the park will be publicised at the local, national and international levels.
13. Security of residents, staff, visitors and their property will be promoted.
14. A code for siting and design of buildings and other development will be established and observed.
15. The administrative structure of the park will correspond to implementing management objectives.

SECTION VIII REGULATIONS

Since the category being discussed here is non-existent and currently there are no regulations which are directly concerned with rural cultural landscapes, this review will necessarily be conceptual. The premise here is that when a cultural site is declared, then many legal issues will arise as to what laws will be used to protect it, whether or not new regulations are needed to be put in place, and what agencies will be responsible for implementing these laws.

In principle, the new areas should be thought of in the same way as natural reserves since they are essentially parts of the landscape which require physical protection and management. However, there are cultural heritage artifacts that are not protected by any legislation and are parts of the cultural sites. The Antiquities Law does not cover these sites at the moment. A new law for heritage protection will have to be created.

The other dimension of cultural sites is their meaning. There is currently no mechanism to interpret these sites in a manner that takes into account their true value for its own sake. Much of the interpretation is the official version which is transmitted via television broadcasts typically related to a national event. What little anthropological scientific research is conducted does not filter through to the public domain. There is a need to protect the history of the rural cultural landscapes and for the real stories of people to be told.

SECTION X POLICY RECOMMENDATIONS

The general objectives of the policy recommendations regarding rural cultural landscapes is the maintenance of nationally significant natural and cultural landscapes which characterise the harmonious relationship between man and land.

The second objective is to create for Jordanians more opportunities for public enjoyment, through recreation and local tourism.

Given the already existing nature reserves, recreational parks, and archaeological sites, the policy recommendations regarding rural cultural landscapes will probably be overlapping and complementary. The assumption is that policies for rural cultural landscapes (themselves non-existent at present), should assist in defining the concept and co-ordinate it within the larger system of national parks.

Economic

Define projects and sub-projects composed of planning expertise, professional and technical training (workshops and seminars), and equipment procurement suitable for foreign aid funding and participation.

Develop methods for cost-sharing with the government, and work towards self-sufficiency.

Develop a clear system of financial accountability.

Protection And Sustainability

Co-ordinate policy with the largest number of relevant agencies involved in the management of natural and cultural resources.

Environmental

Determine suitable land designation for protected areas in Jordan.

Efficient Institutional Management

Create a specialised autonomous framework to manage a system of national parks.

Clarify the objectives and goals of the national parks system, and its linkages to other sectors of the economy such as tourism, agriculture, and education.

Define this new framework as an independent body that functions according to sound financial principles, and accountable to a board of directors.

Formulate an implementation plan for park development containing a financial plan with capital budgets, sources of funding and phasing of expansion.

Maximize Stakeholder Participation

Encourage the private sector to operate within the parks for a profit, with proper supervision.

Environmental Awareness

Encourage the interpretation of sites for visitors and emphasize the need for protection.

Link the information system into the sites.

Research And Information

Develop a comprehensive management information system.

Create a Geographical Information System (GIS) for territories to be managed.

Human Resources

Develop a core of management skills and experience to become the country's resource for park planning and management.

Visitation

Optimise the volume of visitors to all the parks through proper marketing and management techniques.

JORDAN PARKS POLICY PROJECT

RECREATION AREAS AND HISTORIC CITY CENTRES

DRAFT POLICY

Prepared by

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May 25, 1996

POLICY PAPER ON RECREATIONAL PARKS: DRAFT

TABLE OF CONTENTS

EXECUTIVE SUMMARY

CATEGORY I: NEIGHBOURHOOD PARKS

- *Section I: Definitions And Specifications*
- *Section II: Criteria For Establishment*
- *Section III: Designation Process*
- *Section IV: Community Relationship To Designated Areas*
- *Section V: Management*
- *Section VI: Regulations*

CATEGORY II: MUNICIPAL AND REGIONAL PARKS

- *Section I: Definitions And Specifications*
- *Section II: Criteria For Establishment*
- *Section III: Designation Process*
- *Section IV: Community Relationship To Designated Areas*
- *Section V: Management*
- *Section VI: Regulations*

CATEGORY III: HISTORIC CITY CENTRES

- *Section I: Definitions And Specifications*
- *Section II: Criteria For Establishment*
- *Section III: Designation Process*
- *Section IV: Community Relationship To Designated Areas*
- *Section V: Management*
- *Section VI: Regulations*

MANAGEMENT POLICY RECOMMENDATIONS

REGULATION AND INSTITUTIONAL RECOMMENDATIONS

ANNEX 1	ACRONYMS
ANNEX 2	REFERENCES
ANNEX 3	RELEVANT ARTICLES IN CURRENT LEGISLATION
ANNEX 4	RECREATION AREAS: ISSUE PAPER

EXECUTIVE SUMMARY

Recreation is understood as the human interaction with natural and cultural resources with the aim of partaking in a pleasant and invigorating activity. While recreation parks should, thus, be pleasant and friendly, it is imperative to maintain some type of management that will ensure their continuity and protection. Not every area used by a community for recreation should be established as a recreational park that is managed within a national criteria. Some of these parks satisfy a local recreational need based on a renewable resource and could continue to be managed by local authorities. The criteria of selection should be based, as much as possible, on the potential impact of recreation on the resource base. As such, this draft policy differentiates recreational areas into three categories:

- Category I: Neighbourhood Parks
- Category II: Municipal/Regional Parks
- Category III: Historic City Centres

For each of these categories the policy paper includes the full requirements of the TOR including: definitions, criteria for establishment, designation process, relationship to the community, and issues of management and regulations. This aims at concluding which of these categories is finally included in the Jordan Protected Area System. The last two sections include policy recommendations for recreational areas included within the system.

The recommendations introduced in this policy paper are based upon two main arguments. First: the concept of recreation in Jordan does not have a single institutional or legislative framework. Various government and non-government institutions include the designation and/or maintenance of recreational parks as part of their duties (section I, II, III for each category). Furthermore, the legislation pertaining to each of these parties includes articles related to the establishment of recreational parks (Annex 3). This overlap of mandates and responsibilities created a general confusion. As a result, some of the nationally significant recreational areas that incorporates natural and cultural resources suffer from abuse and lack of management. Forms of abuse include soil erosion, compaction, damage to vegetation, disturbance of wildlife, increased fire frequency, vandalism, noise, no collection of solid waste, water pollution and damage to archaeological and cultural heritage.

The second argument in this paper is related to the existence of a regulated mechanism for the designation and establishment of recreational parks that is used on a national level. The regulations of the Cities, Villages and Buildings Planning Law [79/1966] form the basis of planning and zoning procedures for the various municipalities (over 2500 people) of MMRAE, as well as GAM, ARA and JVA. The regulations stipulates the protection of natural and cultural resources through their inclusion in designated park areas. The procedure also includes provisions for public involvement in the designation process; those provisions are, generally, not enforced. The only parks that are not designated through these regulations are the parks given as special concessions by the Prime Minister's Office. This category includes the designation of the 7 nature and wildlife reserves under the mandate of the RSCN, the Petra National Park, the Red Sea Marine Park and more recently the Mount Nebo and Umm al-Rasas Archaeological Park.

The policy recommendations came in tandem with the above arguments and are presented on pages 13-14. The lack of institutional transparency is recommended to be addressed by the imposition of an overall managerial role for the **GCEP** as stipulated by the recent Law for Environmental Protection [12/95]. The regulations upon which the **GCEP** is to partake the managerial role for parks are not yet issued. It is recommended that those regulations take into consideration **GCEP's** potential role in the monitoring and co-ordination of issues of designation and designation documents; establishment of management mechanisms and organisational structures; establishment of national **HRD** programmes; and, provision of safety, security and public awareness frameworks. The inconsistency of the designation procedure is recommended to be addressed by the enforcement of the regulations of the Cities, Villages and Buildings Planning Law [79/1966]. The enforcement should take into consideration three main aspects: 1) the public representation on local, regional and central planning committees; 2) The representation of natural and cultural specialists on these committees; and, 3) The co-ordination between the central and regional planning and zoning efforts. Finally, a comprehensive Jordan Protected Area System would be difficult to implement without imposing regulations for the protection and management of historic buildings, landmarks and city centres. Category III summarises the recommendations for the creation of a National Register for Historic Buildings and Landmarks.

CATEGORY I: NEIGHBOURHOOD PARKS

SECTION I: DEFINITION AND CONTEXT

A. Definition

The urban population in Jordan grew dramatically in the last half century. Growth was generally haphazard and resulted in the creation of squatter areas, unplanned neighbourhoods and empty pockets of land within municipal boundaries. Within such a situation of general lack of planning, neighbourhood parks, i.e., green areas within residential neighbourhoods, are extremely rare. In the last decade there has been an active effort to compensate for this defect through designating green areas in the urban context as parks.

SECTION II: CRITERIA FOR ESTABLISHMENT

A. Neighbourhoods Planned and Designed by the General Corporation for Housing and Urban Development (GCHUD)

The General Corporation for Housing and Urban Development, that is currently responsible for the establishment of relatively large housing projects for limited and middle income groups, has an article in its Law [8/e] that stipulates the provision of public amenities, including parks, in their projects.

- From a technical point of view, no design criteria was set for this category. Nevertheless, the design team at the Corporation seem to have unofficially adopted the World Bank criteria set for the provision of green areas in their early projects. This stipulates an area of 6.00-7.00 m² per housing unit with a total of 4.00 -5.00% of the site. As non-productive units within the housing project such green areas were usually fragmented into small and neglected pockets. Recent policy changes within the Corporation stipulate that the percentage designated for green areas should be included within the design documents as a park.
- These parks are designated, planted and fenced by the **GCHUD** then turned over to the municipality (**MMRAE**, **GAM**, **ARA**, and **JVA**) within which jurisdiction the housing project lies.

B. Parks in Unplanned Neighbourhoods

Another type of neighbourhood park is becoming more common in Amman. The Greater Amman Municipality has recently taken an active role in the demarcation and designation of neighbourhood parks within established residential neighbourhoods. The choice of these parks is necessarily limited to the availability of vacant land within the dense urban tissue. Land plots designated as parks are confiscated, bought or exchanged from the original owners and registered as a **GAM** property. **GAM** is then responsible for the landscape design and maintenance of these parks.

SECTION III: DESIGNATION PROCESS

Neighbourhood parks that are not defined by the **GAM** or **GCHUD** as mentioned above are designated through **MMRAE**'s regulations of the Cities, Villages and buildings Planning Law [79/66].

- The process starts with the demarcation of places used for recreation by the community on a topographic map prior to the preparation of local zoning plans [article 14]. A local planning committee is stipulated to co-ordinate with the Central Department for Rural and Urban Planning at the **MMRAE** in the preparation of the regional zoning maps [article 15/1]. Before the approval and ratification of the skeletal zoning maps a period of two months is given for objections by the community or any government or non-government institution [article 21/1]. After applying the alterations that are approved by the Higher Planning Council a one-year temporary period of ratification is applied after which the plan is announced in the official gazette at the Local City Planning Committee [article 22 and article 20].

SECTION IV: COMMUNITY RELATIONSHIP TO NEIGHBOURHOOD PARKS

Recreation is understood as the human interaction with natural and cultural resources with the aim of partaking in a pleasant and invigorating activity. Recreation parks should thus be pleasant and friendly. The community's relationship to the neighbourhood parks is:

- Neighbourhood parks are established as a public amenity with the main aim of providing the maximum pleasant atmosphere.
- The community does not have a direct role in the designation process. It has an indirect role in the form of demarcation of recreational areas on local zoning plans for areas under development by MMRAE.
- It is recommended that the community should have a role in the choice of the type(s) of recreational activity provided; i.e. play grounds, sports grounds, ..., etc. This can be achieved through their representation in the decision making process.

SECTION V: MANAGEMENT

Neighbourhood parks/green areas satisfy the basic outdoor recreational need for a local community. Their selection and/or design criteria should focus on the maximum possible interaction between the community and the park. The main establishment criteria for this type of park should be landscape design and management for recreational purposes. Plants and green covers should be of indigenous types with the aim of easy maintenance.

A. Management objectives

The management of these small parks is of absolute importance as they represent the basic recreation opportunity for the surrounding communities.

- Neighbourhood parks should not be included in a comprehensive or national management plan. Their designation and management responsibility should be maintained on a local level and should fall onto the municipality within which they exist.
- Management will concentrate mainly on sustainability of the space and renewability of the green cover, planted trees and park furniture.

B. Management Recommendations

Management will concentrate mainly on sustainability of the park through maintaining the green cover, planted trees and park furniture. The responsible local authorities should be enabled to carry out this task through a national HRD plan.

- Recreation activities will not be restricted. The only restriction on number of users should be identified through imposing a design criteria for park designation that is proportional to the zoning requirements of the location. The parks will be fully open to various types of

public use including: relaxing, playing and walking. The only recommended direct interference in the use of space is through landscape design.

- Spatial management will require a landscape design that defines walkways, seating areas, possible water sources, The plant cover should include types that are indigenous to the area for easy maintenance. The boundaries of the park should be defined by a wall, fence, ...and a gate. No restricted zones are recommended to be included in these parks.
- It is recommended that no entrance fees should be imposed on neighbourhood parks. The management of these parks as a category should continue to be budgeted for and implemented by the local authorities.

SECTION VI: REGULATIONS

Neighbourhood parks are provided for under different sets of regulations (Annex 3). **GAM**, **GCHUD** and **MMRAE** include sections in their regulations that stipulate the designation of park areas. Special directives are recommended to be introduced to address the following:

- Defining a design criteria for neighbourhood parks in tandem with the zoning requirements.
- Including provisions and mechanisms to ensure community participation in defining the requirements for the type(s) of recreation activity desired.

CATEGORY II: MUNICIPAL/REGIONAL PARKS

SECTION I: DEFINITION AND CONTEXT

A. Definition

Municipal/regional parks are large areas of outstanding recreational significance on a national level. They, sometimes, represent diverse ecosystems and/or significant cultural resources in an urban and rural context. Some of these areas are designated as municipal or regional parks based upon their popular use and their location near heavily populated areas. The main use of these parks is relaxing, playing and "wellness" related activities.

B. Issues related to definitions

In general terms, these parks falls under two different mandates.

1. Mandate of the regional authority in the area within which the park is located for parks that are used for mainly recreational purposes. Examples include the Amman National Park and Ghamdan Park under **GAM**.

2. Mandate of the semi-governmental institution or individual corporations that has concessions/leases for the area for parks that are used for recreational and tourism purposes [the difference between the two being cost and management]. Examples include Zayy, Dibbin and Ishtafeina under the Touristic Investment Department of the General Corporation for Social Security.

SECTION II: CRITERIA FOR ESTABLISHMENT

A. Municipal Parks established under MMRAE.

The Ministry of Municipal and rural Affairs and the Environment, **MMRAE**, is the main governmental body that is responsible for planning, zoning, and re-development. Conditions for the establishment of municipal/regional parks (including those under the jurisdiction of **GAM, JVA and ARA**) are defined by the Cities, Villages and Buildings Planning Law [79/66] in articles 14, 15, 19, 40.

- The law depicts that places that are usually used for recreation by the community should be marked on a topographic map before development and re-zoning of any area. Those places are acknowledged to planners by the pattern of popular use only. Regional zoning maps are introduced by planners. A skeletal zoning map, or a master plan, will include provisions for recreational areas and parks. They also include provisions for the protection of natural reserves and areas with historic and archaeological significance (sites, caves, buildings, structures, antiques, and old remains that have archaeological, or historic or architectural significance.)
- There does not seem to be any design criteria for this category. However, the Central Department for Urban and Rural Planning at **MMRAE** identifies one of its roles as "providing advice for local zoning authorities in the update of skeletal zoning maps and performing the necessary environmental and social surveys." The Department also prepares typical regulations dealing with zoning issues.
- Those parks are designated, planted and fenced by **MMRAE** then turned over to the municipality (**MMRAE, GAM, ARA, and JVA**) or a third party that would own and manage the park like Zayy, Dibbin and Ishtafeina under the Touristic Investment Department of the General Corporation for Social Security.

B. Regional Parks established by Concessions from The Prime Ministry.

Different criteria of establishment were applied for the designation of the 7 nature and wildlife reserves under the mandate of the RSCN, the Petra National Park, the Red Sea Marine Park and more recently the Mount Nebo and Umm al-Rasas Archaeological Park. The criteria of establishment and the designation process of these parks will be addressed by other members of the JPP team.

SECTION III: DESIGNATION PROCESS

A. Regulations

The regulations of the Cities, Villages and buildings Planning Law [79/66] stipulates a process of designation that clearly applies for regional and municipal parks. The process starts with the demarcation of places used for recreation by the community on a topographic map prior to the preparation of regional zoning plans [article 14]. A local planning committee is stipulated to co-ordinate with the Central Department for Rural and Urban Planning at the MMRAE in the preparation of the regional zoning maps [article 15/1]. Before the approval and ratification of the skeletal zoning maps a period of two months is given for objections by the community or any government or non-government institution [article 21/1]. After applying the alterations that are approved by the Higher Planning Council a one-year temporary period of ratification is applied after which the plan is announced in the official gazette at the Local City Planning Committee [article 22 and article 20].

B. Implementation

This process is implemented through the Central Department for Rural and Urban Planning at the MMRAE [article 7, c,d]. It applies to the planning of all types of services and activities including: [15/1/f] public amenities (shopping areas, shops, schools, places of prayer, public meeting areas, theatres, cinemas and parks); [15/1/h] public and private squares (landscaping, agricultural areas, orchards, forests parks, nature reserves, empty plots of land, cemeteries, quarries and mines); and, [15/1/i] protection of sites, caves, buildings, structures, antiques, and old remains that have archaeological, or historic or architectural significance. The Planning Department, however, is expected to co-ordinate with the local planning committees and come up with a zoning map based on the local recommendations. This part of the process is rarely implemented and the whole planning process is carried out in the central office in Amman. As a result zoning comes out oblivious of the natural and cultural resources in the area as well as the popular recreation areas.

C. Weaknesses

The designation process of recreational parks seems to be quite regulated. It provides an existing framework for a systematic designation process that has the potential of accommodating public involvement. The process also results in a "designation document" in the form of publication in the official gazette. However, the process suffers from major weaknesses including:

- Local and regional planning committees [article 8, and article 9 d-b] do not include representatives of environmental concerns including natural and cultural resources. Representatives of these concerns are also not represented in the Higher Planning Council.
- The lack of co-ordination between the Central Department for Rural and Urban Planning at the MMRAE and the Local and regional planning committees from towns and villages as stipulated by the regulations.
- This designation process does not apply to special concessions granted by the Prime Minister's Department. Different criteria were applied for the designation of the 7 nature and wildlife reserves under the mandate of the RSCN, the Petra National Park, the Red Sea

Marine Park and more recently the Mount Nebo and Umm al-Rasas Archaeological Park. The designation process of these parks will be addressed by other members of the JPP team.

SECTION IV: COMMUNITY RELATIONSHIP TO MUNICIPAL AND REGIONAL PARKS

Recreation is understood as the human interaction with natural and cultural resources with the aim of partaking in a pleasant and invigorating activity. Municipal and regional parks cover large expanses of terrain, by definition, and have national significance. The community's relationship to municipal and regional park is:

- Municipal and regional parks should be established with a community participation as provided for by the Cities, Villages and Buildings Planning Law [97/66]. This practice, however, seems not to be implemented due to the centralisation of the planning and zoning process in MMRAE's main office.
- If communities were not given an active role in the designation process, the approach towards addressing the socio-economic issues will totally ignore: 1) the traditional patterns of recreation partaken by the communities which might include a locally significant welli (holy saint) or a cultural landscape; 2) the transhumance pattern of local life including the wider environmental system that is used by the community for their basic subsistence.
- The community should economically benefit from the park area, when possible, through being given priority in training and job opportunities. The concessions/leases to run public amenities should also be part of the choice given for community members, as convenient.

SECTION V: MANAGEMENT

A. Municipal Parks established under MMRAE.

Only municipal/regional recreation parks that are relatively large and contain representative sample of the natural region should be included in this category. A high ranking regional authority should have jurisdiction over the area to prevent its degradation and abuse by recreation patterns, while its administration should be left to the municipal/regional authority under which it falls. Forest parks like Amman, Ghamdan, Dibbin, Zayy and Ishtafeina fall under this category.

A1 Management Objectives

In managing recreational parks with renewable resources the main objective is enabling and empowering the municipal/regional authorities to maintain sustainability of green areas, planted trees and park furniture while allowing maximum use by people.

A2 Management Recommendations

Management will concentrate mainly on sustainability of the park. The management plan is recommended to include provisions for preventing degradation and abuse of the resource as a result of uncontrolled visitation. The responsible regional authority should be enabled to carry out this task through a national **HRD** plan. Certain concessions or leases could be established within an overall management umbrella.

- Recreation activities will be controlled through a masterplan for the park. The management plan should also consider the carrying capacity of the site.
- An overall masterplan is required for this type of park. The plan will define boundaries, entrance(s), playing grounds, landscape elements, service areas, visitors' centre, Parking areas, ...etc. The masterplan should also take into consideration biodiversity maintenance and avoid habitat degradation. No restricted areas are recommended in this category except if imperative for biodiversity maintenance.
- Entrance fees are recommended to be imposed on this park category. The revenue from the fees and other revenue generating activities should be included in the overall management budget [note: under current regulations revenues should return to the Treasury].

B. Regional Parks established by Concessions from The Prime Ministry.

National parks with significant natural or cultural resources that are relatively large should have a multi-purpose management plan run by a national authorised body. Cultural landscapes including historic city centres, archaeological parks and wildlife reserves fall under this category. Current examples include the 7 nature and wildlife reserves under the mandate of the RSCN, the Petra National Park, the Red Sea Marine Park and more recently the Mount Nebo and Umm al-Rasas Archaeological Park.

B1 Management Objective

In the case of the identification of significant natural or cultural resources parks management should include protection, conservation, preservation and presentation of these resources, as applicable, while allowing for a more controlled recreational use.

B2 Management Recommendations

These parks should be defined as multiple-use management areas. Management provisions should include protection, conservation, preservation and presentation of these resources, as applicable, while allowing for a more controlled recreational use. The management is

recommended to be authorised for a national body. It should be carried out balancing the natural, cultural and recreational uses of the park. The manager must have control over the overall management with specialised assistants in cultural and natural resources. Cultural landscapes including historic city centres, archaeological parks and wildlife reserves fall under this category.

- Recreation activities will be controlled through a masterplan for the park. The management plan should also consider the type of recreational activities allowed in the park. Low-impact activities are highly recommended for this category.
- An overall masterplan is required for this type of park. The plan will clearly define protected zones, zones with limited visitation and recreational zones. The plan of the recreational zone will include boundaries, entrance(s), playing grounds, landscape elements, service areas, visitors' centre, Parking, ...etc.
- Entrance fees are recommended to be imposed on this park category. The revenue from the fees and other revenue generating activities should be included in the overall management budget [note: under current regulations revenues should return to the Treasury].

CATEGORY III: HISTORIC CITY CENTRES.

SECTION I: DEFINITION AND CONTEXT

A. Definition

Any site/building that post-dates A.D. 1700 (1111/1112 A.H.) is not protected under any legislation and thus suffer from destruction, depletion and/or alterations that change its character and style. For the relatively young modern history of Jordan such buildings/sites that date between 1700 and the declaration of the Kingdom would necessarily have a national significance. Those buildings/sites form the basis for our national collective memory. Urban cultural landscapes including the original pattern of use and its development throughout the period also forms an integral part of this memory.

B. Issues Related to the Definition

- Such buildings/sites are usually located within city centres and mostly zoned "commercial" under the pertaining building regulations. Any plot of land zoned as commercial will enjoy more lenient building regulations (for example it is allowed to build on 85% of the plot of land while the percentage for residential areas varies from 36%-48%). Immediate financial gain based on land sell and/or demolition and reconstruction forms the major threat on this resource.

- Such buildings are usually privately owned and, potentially, still being used. This places them in a different category than architectural remains that date earlier than 1700 as those are owned by the Treasury and protected by the DOA and the Antiquities Law. As such, the two categories have different patterns of use and, accordingly, different relationship to the community.

SECTION II: CRITERIA FOR ESTABLISHMENT

A. The National Register for Historic Buildings and Landmarks

Obviously, not every building/site that dates between 1700 and the declaration of the Kingdom should be protected. Historic buildings and sites should be identified and included in a National Register for the Historic Buildings and Landmarks. The National Register will include only significant buildings/sites. Criteria of significance could be social, religious, political or physical. Buildings and sites in the National Register would be given priority in conservation, management and resource allocation. A general database, possibly the one suggested by NEAP, could document all other historic buildings/sites of cultural value but those would not be included in the priority plan.

B. Criteria of Significance

Criteria of significance will be defined by a new body/party that is established under a new legislation for the protection and management of historic buildings/sites. Criteria should take into consideration general issues like size, location, representation of a sample, research needs, economic/tourism potential, ...etc. Different criteria should be defined for:

- City centres of historic significance should be identified for this category. The criteria of significance could be (including but not limited to) commercial, like the centres of Irbid, Salt and Madaba; or national, like Aqaba, Ma'an and Salt.
- Urban cultural landscapes including streets, neighbourhoods or squares should also be identified according to social and economic significance.
- Buildings of special significance based on building type, style, technique, craftsmanship,..... should also be identified for this category.

SECTION III: DESIGNATION PROCESS

This new body/party will have the exclusive authority in the designation process of buildings, sites and landmarks to be included in the National Register for Buildings and Landmarks. Two immediate options for this body/party are:

- A separate department within the MOTA that has an independent status, law and budget similar to DOA. This new department would have a mandate over defining criteria,

monitoring and upgrading the National Register for Historic Buildings and Landmarks, and following-up on building regulations and zoning and development plans.

- This mandate can be incorporated within DOA only if the ceiling of the Antiquities Law was changed from 1700. However, the current budget, expertise and priorities of DOA are not in tandem with this option due to the difference in related expertise needed and destruction issues encountered.

SECTION IV: COMMUNITY RELATIONSHIP TO THE PROTECTED UNIT

The inclusion of any building in the National Register for Historic Buildings and Landmarks entails various "restrictions" on the building and its investment potentials. To be able to implement the conservation measures implied by the listing of any building the issue of the incentives and benefits to the stakeholders should be addressed.

A Stakeholders

The main stakeholders for this category are the owner of the building itself and the surrounding local community. However, buildings/sites are protected for the benefit of a wider group of stakeholders including the visitor/tourist (if the building/site is open to the public), the researchers in pertaining fields and the body/party that is responsible for the administration of listed buildings.

A1 The Owners

Possible benefits for the owners and tradeoff measures include:

- Owners should be granted an economic incentive in return of conservation. This might include certain tax exemptions; financial aid in reconstruction, rehabilitation, restoration and stabilisation; as well as the development of the surrounding urban space to encourage visitation/tourism and private sector investment.
- The owners of listed buildings should be provided by technical aid to help with issues of reconstruction, rehabilitation, restoration and stabilisation. This might be achieved through: (a) training programmes for community members in conservation related skills; (b) creating a technical advisory committee that would act in advisory capacity in connection to the protection of listed buildings.

A2 The Surrounding Community

Possible benefits for the community and tradeoff measures include a major economic incentive based on the development of the surrounding urban space. This might include landscape measures, signage and information, establishing a cultural or public amenity...etc. Such measures will increase the levels of use/visitation for the area as well as the potential interest of investors.

B Involvement in Management

The owners of listed buildings and the surrounding community should be directly involved in the management plan for listed buildings. This entails total transparency for short- and long-term plans. Their involvement might take the form of participation in decision making groups that has the role of:

- Prioritising issues to be addressed
- Involvement in the choice of development options for the surrounding urban space
- Training in conservation skills and related crafts

SECTION V: MANAGEMENT

A. Management Objectives

The management of historic buildings and historic city centres up until now has been carried out on ad hoc basis; and, mostly by people who are not adequately trained. There has to be a national programme of training and education to ensure professional involvement in management.

A1. Historic City Centres and Urban Cultural Landscapes

Historic City Centres and urban cultural landscapes should be managed as multiple use recreational areas. Management should include protection, conservation, preservation and presentation of historic buildings and areas, as applicable, while allowing for a more controlled recreational use for the urban space itself. This might include:

- Special zoning provisions that will define development criteria for the protected zone; including the imposition of buffer zones and viewsapes.
- Special landscape provisions to make the area more inviting for visitors.
- Special measures to impose "pedestrian only" option for certain areas and times.

A2. Historic Buildings

Management of buildings with historic significance entails the enforcement of a "planning permission" requirement for alterations or refurbishment of buildings included in the National Register for Historic Buildings and Landmarks. This might include:

- Special measures to provide compatible use for the building that requires minimal alteration of the building structure, or site, or original use if feasible.
- Special planning measures to ensure that the original character of the building or its distinguishing features are not altered; including successive additions that might have acquired significance on their own right.

- Special technical measures to ensure that the repair of deteriorating significant architectural features (or the replacement when needed) is based on accurate duplication of features substantiated by historical or physical evidence.

B Regional Parks with Significant Cultural Resources

The historic city centres and urban cultural landscapes that are designated as recreational/park areas should be defined as multiple-use management areas. Management provisions should include protection, conservation, preservation and presentation of these resources, as applicable, while allowing for a more controlled recreational use. The management is recommended to be authorised for a national body, possibly GCEP, that would balance the natural, cultural and recreational uses of the designated area. The manager must have control over the overall management, including HRD and education, with specialised assistants in cultural and natural resources. The administration of the resources that are listed in the National Register for Historic Buildings and Landmarks falls onto the recommended body/party at MOTA.

SECTION VI: REGULATIONS

It is recommended to establish a separate department for historic buildings and landmarks, probably within the MOTA, that has an independent status, law and budget similar to DOA. The establishment of a new department at MOTA necessarily requires a new law. The law will stipulate the establishment of National Register for Historic Buildings and Landmarks. Regulations for the protection and management of buildings and landmarks included in the register will be issued according to the law and published in the official gazette.

MANAGEMENT RECOMMENDATIONS FOR THE JORDAN PROTECTED AREAS SYSTEM

The Law of Environmental Protection [12/1995] stipulates the establishment of the General Corporation for Environmental Protection GCEP. Article 5/h defines one of the GCEP's roles as "to coin basis and conditions for the establishment of natural reserves and national parks and to monitor them and all their relevant issues according to regulations published by the rules of this law." This article can act as a benchmark in the answer for a management umbrella for the Jordan Protected Areas. It is recommend that a comprehensive management plan, preferably under the GCEP, is established. This plan should address issues including:

A. Co-ordinate the Criteria Of Designation And Designation Documents:

Park designation in Jordan is carried out either as a Prime Ministry special concession or under the Cities, Villages and Buildings Planning Law [79/1966] at MMRAE . GCEP is recommended to:

- Co-ordinate the designation of protected areas under the **MMRAE**
- Ensure community participation and ensure the presence of environmental specialists on planning committees.
- help define the boundaries of parks designated as special concessions.
- keep a register of the designated parks and an inventory of their resources.

B. Maximise Efficiency Of Management And Organisational Structures.

The administration of the several park categories may fall under different governmental or private or corporate institutions. The role of the **GCEP** is:

- Provide the co-ordination between the **DOA**, the new department/body responsible for historic buildings, the **MOA**, **MOWI** and the **JVA**.
- Approve zoning and masterplans for the different park categories.
- Co-ordinate between the international research programmes and international funding agencies
- Balance the natural, cultural and recreational aspects of the protected areas.
- Train/employ its own park rangers/guards and provide them with basic environmental training.

C. Maximise Potentials For Information, Awareness And Education.

As part of its managerial role, it is recommended that the **GCEP**

- Devises a national programme of education and public awareness.
- Be responsible for a national HRD programme

D. Maximise Economic and Environmental Benefits.

As part of its managerial role, it is recommended that the **GCEP**

- Promote ecotourism in the Jordan Protected Areas.
- Encourage local job opportunities and stakeholder involvement.

REGULATION AND INSTITUTIONAL POLICY RECOMMENDATIONS

- The Law of Environmental Protection [12/1995] stipulates the establishment of the General Corporation for Environmental Protection **GCEP**. Article 5/h defines one of the **GCEP**'s roles as "to coin basis and conditions for the establishment of natural reserves and national parks and to monitor them and all their relevant issues according to regulations published by the rules of this law." This article provides us with a benchmark for a management umbrella for the **JPP**. The regulations upon which the **GCEP** is to partake the managerial role for parks are not yet issued. It is recommended that those regulations take into consideration the above recommendations related to park designation and management.

- The regulations of the Cities, Villages and buildings Planning Law [79/66] stipulates a process of designation that clearly applies for regional and municipal parks. This process is implemented through the Central Department for Rural and Urban Planning at the MMRAE. The Planning Department, however, is required to co-ordinate with the local planning committees and come up with a zoning map based on the local recommendations [article 7, c,d, e]. It is recommended that these articles should be enforced by special "pronouncements or directives". Special pronouncements should also be introduced to ensure the representation of natural and cultural specialists on Local and Regional Planning Committees as well as the Higher Planning Council.
- It is recommended to establish a separate department for historic buildings and landmarks, probably within the MOTA, that has an independent status, law and budget similar to DOA. The establishment of this department necessarily requires a new law. The law will stipulate the establishment of National Register for Historic Buildings and Landmarks. Regulations for the protection and management of buildings and landmarks included in the register will be issued according to the law and published in the official gazette. The role and mandate of this new department cannot be incorporated within DOA due to the difference in related expertise needed and destruction causes encountered. This new department would have a mandate over defining criteria, monitoring and upgrading the National Register for Historic Buildings and Landmarks; following-up on building regulations and zoning and development plans.

ANNEX I

ACRONYMS

ARA	Aqaba Region Authority
DOA	Department of Antiquities
GAM	Greater Amman Municipality
GCEP	General Corporation for Environmental Protection
HRD	Human Resource Development
JPP	Jordan Park Policy
JVA	Jordan Valley Authority
MMRAE	Ministry of Municipal and Rural Affairs and the Environment
MOA	Ministry of Agriculture
MOTA	Ministry of Tourism and Antiquities
MWI	Ministry of Water and Irrigation
NEAP	National Environmental Action Plan
RSCN	Royal Society for the Conservation of Nature

ANNEX 2

REFERENCES

LAWS:

Environmental Protection Law [12/1955]

Municipalities Law [29/1955]

The Naming and Numbering of the Streets and Buildings of Amman.[55/1965]

The Cities, Villages and Buildings Planning Law [79/1966]

The Agriculture Law [20/1973]

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The General Corporation for Housing and Urban Development Law [28/1992]

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ANNEX 3

RELEVANT ARTICLES IN CURRENT LEGISLATION¹

Environmental Law [12/1955]

Article 5 [role of GCEP]

- Article 5/h "to coin basis and conditions for the establishment of natural reserves and national parks and to monitor them and all their relevant issues according to regulations published by the rules of this law."

Municipalities Law [29/1955]

[[> 2500 village. > 2500 municipality --applies also to Amman]]

Article 14 [article defining the duties of the Municipal Council]

- 41/a/12 "Parks: Establishment of public squares, gardens, parks, baths and swimming areas in pools, lakes and on the sea shore; and, thrie monitoring and regulation".
- Article 41/G "The Municipal Council can issue direct regulations with regards to any issue under the jurisdiction if the municipality regardless of any article in the municipalities law."

The Naming and Numbering of the Streets and Buildings of Amman.[55/1965]

Article 3: [article defining the role of the Mayor of Amman.]

- 3/c Categorising "Public Parks" according to types and specifications in groups under: Walled garden; garden with trees walled or unwalled; dense collection of trees on level ground, Great tree with spreading branches; meadow; park; and, forest.

The Cities, Villages and Buildings Planning Law [79/1966]

Article 14 [Preparation of a topographic maps that includes:...]

¹. This translation of the relevant articles is done for the purpose of this report

- 14/j: public amenities (schools, religious places, shops, cinemas, recreational areas and government buildings.)
- 14/l: Natural, economic, human and animal wealth.

The law depicts that places used for recreation should be marked on a topographic map before development and re-zoning. Those places are acknowledged to planners by the pattern of popular use alone. This seems to be a likely way of indirect public involvement in the choice and designation of their recreational areas.

Article 15 [regional zoning maps should include....]

- 15/1/f: Public amenities including shopping areas, shops, schools, places of prayer, public meeting areas, theatres, cinemas and parks, related to the number of users.
- 15/1/h: Public and private squares including landscaping, agricultural areas, orchards, forests parks, nature reserves, empty plots of land, cemeteries, quarries and mines.
- 15/1/i: protection of sites, caves, buildings, structures, antiques, and old remains that have archaeological, or historic or architectural significance.

Regional zoning maps include provisions for recreation areas and parks. They also include provisions for the protection of natural reserves and areas with historic and archaeological significance.

Article 19 Skeletal zoning maps of cities should include

- 19/2/1: Public amenities including shopping areas, shops, schools, places of prayer, public meeting areas, theatres, cinemas and parks, related to the number of users.
- 19/2/m: protection of sites, caves, buildings, structures, antiques, and old remains that have archaeological, or historic or architectural significance.

Article 40 protection of trees, gardens, parks, and forests....(is it rangeland??)

- 40/1 The local planning committee or the regional planning committee [according to the area] in co-ordination with the Ministry of Agriculture will issue an order called by this law as the order for the preservation of trees and flowers concerning any plant, or trees, or "forests" defined by the order and located in sidewalks, parks or public gardens....."

This article details the degrees of responsibility for the protection of the natural resources in designated park areas,

The General Corporation for Housing and Urban Development Law [28/1992]

Article 8 [duties of the board of directors of GCHUD]

- Article 8/e: Buying or confiscating land for the purpose of the construction of projects and the preparation of design documents for housing units and public amenities.

JORDAN PARK POLICY STUDY

ARCHAEOLOGY

**C. J. Lenzen
USAID/Jordan
May, 1996**

167

I. Policy

A. Definitions

An "archaeological park" is a designated area which is either part of an antiquities site or an entire site. An "antiquities site" is defined by the Antiquities Law of the Hashemite Kingdom of Jordan, Articles 2, 4, 5, 7 and 8.

B. Establishment Criteria

An "archaeological park" will be designated and defined, including boundaries, by the Director-General of the Department of Antiquities and the Minister, per the definition or declaration of an antiquities site in the Antiquities Law, Articles

The boundaries must be determined through archaeological survey. The designated park area may include the entire archaeological site.

An "archaeological park" may be part of a "cultural landscape", "heritage corridor", an urban space, a rural space or an area designated as a bio-sphere. An "archaeological park" cannot exist in and of itself; it exists in conjunction with one of the abovementioned categories. This assumes a zoning and land-use patterning system which will allow for integrated and wholistic regulations and management processes to be developed. Not all designated antiquities sites will be declared as "archaeological parks". The designation of an antiquities site as an "archaeological park" will be determined by: the unique contribution that the site makes to the understanding of Jordan's past; the inclusion of an antiquities site into one of the abovementioned categories.

Final designation will only occur once the park has been announced in the Official Gazette. This is as per the identification of an antiquities site.

C. Process

1. Recommended Regulations

The Antiquities Law establishes the framework from which regulations for "archaeological parks" may evolve.

The Minister and the Director-General of the Department of Antiquities will establish a "parks" unit within the Department of Antiquities. This unit will have the responsibility of coordinating with a similar unit within the Environmental Corporation formed under the National Environmental Law; whereas, the Director-General and/or Minister will coordinate with the Director of the Environmental Corporation.

The parks unit will have the sole regulatory and management responsibilities for "archaeological parks". This will necessitate coordination with other management and statistical units, either governmental or non-governmental.

An "environmental audit" or "inventory" will be done for each designated archaeological park to determine the relation of the site to bio-diversity issues and needs. This information will be factored into the implementation of the concept of "carrying capacity" for each site.

Following designation, a strategic plan will be developed by the parks unit for the in situ archaeological remains and the material culture remains scientifically excavated. This plan will include: how movable and immovable remains will be stabilized, consolidated, conserved and/or preserved; the housing of movable remains, i.e., site, regional or national museum; future excavations at the designated site; the presentation of the information to the general public; the presentation of the information to the academic public; the identification of necessary resources, including expertise and financing; a master plan for visitors to the site. As the archaeological park will be part of another category, i.e., a cultural landscape or heritage corridor, planning will occur in coordination with all concerned authorities. As regards the archaeological remains, the Department of Antiquities will have the sole responsibility regarding preservation and use.

Each designated park will have its own requirements based on the type of site, i.e., urban/rural, early antique/late antique, significance to visitors. These will be clearly articulated in the strategic plan for the archaeological park.

2. Recommended Management Plan

Each designated archaeological park will have a senior park manager. Archaeological inspectors will be part of the staff and report to the manager. The park manager will liaise with other authorities depending on need. Management plans for sites may vary.

[NB: I am not quite sure about how this will work. Two examples may help: 1. Wadi Rum: The significance of Wadi Rum is the natural beauty of the site, although there are archaeological remains within the area. What I am suggesting is that the senior park manager for Wadi Rum is a bio-diversity or natural resources person with management training. An antiquities inspector or inspectors would then be secondary to the manager; however, the problem is that there cannot be two authorities to whom someone reports. The antiquities inspector would liaise with the park manager. This, however, necessitates an open management style as the inspector would report back to the Department of Antiquities parks unit. 2. Petra: The significance of Petra is the central city antiquities and its importance as a tourist destination. The preservation of the archaeological remains is of paramount importance, although the watershed, etc., is of significance. The senior park manager in this case needs to be a trained archaeologist with management training.]

A buffer zone will be defined around the stabilized standing remains at the site. This buffer zone will be determined by: viewscapes, land tenure surrounding the site, entrance/egress issues, i.e., the master site plan.

Based on the master plan for the site, the management plan will include: the necessary number of trained personnel, e.g., archaeologist/s, preservation specialists, bio-diversity specialist/s, information/education/communication specialist/s, "rangers", a community liaison person; a visitor system within the site; safety for the site and the visitor; interpretation at the site; a fee structure; a carrying capacity based on both the needs of the

antiquities and the visitor , i.e., "social carrying capacity"; a monitoring plan to ensure the preservation of the resource and to satisfy visitors; and, necessary support and maintenance staff.

The parks unit will be headed by a trained archaeologist who has been an inspector in the Department of Antiquities and who has received specific training in park development and management. The parks unit staff will consist of the necessary individuals to develop strategic stabilization plans and management plans for each park. Visitors will not be allowed to the site prior to this strategic plan being implemented.

II. Community Relationship to the Archaeological Park

The categories of the community need to be defined initially. These are: citizens living adjacent or within the vicinity of the antiquities site designated as a park; Jordanians in general; regional visitors; and, international visitors. The last three categories will be served by a detailed management plan which allows for effective interaction between the park unit and the visitor.

For the citizens living adjacent or within the vicinity of an archaeological park, the priorities are: employment within the management structure of the park; the creation of an environment in which they feel they are controlling the use of the park; the ability to benefit from revenue while at the same time knowing that the resource cannot be destroyed. The latter may take the form of businesses beyond the buffer zone. Depending on the size and the importance of the park, several local citizens can be trained to be rangers, community liaison people, information officers, and visitor guides. However, visitor guides should move beyond the normal definition of tour guides presently seen at sites. Visitor guides could participate not only in the telling of the archaeological story but in the story of the most recent past concerning the site, e.g., prior to the area being designated. Maintenance staff and support staff can all be hired locally. All of this will necessitate a detailed human resources development plan which is supported and financed by all concerned agencies.

The local citizens must play a major role in the designation of the boundaries of the archaeological park. The reason for this stems from the legality of land ownership as well as the traditional land ownership patterns which are still recognized in most of the Kingdom. If this were done, the local community, having whatever economic mode of accommodation, will become part of the development of the park.

A possible process for community involvement has as its foundation the inspectors of the Department of Antiquities within the districts. These are respected and knowledgeable individuals who are familiar with the antiquities and current understandings of the local citizenry. City [which may have to be divided by area or quarter]/town/village inhabitants need to discuss their own sites with responsible individuals who will interpret what they need, want and understand. This applies to the Bedu as well. All information will be coordinated with other concerned agencies or "experts". Information acquired will become part of the designation, the regulations, the management plan and may form the basis for an employment plan.

III. Defining Archaeology and Archaeological Remains

A. Archaeology

1. Definition of Archaeology: Antiquities Law

The definition of archaeology is subsumed within the definition of antiquities in the Antiquities Law (Article 2:4, 5, 6, 7, 8).

Article 2:4 Antiquity [no changes between 1976 and 1988]

- "A- Any object, whether movable or immovable, which has been constructed, shaped, inscribed, erected, excavated, or otherwise produced or modified by humankind earlier than the year 1700 A.D. including caves, sculpture, coins, pottery, manuscripts and all sorts of artefact that indicate the rise and development of sciences, arts, manufactures, religions, and traditions relating to previous cultures, or any part added thereto, reconstructed or restored at a later date.
- B- Any object, movable or immovable, as defined in the previous subsection referring to a date subsequent to the year 1700 A.D., which the Minister may declare to be antique by order published in the Official Gazette.
- C- Human, plant and animal remains going back to a date earlier than the year 600 A.D."

Article 2:5 An Archaeological Site

- "A- Any area in the Kingdom which has been held as a historical site in accordance with previous laws.
- B- Any other area which the Minister decides contains antiquities, or is association with important historical events; provided such decision is published in the Official Gazette."

Article 2:6 Immovable Antiquities

"Are the stable antiquities which are connected to the earth, whether constructed thereon or buried therein including those under inland and territorial waters."

Article 2:7 Movable Antiquities

"Are the antiquities which are disconnected from the earth or from immovable antiquities and can be displaced without damaging it or damaging the antiquities linked therewith or the place where it was discovered."

Article 2:8 Excavating

"Is the act of digging, exploring, and investigating with the aim of finding movable or immovable antiquities. Accidental finding of antiquities does not constitute excavation."

2. Discussion of Definition

For the most part, the above definition suffices, although it needs to be stated more broadly and to reflect the changes in archaeology as conducted in the Near East since the inception of the Antiquities Law. The definition of archaeology as stated in the Antiquities Law is limiting based on the number of sites in the country and the importance of some of the sites as a tourism base.

Archaeology is the study of the remains of human habitation which are visible on the surface as well as those which are below the ground, i.e., those that can only be determined through the controlled process of scientific archaeological excavations, whether these are salvage, rescue or long-term in nature. Whatever humans made or used in the past is interpreted based on the soil stratification at a particular site. A site is interpreted for an understanding of the social history of first the site, second the site within a broader context of other sites, third regionally and fourth as a contribution in general to an understanding of the human past.

Archaeological interpretation is dependent upon the association of the soil stratification with all of the material culture remains, e.g., objects, buildings, found in the soil, as well as any extant historical documentation. This includes architectural remains. Out of context, remains are merely *objets d'art*. The archaeologist's interpretation of a site plays a major role in the presentation of the site.

Archaeological sites are identified and defined through survey and excavation. Generally, the sites excavated or researched are dependent on scholars areas of interest and/or expertise. Although academic archaeology is defined as "everything from yesterday back to the beginning of human use of a designated area or space", individual countries have determined *termini post quem* for the date, e.g., anything over one hundred years is defined as part of the archaeological record and may not leave a country without a legal and customs framework permitting the export.

One of the basic understandings of archaeology is that it is highly unlikely that those who once inhabited a place were asking the kinds of questions of the material culture which archaeologists do and that the archaeologists of the future will be asking different questions than those of today. This emphasizes the necessity of accurate documentation in the process of excavating a site, which is essentially destruction of the evidence. An archaeological site's importance must be determined in an as objective a manner as possible within a framework that attempts to understand the importance of the past.

Archaeologists discuss the changes in human habitation of Jordan by using a system of "archaeological periods".

Archaeological Periods
(Based on historical periodization)

Paleolithic	+800,000	-	17,000 BC
Epipaleolithic	17,000	-	8,500 BC
Pre-pottery Neolithic	8,500	-	6,000 BC
Pottery Neolithic	6,000	-	4,500 BC
Chacolithic	4,500	-	3,200 BC
Early Bronze	3,200	-	1,900 BC
Middle Bronze	1,900	-	1,550 BC
Late Bronze	1,550	-	1,200 BC
Iron Age	1,200	-	331 BC
Hellenistic	331	-	63 BC
Nabataean	312	- AD	106
Roman	63	- AD	332
Byzantine	AD 332	-	641
Rashidun	641	-	661
Umayyad	661	-	750
Abbasid	750	-	945
Fatimid	945	-	1100
Zenghid	1100	-	1187
Ayyubid	1187	-	1260
Mamluk	1260	-	1516
Ottoman	1516	-	1918
Modern	1918	-	To the Present

3. Archaeology as part of Cultural Resources

Archaeological sites/remains are only one part of cultural resources. Cultural resources are both tangible and intangible examples of what is identified as being significant within a particular context. The context may be religious, ethnic, national or broadly regional.

Intangible cultural resources may be linguistic patterns and lifestyle patterns, e.g., transhumant behavior, migrations, neither of which may appear within the historical documentation or need appear in the archaeological record.

Tangible cultural resources are the archaeological remains, sites or places which have significance for the nation's or a local community's memory or history, as well as those indicators of lifestyle changes, e.g., baskets, particular kinds of embroidery, rugs, etc. The latter may not fall comfortably into a definition of "archaeological" remains, but is a tangible indication of the "past". Whether or not these resources are valued is a decision made by the community and may not be covered by legislation.

4. Archaeology and Architectural Remains

By definition, architectural remains occurring on an archaeological site are part of the record of the history of occupation at that site. However, placing emphasis on one archaeological period over another leads to placing emphasis on one type of architectural remain.

Architectural remains may be defined as: any evidence of the built environment within the archaeological record and any evidence of post-dating the Antiquities Law, i.e., following A.D. 1700. Categories of architecture are determined; for example, administration, civic, religious, public, domestic [including the terms "vernacular", "traditional" or "elite"].

Architecture within the archaeological context is often preserved and presented to the public. Unfortunately, this results in the interpretation of archaeology, defined as explicating the social history of the past, as merely those monumental remains of the past built environment. Post-A.D. 1700 architectural remains are not protected by legislation and are randomly destroyed rather than being preserved as evidence of the continuum of human occupation of the country.

Article 2:4A of the Antiquities Law may form a basis for preservation of architectural remains post-dating A.D. 1700. The law defines an antiquity as: "Any object, whether movable or immovable, . . . , or any part added thereto, reconstructed or restored at a later date." The challenge, however, is to show archaeologically that the architectural remain is founded on earlier evidence.

Because it is uncommon for architectural remains post-dating A.D. 1700 to be viewed in relationship to the archaeological remains or as aspects of the continuity of occupation within the country, a disjuncture occurs. One could argue that neither the distant past or the recent past are seen as valuable.

B. Archaeology: The Law and Agreements

1. The Antiquities Law

The law as written, although confusing in sections, is adequate if there is enforcement of it. Enforcement will require human resources development within a context of upgrading of skills, techniques and management.

Article 3.A. defines the role and responsibilities of the DOA:

1. To execute the archaeological policy of the State.
2. To estimate the archaeological value of antiquities and sites and to evaluate the importance of each antiquity.

3. To administer antiquities in the Kingdom, supervise, protect, maintain, record, beautify the vacinities thereof and exhibit them.
4. To propagate archaeological culture and establish archaeological institutes and museums.
5. To excavate for antiquities in the Kingdom.
6. To assist in the organization of the various museums attached to governmental activities in the Kingdom; including historical, technical and folkloric museums.
7. To cooperate with local, Arab and foreign archaeological institutions for the service of national archaeological culture and consciousness; in accordance with current laws and regulations.
8. To supervise the possession and disposition of antiquities in accordance with the provisions of this law, and the regulations, decisions and instructions which are issued in accordance therewith.

Throughout the law, the terms "Director", "Department" and "Government" are almost used interchangeably. A management system [hierarchy?] is unclear, although the Department of Antiquities is organized with district offices staffed with inspectors.

Further discussion of specific articles can be found within the "Issues" section.

2. The Environmental Law

There are two sections of the recently approved "Law of Environment Protection" which are pertinent to archaeology and "archaeological parks".

Article 5h: "To put the conditions and bases of establishing wild resereves and national parks and to monitor them and all of the relevant issues according to a regulation published by the rules of this law."

Article 21: "The specifications and conditions which should be available in any wild or aquatic reserve or in a national park are determined by a regulation to conserve and environmentally protect them."

The above wording is taken from the MOP provided translation of the Arabic Law. The environmental law does not mention antiquities or archaeological sites specifically. However, the conflict will arise when an area with archaeological remains is determined to be a "national park".

3. Tourism

4. Agreements

In 1992, two agreements were signed: one with the National Resources Authority and one with the Ministry of Public Works. It is unclear whether these are still binding. They appear to be more "gentlemen agreements" rather than legally binding documents.

Both of the agreements target the extant definition of archaeological remains, i.e., pre-A.D. 1700. The National Resources Authority agreement specifies that "Cultural Resources Impact Assessments" will be part of the overall "Environmental Impact Assessment" process conducted by the authority. However, in neither agreement, is the process adequately defined.

III. Archaeological Remains as Parks

As archaeological sites are protected areas under the extant law, the definition of "archaeological parks" as protected areas is not sufficient. Once a site has been designated and the boundaries established it is protected.

IV. Issues

The following list of issues is in priority order based on the main "category". It is the analysis of these issues which forms the basis for the policy statements in "I. Policy" above.

A. Archaeological Issues

I. ISSUE: *The Department of Antiquities is the sole authority responsible for antiquities as defined by law.*

S: Given proper human resources development and budget, this allows for the promulgation of a national strategy relating to antiquities.

W: There is a lack of enforcement of the law.

O: There is the opportunity to enhance the existing system and implement the law in order to protect archaeological sites.

T: Lack of human and financial resources lead to the negation of the archaeological resources.

Law and Discussion: The law confirms this. This is an issue only insofar as the rapid pace of modern development, the increasing awareness of the benefit of international tourism to the economy and the fact that antiquities form the tourism base all combine to increase the pressure on the DOA. With limited resources and without the mandate to force other governmental agencies to cooperate, it is difficult

for the DOA to continue to develop, use modern methodologies and to contribute in a positive manner to the development of the country.

2. **ISSUE:** *The arbitrariness of the date for an antiquity, i.e., pre-A.D. 1700, restricts the understanding of what is an antiquity.*

S: Although prehistoric remains, i.e., those dating to pre-2500 B.C., are not specifically mentioned, this does allow for their preservation.

- W: Jordan is "out of synch" with other nations in the identification of its resources, i.e., that archaeological remains refer to yesterday and back in time; thus, including wider concepts of cultural resources encompassing ethnoarchaeology and ethnohistory.
- O: With this terminus date, it is possible to emphasize early inhabitation periods and to re-design preservation activities for historical periods other than Roman, Byzantine and early Islamic.
- T: The last two hundred years, i.e., the end of the Ottoman Turkish occupation of the region, the British Mandate period and including early Hashemite history, are excluded from an understanding of the continuum of human habitation.

Law: Article 2:4 Definition of an antiquity

- "A- Any object, whether movable or immovable, which has been constructed, shaped, inscribed, erected, excavated, or otherwise produced or modified by humankind earlier than the year 1700 A.D. including caves, sculpture, coins, pottery, manuscripts and all sorts of artefact that indicate the rise and development of sciences, arts, manufactures, religions, and traditions relating to previous cultures, or any part added thereto, reconstructed or restored at a later date.
- B- Any object, movable or immovable, as defined in the previous subsection referring to a date subsequent to the year 1700 A.D., which the Minister may declare to be antique by order published in the Official Gazette.
- C- Human, plant and animal remains going back to a date earlier than the year 600 A.D."

Discussion: Altering the Antiquities Law date will not solve the problems relating to architectural remains post-dating A.D. 1700. Presently, the DOA lacks the capability to include these remains in the definition. With human resource development as well as increases in budget allocations, it might be possible to alter the date of the law. However, a more appropriate solution might be the creation of a "national landmarks" department within the MOTA. This department could be equal to the other two departments, T and the DOA, with a Director-General who would coordinate with the other departments and with municipalities.

3. ISSUE: *Although there is an antiquities law, there is a lack of enforcement.*

- S: No strength is identified.
- W: The law is meaningless without the ability to enforce it.
- O: No opportunity is identified.

T: The lack of enforcement leads to illicit trafficking of material culture remains for immediate financial gain.

Law: Article 27

"A punishment by imprisonment of not less than one and not more than three years plus a penalty of 200 dinars shall be imposed on:

- A. Anyone who excavates without obtaining an excavation permit according to the provisions of this law.
- B. Anyone who trades with antiquities."

Discussion: When an artifact is removed from its context, the significance of the remain is lost and consequently it becomes merely an objet d'art and gives no indication of social history. In order to acquire material culture remains, sites are randomly destroyed: once the soil is excavated the "record" of human inhabitation is lost. Because of the lack of private involvement [cf. Specifically Archaeological Issue #6, below] in archaeology, there is little or no sense of "ownership" except for immediate financial gains, i.e., the trafficking in cultural property.

4. **ISSUE:** *All archaeological sites are protected areas as defined by the law.*

S: There is no need to "re-invent the wheel".

W: Archaeological sites are not always clearly defined.

O: There is the opportunity to define sites within a broader concept. This may lead to an understanding of "cultural landscapes".

T: Archaeological remains may take precedence over the needs of the present population.

Law: Article 2:5 An Archaeological Site

- "A. Any area in the Kingdom which has been held as a historical site in accordance with previous laws.
- B. Any other area which the Minister decides contains antiquities, or is associated with important historical events; provided such decision is published in the Official Gazette.

Discussion: Article 2:5 in combination with Article 4 could provide for an integrated approach; however, the "archaeological register" needs to be defined.

5. **ISSUE:** *Archaeological sites are difficult to delimit.*

S: Anything can be part of the "site", i.e., the surrounding area.

- W: The above is also a weakness. Traditionally, a site only equals architectural remains.
- O: A site is defined in the "Antiquities Law".
- T: Only sites with monumental architectural remains are defined as "significant" and/or "important".

Law: Article 2:4 Definition of an antiquity

- "A- Any object, whether movable or immovable, which has been constructed, shaped, inscribed, erected, excavated, or otherwise produced or modified by humankind earlier than the year 1700 A.D. including caves, sculpture, coins, pottery, manuscripts and all sorts of artefact that indicate the rise and development of sciences, arts, manufactures, religions, and traditions relating to previous cultures, or any part added thereto, reconstructed or restored at a later date.
- B- Any object, movable or immovable, as defined in the previous subsection referring to a date subsequent to the year 1700 A.D., which the Minister may declare to be antique by order published in the Official Gazette.
- C- Human, plant and animal remains going back to a date earlier than the year 600 A.D.

Article 2:5 Definition of an archaeological site

"Any area in the Kingdom which has been held as a [sic!] historical site in accordance with previous laws." [This ignores pre-history, unless history is defined broadly as evidence of human inhabitation.] "Any other area which the Minister decides contains antiquities, or is association with important historical events; provided such decision is published in the Official Gazette."

Discussion: By defining sites as those with monumental architecture as significant, emphasis is placed on those dating from the Roman, Byzantine and early Islamic, e.g., Umayyad and Abbasid, periods. Occasionally, an earlier site is included if the remains easily can be described as monumental, e.g., a rujm, khirbet or temple from whatever period. This also means that stone architectural remains are emphasized as there is a little or no preservation of mudbrick architectural remains.

6. ISSUE: *Archaeological sites are confused with architectural remains which date to pre-A.D. 1700.*

- S: Several sites, e.g., most of the decapolis cities, have been excavated, preserved and minimally presented because of the architectural remains. As well, monumental remains for the Iron Age and the Hellenistic period, e.g., rujum and khirbat, have not been destroyed.
- W: The confusion leads to period specification for excavation and visitor priorities.
- O: Architectural remains could be re-defined to include those following A.D. 1700 and those made of other materials than stone, e.g., mudbrick.

122

T: Significant archaeological data are unknown and, therefore, are more likely to be destroyed in the process of development.

Discussion: Although the Antiquities Law states clearly that there is a linkage between "movable" and "immovable" antiquities, the emphasis is placed on the latter. This is large architectural remains.

7. **ISSUE:** *Archaeological remains, however defined, are not understood within a context which includes intra-site, inter-site, regional and natural environmental factors.*

S: Several monuments have been preserved, conserved and/or restored.

W: Archaeological remains are viewed as monumental or "pretty" and not as representative of a past to be taken into the future or from which one learns and earns.

O: No opportunity is clear from the issue.

T: Without understanding the archaeological remains within their context, it is unlikely that boundaries for protected areas can be defined allowing for an integrated planning system.

Discussion: Because there is no national strategy relating to archaeological survey, excavation or preservation of the remains, the identification of what is significant is limited to monumental remains. As well, the importance of these remains are determined by the history of archaeological research in the country as well as in the region. The determination of "significant" has generally been made by non-local archaeologists who have excavated and researched sites based on their own scholarly interests. Although this is not necessarily negative, it does mean that there is biased representation in that which has been preserved.

8. **ISSUE:** *Archaeological sites are often located in the exact places where people choose to live today.*

S: No strength can be identified.

W: Because of the lack of benefits to citizens, archaeological sites are destroyed without documentation.

O: Sites could be integrated into the modern fabric by using creative planning and development schemes, i.e., remains can become part of private gardens with tax benefits, or part of public space.

T: The continued population growth and the needs of the population means that the destruction of sites exceeds the ability to preserve and/or conserve them, let alone present them to visitors.

Law: Article 5 of the Antiquities Law

- A. The Government shall be the sole owner of immovable antiquities and no other authority shall by any means whatsoever, appropriate these antiquities or raise any defences against the State by way of right of ownership, prescription or other defences.
- C. Ownership of the land does not vest its owner with the right to ownership of the antiquities existing thereon and therein, or disposing with it, and does not entitle him to excavate for antiquities therein.
- D. The Government may expropriate or buy any land or antiquity if it is in the interest of the Department of expropriate or buy it.

Discussion: This issue in conjunction with the law allows for the creation of an artificial conflict: the antiquities, the past, are in opposition to the needs of the present. Individuals will not assume responsibility for the reporting of antiquities when they will lose their land, even if a "land swap" is possible. The law also militates against the private sector or an individual municipal authority assuming the responsibility for an identified antiquity.

9. **ISSUE:** *The archaeological process is negated; there is no definition of "public archaeology".*

S: No strength is identified.

W: Neither the visitor to a site nor the local citizens are part of the archaeological process. [Employment opportunities occur only when excavations are in the field.]

O: If a concept of public archaeology is propagated through involvement of local citizens in the process, i.e., during excavation, through information, education and communication, sites will play a role in the development of a specific locale.

T: Archaeology and the remains are viewed as "esoteric" in nature and alienated from individual citizens and as useful only for tourism. Touristic development of the site becomes "clearance" rather than proper archaeological technique.

10. **ISSUE:** *There is no benefit to citizens who have archaeological remains on their land.*

S: No strength is identified.

W: The archaeological remains are distanced from the present population and viewed as inconvenience.

O: If the law is changed, benefits could be incorporated. These might consist of: tax benefits, definitions of private maintenance within the context of national legislation [a "National Register"].

T: The division between the past - present - future increases and the possibility of economic benefits from the archaeological remains is lost.

Law: Article 4:A mentions an "archaeological register".

Discussion: What has recently come to light is that the courts use the register of archaeological sites dated to 1948. This means that even the listing that was done in 1968 by US archaeologists is ignored; and, that the recently created and continually updated listing, known as JADIS, has no official governmental standing.

Archaeological research has changed drastically since 1948 meaning that the definitions of sites, importance, periods, etc., have expanded; thus, the creation of JADIS. However, it is clear without legal standing no list of sites will be used within the development process or for the enforcement of existing law. It would seem to be an easy process: update JADIS until the beginning of the next calendar year, submit this list as the inventory or the "archaeological register" and provide for the yearly updating of the register.

11. **ISSUE:** *Buffer zones around archaeological sites are unclear and rarely enforced.*

S: The law does state a buffer zone.

W: Viewsheds/scapes are not taken into consideration even if a buffer zone exists; that is, the site can be overwhelmed by modern architecture and/or development.

O: The fact that law states a buffer zone means that it is possible to enforce.

T: The buffer zone is too small and needs to be evaluated for each site, i.e., the requirements of sites are not all the same.

Law: Article 13

"No permit should be granted for any construction project, including buildings and fences, unless a distance of 5-10 metres is left between them [sic!; meaning: "them"] and any antiquity, according to the Director's decision."

Article 4:A is also pertinent.

"The Minister may, upon the recommendation of the Director, and in cooperation with the Department of Lands and Surveys, decide on the names and boundaries of archaeological sites, which are to be registered in the archaeological register for immovable antiquities; including the limitation of servitudes pertaining thereto."

Discussion: The distance of 5-10 meters is not adequate to ensure viewsheds or the preservation of an entire site. Underlying the law, there seems to be the understanding of archaeology as standing architecture. With boundaries being arbitrarily set, that is without controlled archaeological survey, sites are not viewed within a context. This also raises issues of land tenure. It is often easier to define the archaeology as known-architectural remains because then less land is expropriated, causing fewer societal or community problems.

12. ISSUE: *The Department of Antiquities licenses construction either through design documents or construction documents. Once this occurs, the Engineering Association is responsible, not the Department of Antiquities. The Engineering Association has no regulations regarding antiquities.*

S: No strength is identified.

W: The Antiquities Law is ignored. "Archaeological watches" are not always done.

O: If the Engineering Association followed the law, it would be possible to integrate it into a public archaeology program and perhaps increase employment of trained archaeologists.

T: The loss of archaeological sites, data, knowledge and the threat of a "screwed" interpretation of the history of human habitation of Jordan.

Discussion: It would appear that the law has to be altered to mandate archaeological watches by the DOA at all construction sites. The cost of this would have to be legislated as well, i.e., a percentage coming from the construction budget.

13. ISSUE: *When an archaeological site is identified on private land, the site is expropriated or there is a "land swap".*

- S: The state acquires significant archaeological remains in this manner.
- W: The compensation is rarely commensurate with how the land is valued.
- O: Allows the state, and could possibly allow local authorities, to identify significant archaeological remains.
- T: Archaeological sites are not reported to the authorities; thus, potentially significant sites are lost and more illicit trafficking occurs.

Law: See above for discussion of the law.

Discussion: The entire process continues the division between the archaeological past and the present. It is difficult for individuals to understand how they can gain economically from archaeology within a context of preservation when they have no access to it.

14. ISSUE: *There are no established priorities of archaeological sites, e.g., those that must have salvage archaeology conducted, those that must have rescue archaeology conducted and those that are part of long-term archaeological excavation programs.*

- S: No strength is identified.
- W: Archaeological excavations occur almost in an ad hoc manner or are dependent on individual scholars areas of interest; thus, there is no compatibility with a "national strategy".
- O: No opportunity is identified.
- T: The major threat is a "screwed" understanding of the long inhabitation of Jordan, from the scholarly point of view. From a practical archaeological standpoint, the professionals of the DOA are doing "crisis management" without a national plan.

Law and Discussion: Within the law, only the Department of Lands and Surveys, the General Security Center and the Government are mentioned. Agreements with the NRA and the MPW may or may not be binding. In other words, for the legislation to be effective there needs to be an "article" which would incorporate antiquities into the development process and mandate the interaction of ministries and departments with the DOA. Article 6 states that "the names and boundaries of the archaeological sites in the Kingdom" is to be exhibited, but it does not talk about preserving or protecting. ["No land on such sites shall be sold, let or delegated to any authority without the approval of the Department" is neither strong enough nor does it establish a system for making decisions.]

15. **ISSUE:** *The Department of Antiquities is usually not consulted concerning development plans.*

S: No strength is identified.

W: The Ministry of Public Works, the Ministry of Water and Irrigation, and the Ministry of Municipalities, Rural Affairs and Environment develop areas without considering the antiquities and the legal situation.

O: If communication is enhanced, better planning will occur which will allow for the inclusion of rescue and long-term archaeological methodologies into the development process.

T: The major threat is the continued loss of archaeological sites.

Discussion: It is likely that the coordination would have to be mandated by law.

ARCHAEOLOGY AND TOURISM ISSUES

1. **ISSUE:** *Once an archaeological site is identified as significant for tourism, it is under Tourism in the Ministry of Tourism and Antiquities. (ref: "Tourism Law")*

S: No strength is identified.

W: This leads to overlapping authority between "tourism" and "antiquities" in the same Ministry.

O: No opportunity is identified.

T: Because tourism is defined as amenities and ease for visitors, the needs of the archaeological remains are often ignored. The DOA has the cognizant staff but with overlapping authorities, the result is that responsibilities are not clear.

Law: Article 3:A,3 states clearly that the DOA is the authority.

"To administer antiquities in the Kingdom, supervise, protect, maintain, record, beautify the vacinities thereof and exhibit them."

Tourism

Discussion: Coordination of the two sections of the MOTA and the proposed third, i.e., "national landmarks", along with an integrated planning methodology would eliminate overlap and confusion.

-2. **ISSUE:** *The assumption is that international visitors are the tourism priority and that these visitors are only interested in monumental remains.*

S: This increases the foreign exchange earnings, thus improving the economy.

W: These leads to a false understanding of the archaeological remains/data present in Jordan as well as the alienation of the present from the past.

O: Focusing on existing archaeological sites with monumental remains for tourism development purposes can allow for the preservation of these remains following international standards and conventions.

T: Decisions are made about significant sites without an understanding of local, regional and international significance; and, as well, the local citizens at specific sites are not consulted.

Discussion: Probably due to the fact that "hard currencies" are necessary, emphasis has been placed on the international visitor. However, without integrating the in-country touristic needs within a national strategy, alienation of the local population will occur and may eventually harm international visitors needs. Over emphasis on Roman and Byzantine archaeological remains provides little variety for the visitor and also creates a false impression. However, budget allocations militate against the enhancement of several sites at one time. Lack of knowledge on the part of the private sector tour operators also keeps the visitors going to the "same old places". Without the increasing tour operators', hoteliers' and the service providers knoweldge of the archaeological resources, it will be difficult to alter the traditional packages from Roman and Byzantine and religious sites.

3. **ISSUE:** *International conventions are not adhered to in the enhancement of sites for visitor enjoyment.*

S: No strength is identified.

W: Improper materials, preservation techniques, presentation methodologies [e.g., lack of humidity control], restoration and refurbishing lead to the eventual destruction of the archaeological remains.

O: No opportunity is identified.

T: Archaeological remains may be/are actually destroyed.

Law and Discussion: According to the law, the DOA has the sole responsibility. This issue is both a "pure" archaeological issue and a tourism issue, as sites are now being most often restored as part of the touristic base. However, without adherence to standard procedures materials may actually destroy evidence. A good example of this is the oft discussed problems at Jerash/Gerasa.

4. **ISSUE:** *Archaeological sites are not viewed as long-term contributors to economic growth.*

S: No strength is identified.

W: Because immediate economic gains are understood as important, sites are not preserved adequately and visitors are allowed full access.

O: If the site is viewed as a long-term contributor to economic growth, the visitor will be actively engaged in the preservation of the site, a visitor reservation system for the most frequently visited sites will be developed and visitor safety will be taken seriously.

T: The tourism base will be destroyed.

Discussion: There need not be a conflict between so-called academic archaeology, the preservation of sites and the enhancement of sites for visitor satisfaction.

ARCHAEOLOGY AND DEVELOPMENT

1. **ISSUE:** *All archaeological sites cannot be preserved, given the needs of the present population.*

S: This fact may lead to the creation of national priorities within a wholistic framework.

W: This can lead to cynicism about the abilities of the authorities and within the population.

O: Opportunities exist to enhance the present authority [the Department of Antiquities] through human resource development, e.g., documentation abilities, information dissemination, preservation, restoration, presentation, management, so that sites are documented and/or preserved.

T: Because only a small number of the total number of sites can be preserved, false emphases will be determined.

Discussion: What is preserved must be a national Jordanian decision that is on-going; in other words, decisions need to be made for the short-, medium- and long-term.

The only way this can be accomplished is through the formulation of a national strategy.

ANNEX A1

BIODIVERSITY ISSUES PAPER

by
Zuhair S. Amr

BIODIVERSITY ISSUES PAPER

By

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TABLE OF CONTENTS

SECTION I: INTRODUCTION

- A1. Definition:
- A2. Reasons for studying biodiversity
 - A2a. Socioeconomic and social aspects of the biodiversity:
 - A2b. Biodiversity is an international science:
- A3. Biodiversity affinities
 - A3a. Origin of the Biological Resources
 - A3b. Biogeography of Jordan
 - The Mediterranean biotop:
 - The Saharo-Sindian biotop:
 - The Irano-Turanian biotop:

SECTION II. SPECIES BIODIVERSITY COMPOSITION IN JORDAN

- A1. Common species:
- A2. Threatened species:
- A3. Endangered species:
- A4. Relict species:
- A5. Endemic species
- A6. Introduced or exotic species:
- A7. Re-introduced species:

SECTION III. ANALYSIS OF BIODIVERSITY IN JORDAN

- A1. Background
- B1. Biodiversity of various taxonomic groups.
 - B1a. Reptiles and Amphibians
 - B1b. Mammals
 - B1c. Birds
 - B1d. Fresh Water fishes:
 - B1e. Invertebrates:
 - B1f. Plants (Including flowering and non-flowering plants)

SECTION IV. THREATS TO WILDLIFE AND ENDANGERED SPECIES (LARGE ANIMALS)

SECTION V. MANAGEMENT OF CAPTIVE-BREEDING AND RE-INTRODUCTION.

- A. Re-introduction Unit at RSCN
- B. Rehabilitation of range lands
- C. Upgrading of protected area network
- D. Regional cooperation

SECTION VI. FACTORS AFFECTING BIODIVERSITY

- A. Habitat degradation
 - A1a. Urbanization and road construction:
 - A1b. Agriculture:
 - A1c. Pesticides:
 - A1d. Pollution:
 - A1e. Miss-use of Natural Resources:
 - A1f. Alternation of habitats related to water resources:
- B. Other factors
 - B1a. Hunting

SECTION VII. INSTITUTIONS INVOLVED IN BIODIVERSITY:

- A. The Royal Society for Conservation of Nature(RSCN):
- B. The forestry department
- C. Ministry of Municipal and Rural Affairs and Environment:
- D. General Environmental Agency
- E. The higher council for Science and Technology
- F. The Governmental Universities

SECTION VIII. JORDAN'S COLLABORATION WITH INTERNATIONAL AGENCIES

- A. CITES
- B. IUCN
- C. WWF-World Wide Fund For Nature
- D. International Waterfowl and Wetlands Research Bureau (IWRB)
- E. BirdLife International
- F. Ramsar Convention Bureau

INSTITUTIONAL ISSUES

SECTION X. REFERENCES

SECTION X.II. APPENDICES

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EXECUTIVE SUMMARY

Biodiversity issues are becoming of global interest, this is due to the accelerating rate of development particularly in the developing countries. Jordan is a developing country that witnessed an overwhelming increase in population and development programs within the past 40 years. These changes were reflected on the biodiversity, particularly urbanization, agricultural expansion and other factors. Some species were entirely extirpated and others are in eminent danger of being endangered or threatened. The national and international efforts to conserve and preserve the remnants of these populations became obvious within the past few years. In this paper, issues related to the biodiversity in Jordan are discussed; including the unique affinities of biodiversity in Jordan, biogeographical regions, species composition, threats and factors affecting biodiversity, and all the institutions involved in the various conservation issues.

SECTION I: INTRODUCTION:

A1. Definition: Biodiversity is defined as the variability among living organisms and ecological complexes in which they occur as well as the number of different items and their relative frequency. These items are organized at many levels, ranging from complete ecosystems to the chemical structures that are the molecular basis of heredity. This term "Biodiversity" encompasses different ecosystems, species, genes and their relative abundance (OTA, 1987).

A2. REASONS FOR STUDYING BIODIVERSITY

A2a. Socioeconomic and social aspects of the biodiversity: Human prosperity is based largely on the abilities to utilize the surrounding biological diversity (Take advantages of the natural properties of plants and animals, ecotourism etc..) as a source of food, medicinal purposes, income and diseases-causing organisms.

A2b. Biodiversity is an international science: International cooperation is mostly directed environmental issues, particularly Eastern Europe, the former Soviet Union and the developing countries. The earth resource are of international concern and this is manifested in studying biodiversity in different parts of the world, especially developing countries. The aim is to have knowledge about the natural resources and how they might be utilized to come out with a better economical status. Also, most of our fragmented knowledge on the priorities of thousands of wild plants is still poorly unknown. For these points, studying the biodiversity on global framework is materialized.

A3. BIODIVERSITY AFFINITIES

A3a. Origin of the Biological Resources

The biodiversity in Jordan is rather interesting; considering the location of Jordan, where three different biogeographical elements meet, namely; the Afrotropical, Oriental and Palaeartic. The area known as the Levant (Including Jordan, Syria, Palestine, Lebanon and Turkey) has been influenced by different faunal and floral elements soon after the retraction of the Tethys Sea. Animals of different origins passed through the natural corridors as well as water bodies and spread all through the area. This is exemplified by several terrestrial animal groups (Mammals, Reptilia and Arthropods) that makeup the major biodiversity assemblage in our area. Also, the retraction of the post glacial effect created what is known as relict species.

The Middle east in general, and particularly Jordan, went through extensive man-made during the past two centuries. Massive increase in the population (natural and mass emigration) followed by land encroachment for agricultural and urban utilization over the past few years was reflected with an overwhelming impact on natural resources, particularly species biodiversity.

A3b. Biogeography of Jordan

Jordan is divided into three main biogeographical regions; Mediterranean, Saharo-Sindian and Irano-Turanian (Feinburn & Zohary, 1955; Long, 1957; Poore & Robertson, 1964). Each biogeographical region has its characteristic biodiversity assemblage. However, there are some species that may be common to these different biotops.

The Mediterranean biotop: that extends along the northern mountains of Ajlune with wadi interruption to Tafila mountains in the south. This biotop is characterized by a highest annual rain fall and high altitude with distinctive terra rosa soil type as well as oak and pine forests, brush and grassland steppe and a variety of temperatures from cool to warm. Additionally, about 70% of the known mammals and reptiles are found to occur.

The Saharo-Sindian biotop: It covers most of the Jordanian desert bordering Saudi Arabia in addition to Wadi Araba, which has a unique Afrotropical affinities. It is characterized by lime and sand stone soil, 20-100 mm of annual rainfall, with very scarce vegetation.

The Irano-Turanian biotop: This region is characterized by basalt and limestone deserts with gray calcareous soil, and less than 100 mm of rainfall.

SECTION II. SPECIES BIODIVERSITY COMPOSITION IN JORDAN

Species that constitutes the base of biodiversity in Jordan could be divided into the following categories:

A1. Common species: These are species that are not threatened by human activities and environmental changes, since they are not demanded or used in any form. Also, they have innate or behavioral capacities that allows them to accommodate quickly with new surroundings. They are usually abundant and are not prone to extinction.

A2. Threatened species: These are species that are still abundant in parts of their territorial range, are declining significantly in total numbers and may be on the verge of extension in certain regions or localities

A3. Endangered species: These are species considered in imminent danger of extension.

A4. Relict species: These are species isolated from the general range of their current distribution and still existing in areas out of their natural range of distribution, with a very delicate and fragile environment conditions which their ancestors used to live under. Their examples in Petra and Jawa area (Eastern desert). These species are very susceptible to natural as well as man-made changes.

A5. Endemic species: These are species that are unique to a certain geographical area, and are not found in any other areas. In Jordan, at least two examples of fresh water fishes exhibit this phenomena. *Aphanius serhani* is restricted to Azraq area and known only from few localities in that area. Also, *Gara ghorensis*, a freshwater fish was described from one single waterbody located in the southern end of the Dead Sea. Some endemic species are considered endangered due to the extensive changes in their natural habitats. It is believed that some endemic species disappeared even before they were described.

A6. Introduced or exotic species: These are species that not originally known to occur in the area, and being brought from distant origins for a variety of reasons; Agriculture, fish farming. Some of these species invaded new habitats and causes severe ecological impact on previously existing species.

A7. Re-introduced species: These are species that are extinct locally, and then re-introduced into Jordan in habitats where the extinct population used to survive. The best example is the re-introduction of the Arabian oryx that become extinct around 1920. Now, this species was re-introduced. However, strains and genetically different populations are the major difficulty in identifying the original source of these populations.

SECTION III. ANALYSIS OF BIODIVERSITY IN JORDAN

A. Background

The fragmentary information regarding the biodiversity of Jordan is related to the availability of interested and trained scientists that can cover a relatively many discipline in zoology, botany and microbiology. However, needless to say, a small portion of the biodiversity of Jordan is well known.

B. Biodiversity of various taxonomic groups.

Most of our knowledge on the biodiversity pattern in Jordan is restricted to the vertebrates and the flowering plants. Table (1) summarizes the total number of species known among the different categories.

Table (1)
Summary of diversity among some different taxonomic groups

	Total No.	Endemic	Threatened
Marine fishes	320	NA	NA
Freshwater fishes	27	2	2*
Reptiles and amphibians	96	5*	20
Birds	374	NA	NA
Mammals	77	10*	25
Mollusca	180	NA	30
Arthropods**	3500	NA	NA
Flowering plants***	2500	200	500
Non-flowering plants and fungi	400	NA	NA

NA Data not available

* Endemic to the Levant region

** Estimated based on Bodenheimer (1977)

*** Data obtained from Prof. D. El-Esawi

B1a. Reptiles and Amphibians:

Our current knowledge related to the herpetofauna of Jordan arose from the studies conducted since 1914-1995. As a semi-arid region, the reptiles of Jordan are rather diverse, totaling 96 species and subspecies with some endemic species to the Greater Syrian desert. Here are some of the comprehensive studies on the herpetofauna of Jordan: (Barbour, 1914; Schmidt, 1930; Haas, 1943 and 1951; Werner, 1971; Disi, 1983, 1985, 1987; Disi *et al.*, 1988; Amr *et al.*, 1994; Al-Oran *et al.*, 1994). Appendix 1 lists all the reptiles and amphibians occurring in Jordan.

B1b. Mammals:

So far, a total of 77 species of mammals are known to occur in Jordan. These species belong to seven orders (Insectivora, Chiroptera, Carnivora, Hyracoidea, Artiodactyla, Lagomorpha and Rodentia). However, more species may be added to our local mammals through continuous studies related to the mammals. Important publications related to the mammals of Jordan are: Curruthers (1909), Allen (1915), Atallah (1966, 1967a, 1967b, 1967c, 1977, 1978), Clarke (1977), Hemmer (1978), Amr & Saliba. (1986), Qumsiyeh *et al.* (1986), Searight (1987), Amr & Disi (1988), Amr & Woodbury (1988), Amr *et al.* (1987), Bates & Harrison (1989), Harrison & Bates (1991) and Qumsiyeh *et al.* (1992). Much attention was paid to studies related to the introduce Arabian oryx (Smith 1980, Abu-Jafar, 1983; Fitter, 1984; Nelson, 1985; Hatough & Al-Eisawi, 1988). Also, conservation issues focused on different orders

of the mammals were investigated (Hatough & Disi, 1991; Hatough *et al.*, 1986; Hatough-Bouran, 1990; Kock *et al.*, 1993; Qumsiyeh *et al.*, 1993). Appendix 2 lists all the mammals occurring in Jordan. Appendix 2 lists all the mammals occurring in Jordan.

B1c. Birds:

The avifauna of Jordan is one of the best studied groups. Taking into consideration that Azraq Oasis is one of the major areas for migratory birds. A large number of publications and books that dealt directly with the bird's status in Jordan were published within the past three decades. Here some of the most comprehensive studied (Mountford, 1965; Nelson, 1973; Clarke, 1980; Condor, 1981; Wallace, 1982, 1983, Wittenberge, 1987).

B1d. Fresh Water fishes:

Krupp & Schneider (1989) reported that the native fauna of freshwater include 24 species to the Jordan-Dead Sea catchement basin and 28 species form outside, which have been introduced intentionally or accidentally. Mir (1990) reported 21 species amongst which 15 are native to Jordan and 6 introduced (Mir, 1995).

B1e. Invertebrates:

Most of our knowledge on the terrestrial aquatic invertebrates fauna of Jordan are almost fragmentary. Previous studies focused on economic and medical entomology, without much attention to other taxonomically important groups. The major studies are listed bellow according to the taxonomic group.

Arthropoda: Insecta

1. **Coleoptera:** Johnson (1969), Kaszab (1979), Loptain (1979, 1984), Mazur (1981), Peacock (1980), Schawaller (1982), Holzschuh (1984), Chassain (1979), Coiffait (1981), Fursch (1977), Furth (1983), Gentili (1983), Audisio (1960), Bily (1984), Borowiec (1985, 1986).
2. **Lepidoptera:** Hemming (1932), Larsen (1975; 1976; 1977; 1984a; 1984b), Larsen and Nakamura (1983), Hasselbach (1985), Kiriakoff (1960), Tremewan (1982),
3. **Trichoptera:** Botosaneanu (1979)
4. **Diptera:** Lumsden and Yofe (1950), Omish *et al.* (1980), Papp (1981), Saliba *et al.* (1985), Shazli and Mostafa (1979; 1980)
5. **Orthoptera:** Harz (1985),
6. **Hymenoptera:** Horstmann (1977), Nixon (1986), Robinson (1981),
7. **Homoptera:** Mustafa and Qasem (1984), Mustafa (1984; 1986), Mustafa and Najjar (1985), Ohnesorge *et al.* (1980; 1981)

Arachnida

1. **Scorpions:** Levy *et al.* (1973), Wahbeh (1974), Vachoun (1966; 1976), Amr and El-Oran (1994).
2. **Spiders:** Brignoli (1978).
3. **Solfugids:** Turk (1960).
4. **Mites:** Fain (1982), Hammer (1966), Klapperich (1957), Klapperich (1973).

Mollusca

1. **Fresh water and land snails:** Mienis (1978), Schutt (1983), Burch (1985).

Still, more information and studies are needed to study the marine biodiversity in Jordan, which still in dire need for specialists.

B1f. Plants (Including flowering and non-flowering plants)

2400 species of flowering plants were recorded in Jordan and their status is fully studied in terms of endangered or threatened species. An estimate of 5-10 species of ferns may occur in Jordan. Other groups including Bryophytes, Lichens, Fungi and Algae requires further studies. We include here some of the most relevant studies on the vegetation of Jordan (Zohary, 1973; Long, 1957; Kasapliligil, 1956 & Al-Eisawi, 1985, 1992-1990,1973).

AL-Eisawi (1985) recognized 13 vegetation types in Jordan, four of which are forests; Pine, Evergreen oak, Deciduous oak, and Juniper forests.

SECTION IV. THREATS TO WILDLIFE AND ENDANGERED SPECIES (LARGE ANIMALS)

Wildlife have declined dramatically and some have become extinct totally from the wild since the early part of this century due to habitat encroachment by urban and agricultural development, deforestation, deterioration of range lands by over grazing and soil erosion, illegal hunting, and depletion of the major water resources.

The decline in Jordan's wildlife was mainly in its macro mammals such as the Syrian Wild Ass *Equus hemionus hemippus*, Nubian Ibex *Capra ibex nubiana*, Arabian Oryx *Oryx leucoryx*, Goitered Gazelle *Gazella subgutturosa marica*, Mountain Gazelle *Gazella gazella*, Dorcas Gazelle *Gazella dorcas*, Roe Deer *Capreolus capreolus*, Persian Fallow deer *Dama mesopotamica*, Syrian Brown Bear *Ursus arctos syriacus*, Arabian Wolf *Canis lupus arabs*, Cheetah *Acinonyx jubatus*, Arabian Leopard *Panthera pardus nimr*.

The Syrian Desert Ostrich *Struthio camelus syriacus*, the biggest non--flying bird on earth has been extinct in Jordan around the late thirties.

By the middle of this century four mammalian species have already become extinct from the wild and these are:

- 1- Arabian Oryx
- 2- Roe Deer
- 3- Persian Fallow Deer
- 4- Syrian Wild Ass

SECTION V. MANAGEMENT OF CAPTIVE-BREEDING AND RE-INTRODUCTION.

A. Re-introduction Unit at RSCN

To assist in formulating, execution and coordination of re-introduction projects it is necessary to establish a Re-introduction unit at RSCN. This unit will be responsible for day-to-day management in wildlife reserves with ongoing captive-breeding programs for re-introduction.

The unit should include an administrative officer (to coordinate the various programs), a field researcher (to monitor re-introduced species), a veterinary officer (to ensure medical care at re-introduction sites and for captive-breeding programs) and a curator (to oversee management in captive-breeding programs). Technical support including transport, materials for holding facilities, veterinary equipment and monitoring equipment (radio-collars) must be provided to maximize use of resources and ensure the success of re-introduction programs..

B. Rehabilitation of range lands

Habitat encroachment, including depletion of water resources and livestock grazing have resulted in considerable habitat degradation in many parts of Jordan. In order to enable potential release sites to receive species from the captive-breeding programs range lands in Jordan must be fully rehabilitated. Fauna and flora surveys and habitat assessment should be completed before any releases might be considered to investigate the effective impact of released species upon the range land.

C. Upgrading of protected area network

The current protected area network does only represent a small portion of the habitat types existing in Jordan. Several protected areas for which re-introduction programs have been recommended are as yet not officially gazetted. In order to maximize the impact of re-introduction efforts and its potential benefits in ecotourism to Jordan sites already identified in this systems plan should be formally established as soon as possible.

D. Regional cooperation

Cooperation on a regional basis is essential in the conservation and breeding of Arabian gazelle species. Fragmentation of resources in conservation and re-introduction efforts is an obstacle to the success of gazelle conservation in the region. This is particularly true for migratory species like Arabian oryx *Oryx leucoryx* and sand gazelle *G. subgutturosa marica*. Decisions on location of captive-breeding programs, re-introduction sites and conservation and rehabilitation of range lands should be made in a regional framework to guard against duplication of effort. In addition, budgets should be allocated at the regional level for rehabilitation of protected areas and gazelle species in the entire Arabian Peninsula.

SECTION VI. FACTORS AFFECTING BIODIVERSITY

A. Habitat degradation

A1a.. Urbanization and road construction

Since the establishment of the Hashmite Kingdom of Jordan, the population increased several folds within the past 60 years. Most of the population is concentrated in the Mediterranean biotop, the richest in biodiversity. Similarly, road construction expanded through remote areas and across the deserts linking the country from all directions. However, all this modernization took its toll on habitat destruction; by altering water courses, cutting through mountains and deforestation.

A1b. Agriculture

As a source of income, many individuals resorted to extensive farming in all types of habitats. Now, farms in the eastern desert near Azraq area, Wadi Araba and Wadi Rum have been established, in addition to the traditional farming along the eastern mountains. Moreover, the Jordan Valley witnessed an overwhelming expansion in farming.

A1c. Pesticides

Along with agricultural expansion, the amount of chemical pesticides increased greatly with a detrimental effect on many species, particularly arthropods.

A1d. Pollution

Quarry pits, phosphate, cement factories and potash mining produce a large amount of fugitive emission in many areas of the country. Additionally, chemical by-products from industries are point sources for water pollution that caused extensive damages to Zarka River. All water-related pollution is not properly controlled.

A1e. Miss-use of Natural Resources

Many practices by the locals including gathering of edible plants, improper use of parks or reserves, killing animals for reasons of fear or with no obvious reason are major issues that deserves a closer investigation. Gathering shrubs and wood for cooking or heating purposes is a custom among villagers or Bedouins that inflicted sever damage to the ecosystem in many parts of the country. With the continuous demand for red meat, grazing is a well known problem facing reserves officials. Grazing is a traditional way of living among a certain people in Jordan. Conflict of interest is often among shepherds and the government, and usually resolved peacefully to side of the shepherds.

A1f. Alteration of habitats related to water resources

To meet the growing demand for drinking water and agriculture, several major changes have occurred within the past tow decades. Construction of dams in different parts of the kingdom, changes in water courses of natural water bodies, and water pumping from ground water affected greatly several boidiversed regions as Azraq and many sites along the Jordan Valley. All these alternations did not consider the ill-effects on the local biodiversity.

B. Other factors

B1a. Hunting

Despite the presence of a legislation prohibiting the illegal hunting, and the enforcement of the RSCN, poaching and illegal hunting are still issues of consideration. See appendix 1 for the Ministry of Agriculture Law No. 20, 1973 including legislation for wildlife protection.

SECTION VII. INSTITUTIONS INVOLVED IN BIODIVERSITY:

Although there is no organized governmental body concerned with the state of biodiversity in Jordan, several agencies may be related to biodiversity conservation:

A. The Royal Society for Conservation of Nature(RSCN):

An NGO delegated and responsible for the management of wild life in Jordan and this includes; regulating hunting seasons, establishment of nature reserves (five up-to-date) and re-introduction of extinct species. The Research section is currently active in surveying the biodiversity (Fauna and flora) of managed reserves and is in the process of conducting surveys on the proposed nature reserves. The RSCN is also involved in public awareness program through formulating Nature Clubs in public and private schools.

B. The Forestry Department:

Technically under the Ministry of Agriculture has been involved in the establishment of range land reserves and forest reserves since 1946. A total of 18 reserves has been gazetted up-to-date.

C. Ministry of Municipal and Rural Affairs and Environment:

Although long term activities and implementation of any of policies stated in the mainframe of the ministry is not materialized, it is still the official governmental body related to biodiversity issues. No scientific reports or publications addressing the current situation of biodiversity have been in the Jordan. This basically is due to the lack of well trained scientists in natural resources, including biodiversity experts in different disciplines.

D. The General Environmental Agency :

An offshoot of the MoMRE has an in-house department designated for the conservation of wildlife. However, no substantial input in direct conservation issues.

E. The Higher Council for Science and Technology :

Which has executed several joint biodiversity issues concerning conservation and management issues in their badia projects. Additionally.

F. The Governmental Universities:

Staff of governmental universities involved in biodiversity issues have conducted several joint research projects aimed towards conservation and identification Jordan's biodiversity status. It is noteworthy to mention the role of the Aqaba Marine Station (shared by the University of Jordan and Yarmouk University) in their past and current activities in studying the biodiversity of the Red Sea along the Jordanian coasts.

SECTION VIII. JORDAN'S COLLABORATION WITH INTERNATIONAL AGENCIES

A. CITES

The Jordanian Government signed the international trade treaty for the endangered animal and plant species in 1979, and became an active member, enforcing all the articles stated in the treaty.

B. IUCN

The RSCN, Jordan Environment Agency and the University of Jordan are active members in the World Conservation Union. Founded in 1948, IUCN-The World Conservation Union brings together States, government agencies and a diverse range of non-governmental organizations in a unique world partnership: over 800 members in all, spread across some 130 countries. As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. The World Conservation Union builds on the strengths of its members, networks and partners to enhance their capacity and to support global alliances to safeguard natural resources at local, regional and global levels.

C. WWF-World Wide Fund For Nature

WWF-World Wide Fund For Nature is the world's largest private international conservation organization, with 28 Affiliate and Associate National Organizations around the world and over 5.2 million regular supporters. WWF continues to be known as World Wildlife Fund in the United States and Canada.

D. International Waterfowl and Wetlands Research Bureau (IWRB)

IWRB was established in 1954 and is the only independent global organization concerned primarily with the conservation of wetland ecosystems. IWRB's goal is to promote the conservation of wetlands and wetland biodiversity, particularly waterbirds, by stimulating and coordinating international technical cooperation. This is achieved by coordinating international projects, organizing training workshops and disseminating information through conferences, workshops and publications. IWRB is governed by an Executive Board comprising national delegates from 48 member countries together with coordinators of more than 20 specialist networks which group international experts in wetland and waterbird management and conservation.

E. BirdLife International

BirdLife International is a worldwide partnership of over 100 national organizations working for the conservation of birds and their habitats and, through this, for the diversity of all life. BirdLife International pursues a program of scientific research to identify the most threatened bird species and the most critical sites for avian diversity, field action to address these priorities, advocacy and policy development, and network building, to expand the global partnership of conservation organizations.

F. Ramsar Convention Bureau

The Convention on Wetlands of International Importance especially as Waterfowl Habitat, sometimes known as the Ramsar Convention from its place of adoption in 1971 in Iran, is an intergovernmental treaty which provides the framework for international cooperation for the conservation of wetland habitats. The Convention entered into force in 1975 and now has Contracting Parties from regions throughout the world. The United Nations Educational, Scientific and Cultural Organization (UNESCO) serves as Depository for the Convention. The secretariat, or Bureau, is an independent body sharing headquarters with IUCN in Gland, Switzerland. Jordan participated in the Ramsar Convention.

SECTION IX. INSTITUTIONAL ISSUES

The major institutional issues (Treated in appendix XXX) are as follows:

- Coordination among different agencies involved
- Formation of a national institution specialized in biodiversity affairs
- Data base for biodiversity
- Funds for biodiversity research
- Specify roles for current institutions
- Legislations concerning protection of biodiversity
- Enforcement of wildlife protection law
- Trained personnel
- Formation of a national museum
- Consultation of specialist in long term planning

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Appendix 1
List of reptiles and amphibians

Table 1. Distribution of the herpetofauna in the main ecozones in Jordan.

Taxon affinity*	Ecozone				Zoogeographical
	M	B	W&S		
Amphibia					
Urodela					
Salamandridae					
<i>Triturus vittatus</i>	+				P
Anura					
Pelobatidae					
<i>Pelobates syriacus</i>	+				p
Bufonidae					
<i>Bufo viridis</i>	+	+	+		P
Hylidae					
<i>Hyla savignyi</i>	+	+	+		P
Ranidae					
<i>Rana ridibunda</i>	+	+	+		P
Testudines					
Cheloniidae					
<i>Chelonia mydas</i>					Gulf of Aqaba
<i>Eretmochelys imbricata</i>					Gulf of Aqaba
Dermochetylidae					
<i>Dermochelys coriacea</i>					Gulf of Aqaba
Testudine					
Emydidae					
<i>Mauremys caspica rivuluta</i>		+			P
Testudinidae					
<i>Testudo graeca terrestris</i>		+			P
Sauria					
Gekkonidae					
<i>Bunopus tuberculatus</i>				+	A
<i>Cyrtodactylus scaber</i>				+	A
<i>Cyrtodactylus kotschy orientalis</i>					
<i>Hemidactylus turcicus turcicus</i>		+	+	+	Af
<i>Pristurus rupestris</i>				+	SS
<i>Ptyodactylus hasselquistii</i>				+	SS
<i>Ptyodactylus guttatus</i>			+	+	SS
<i>Ptyodactylus puiseuxi</i>		+	+		SS
<i>Stenodactylus doriae</i>				+	A
<i>Stenodactylus grandiceps</i>			+		A
<i>Stenodactylus sthenodactylus</i>				+	SS
<i>Tropicolotes steudneri</i>				+	Af
Chamaeleonidae					
<i>Chamaeleo chamaeleon recticrista</i>		+	+		Af

Agamidae			
<i>Laudakia stellio stellio</i>	+		P
<i>Laudakia stellio brachydactyla</i>		+	P
<i>Laudakia stellio picea</i>		+	A
<i>Pseudotrapelus sinaita</i>		+	SS
<i>Trapelus blanfordi fieldi</i>		+	A
<i>Trapelus pallida haasi</i>	(+)	+	SS
<i>Phyrnocephalus arabicus</i>			A
<i>Uromastyx aegyptius microlepis</i>			SS
Lacertidae			
<i>Acanthodactylus boskianus</i>	(+)	+	SS
<i>Acanthodactylus grandis</i>		+	A
<i>Acanthodactylus ophiodurus</i>	(+)	+	A
<i>Acanthodactylus pardalis</i>		+	SS
<i>Acanthodactylus robustus</i>		+	A
<i>Acanthodactylus schreiberi syriacus</i>			
<i>Acanthodactylus schmidti</i>		+	A
<i>Acanthodactylus tristrami</i>		+	A
<i>Acanthodactylus scutellatus</i>			
<i>Mesalina brevirostris microlepis</i>		+	A
<i>Mesalina guttulata guttulata</i>		+	SS
<i>Mesalina olivieri schmidti</i>		+	SS
<i>Ophisops elegans elegans</i>	+		P
<i>Ophisops elegans blanfordi</i>	+		P
<i>Ophisops elegans ehrenbergi</i>	+		P
<i>Lacerta kulzeri</i>	+		P
<i>Lacerta laevis</i>	+		P
<i>Lacerta trilineata israelica</i>	+		P
Sincidae			
<i>Ablepharus kitaibelli</i>	+		P
<i>Chalcides ocellatus</i>	+	+	SS
<i>Chalcides guentheri</i>	+		SS
<i>Eumeces schneideri pavimentatus</i>			SS
<i>Eumeces schneideri schneideri</i>	+		SS
<i>Mabuya vittata</i>	+	+	Af
<i>Ophiomorus latastii</i>	+		P
<i>Scincus scincus meccensis</i>			A
<i>Sphenops sepsoides</i>			SS
Anguidae			
<i>Ophisaurus apodus</i>	+		P
Varanidae			
<i>Varanus griseus</i>		+	SS
Ophidia			
Leptotyphlopidae			
<i>Leptotyphlops macrorhynchus</i>		+	SS
Typhlopidae			
<i>Typhlops vermicularis</i>	+		P
<i>Typhlops simoni</i>	+		P
Boidae			

<i>Eyrx jaculus</i>	+	+		SS
Colubridae				
<i>Coluber elegantissimus</i>			+	A
<i>Coluber jugularis asianus</i>	+			P
<i>Coluber nummifer</i>	+			P
<i>Coluber ravergeri</i>	+			P
<i>Coluber rhodorachis</i>		+	+	?
<i>Coluber rogersi</i>	+			P
<i>Coluber rubriceps</i>	+			P
<i>Coluber schmidtii</i>	+			P
<i>Coluber ventromaculatus</i>			+	A
<i>Eirenis coronella</i>	+	+		SS
<i>Eirenis decemlineata</i>	+			P
<i>Eirenis lineomaculata</i>	+			P
<i>Eirenis rothi</i>	+			P
<i>Lytrochynchus diadema</i>			+	SS
<i>Lytrochynchus kennedyi</i>		+		SS
<i>Natrix tessellata</i>	+	(+)		P
<i>Rhynchocalamus melanocephalus</i>	+			P
<i>Spalerosophis diadema cliffordi</i>		+	+	SS
<i>Malpolon moilensis</i>		+	+	SS
<i>Malpolon monspessulanus insignitus</i>	+	(+)		P
<i>Micrelaps muelleri</i>	+			P
<i>Psammophis schokari</i>	+	+	+	SS
<i>Telescopus dhara</i>			+	SS
<i>Telescopus fallax syriacus</i>	+			P
<i>Telescopus nigriceps</i>		+		A
Atractaspididae				
<i>Atractaspis microlepidota engaddensis</i>	(+)		+	Af
Elapidae				
<i>Walterinnesia aegyptia</i>	(+)	+	+	A
Viperidae				
<i>Cerastes cersates</i>			+	SS
<i>Echis coloratus</i>	(+)		+	SS
<i>Pseudocerastes persicus fieldi</i>		+		A
<i>Vipera palaestinae</i>	+			P

* Based on ARNOLD (1987), JOGER (1987), WERNER (1987 and 1988), LAMARCHE and CLEMENT (1988), GASPERETTI (1988) and SCHATTI and GASPERETTI (1994).

(+) the species penetrates into the preiphery of the indicated ecozone

A: Arabian, Af: Afrotropical, IT: Irano-Turanian, P: Palaearctic, SS: Saharo-Sindian.

M: Mediterranean, B: Badyiah, W & S: Wadi Araba and southern Jordan

Appendix 2
LIST OF MAMMALS KNOWN FROM JORDAN

Order Insectivora
Family Erinaceidae
Hedgehogs

- Erinaceus europaeus concolor* Martin 1838
Hemiechinus auritus calligoni (Satunin 1901
Paraechinus aethiopicus pectoralis (Heuglin 1861
Paraechinus aethiopicus ludlowi Thomas 1919

Family Soricidae
Shrews

- Crocidura russula monacha* Thomas 1906
Suncus etruscus etruscus (Savi 1822

Order Chiroptera
Suborder Megachiroptera
Family Pteropodidae
Fruit-bats

- Rousettus aegyptiacus aegyptiacus* (E. Geoffroy St. Hilaire 1810

Suborder Microchiroptera
Family Rhinolophidae
Horseshoe Bats

- Rhinolophus blasii blasii* Peters 1866
Rhinolophus hipposideros minimus Heuglin 1861
Rhinolophus euryale judaicus (Anderson and Matschie 1904
Rhinolophus ferrumequinum ferrumequinum (Schreber 1774

Family Rhinopomatidae
Mouse-tailed Bats

- Rhinopoma hardwicki cystops* Thomas 1903

Family Vespertilionidae
Vespertilionid Bats

- Pipistrellus kuhli ikhawanius* Cheesman and Hinton 1924
Miniopterus schreibersi pallidus Thomas 1907
Otonycteris hemprichi jin Cheesman and Hinton 1924
Myotis nattereri hovei Harrison 1964
Myotis capaccinii bureschi (Heinrich 1936
Myotis emarginatus emarginatus (E. Geoffroy St. Hilaire 1806

Family Molossidae
Free-tailed Bats

- Tadarida teniotis rueppelli* (Temminck 1826

Order Lagomorpha
Family Leporidae
Hares

- Lepus capensis arabicus* Ehrenberg 1833
Lepus capensis syriacus Ehrenberg 1833

Order Rodentia
Family Sciuridae
Squirrels

Sciurus anomalus syriacus Ehrenberg 1828

Family Cricetidae
Hamsters, Jirds and Gerbils

Cricetulus migratorius cinerascens (Wagner 1848)

Gerbillus dasyurus dasyurus (Wagner 1842)

Gerbillus nanus arabium (Thomas 1918)-

Gerbillus henleyi mariae (Bonhote 1909)

Gerbillus gerbillus gerbillus (Olivier 1801)

Gerbillus andersoni De Winton 1902

Sekeetamys calurus calurus (Thomas 1892)

Meriones tristrami tristrami Thomas 1892

Meriones libycus syrius Thomas 1919

Meriones crassus crassus Sundevall 1842

Meriones shawi (Duvernoy 1842)

Psammomys obesus obesus Cretzschmar 1828

Family Spalacidae
Mole rats

Spalax leucodon Nordmann 1840

Family Arvicolidae
Voles

Microtus guentheri guentheri (Danford and Alston 1880)

Family Muridae
Rats and Mice

Apodemus mystacinus mystacinus (Danford and Alston 1877)

Rattus rattus Linnaeus 1758 colour form *frugivorus*

Rattus norvegicus norvegicus (Berkenhout 1796)

Mus musculus praerextus Brants 1827

Acomys cahirinus dimidiatus (Cretzschmar 1826)

Acomys russatus lewisi Atallah 1967

Nesokia indica bacheri Nehring 1897

Family Gliridae
Dormice

Eliomys melanurus melanurus Wagner 1840

Family Dipodidae
Jerboas

Jaculus jaculus vocator Thomas 1921

Allactaga euphratica euphratica Thomas 1881

Family Hystricidae
Porcupines

Hystrix indica indica Kerr 1792

Order Carnivora
Family Canidae
Jackals, Foxes and Wolves

Canis lupus pallipes Sykes 1831

Canis aureus syriacus Hemprich and Ehrenberg 1833

Vulpes vulpes arabica Thomas 1902

Vulpes ruppelli sabaea Pocock 1934

Family Mustelidae

Martens, Otters, Badgers, Polecats and weasels

Vormela peregusna syriaca Pocock 1936

Martes foina syriaca Nehring 1902

Meles meles (Linnaeus 1758)

Lutra lutra seistanica Birula 1912

Mellivora capensis wilsoni Cheesman 1920

Family Viverridae

Mongoose and Genets

Herpestes ichneumon ichneumon (Linnaeus 1758)

Family Hyaenidae

Hyaenas

Hyaena hyaena syriaca Matschie 1900

Family Felidae

Wild Cats, Lynx, Leopards and Cheetahs

Felis silvestris tristrami Pocock 1944

Felis margarita harrisoni Hemmer, Grubb and Groves 1976

Felis chaus furax De Winton 1898

Caracal caracal schmitzi (Matschie 1912)

Acinonyx jubatus * (Schreber 1776)

Panthera pardus nimr ** (Hemprich and Ehrenberg 1833)

Order Hyracoidea

Hyraxes

Procavia capensis syriaca (Schreber 1784)

Order Artiodactyla

Family Suidae

Wild Boars

Sus scrofa libycus Gray 1868

Family Bovidae

Wild Goats and Gazelle

Capra ibex nubiana F. Cuvier 1825

Gazella gazella Pallas 1766

Gazella subgutturosa marica Thomas 1897

Gazella dorcas Linnaeus 1758

Oryx leucoryx ** (Pallas 1777)

* Extinct or rarely seen

** Introduced recently after being extinct.

Appendix 3
Agriculture Law No. 20 for the year 1973.

Part two

Section 1

Chapter 3 Protection of birds and wild animals and their hunting regulations

- Article 144 It is prohibited to hunt birds and wild animals without a license issued by the Ministry.
- Article 145 **A⁽¹⁾**- It is prohibited to hunt, or kill, or capture by any means of beneficial birds for agriculture, also it is prohibited to possess or transfer or sell or display for sale alive or dead.
B- It is prohibited to hunt raptor birds or carnivorous animals or capturing by any means or its poisoning without a permission issued by the minister.
C- The Minister to issue decrees specifying bird species of which the regulations of this article are applicable, and indicating the terms for issuing a hunting license for scientific purposes.
- Article 146 It is prohibited to destroy dens, nests or burrows of wild animals or picking or destroying their eggs or harming their young.
- Article 147 It is for the Minister to specify areas and hunting seasons, and bird's species and wild animals that are allowed to be hunted.
- Article 148 **A-** It is prohibited to use mechanical vehicles or spotlights or automatic guns in hunting birds and wild animals.
B- It is prohibited to use military rifle in hunting wild animals, with the exception of animals designated by the Minister.
- Article 149 It is prohibited for foreigners residing outside the kingdom to hunt birds and wild animals without a license from the ministry.
- Article 150 It is prohibited to enforce cruelty on animals.
The Minister issues decisions to specify certain animals that are encompassed within this prohibition.
- Article 151 **A-** It is prohibited to import sticky materials (used for capturing birds) or selling, owing or using.
B- It is prohibited to use any form of traps for bird capturing.
C- It is prohibited to hunt birds by using any camouflage devices (banners, animals skin, Calling device).
D⁽²⁾- It is prohibited to use anesthetizing drugs in hunting birds and wild animals.
E⁽³⁾- Aquatic birds specified by the Minister are exempt from the regulations of these paragraphs.

-
- (1) This article was amended by overruling the original declaration and superseding it with the current declaration in accordance to law No. (14) for 1974 published in page 541 in volume No. 2486 in the Official Gazette in 16.4.1974.
- (2) This paragraph was added as paragraph (C) and the original paragraph (C) was re-numbered as paragraph (D) in accordance to the amended law No. 14 for 1974 published in page 541 in volume No. 2486 in the Official Gazette in 16.4.1974.
- (3) This how the sequence of this paragraph was amended to become paragraph (E) after adding the present paragraph (D) in accordance to the amended law No. 14 for 1974 published in page 541 in volume No. 2486 in the Official Gazette in 16.4.1974.

- Article 152. The Minister forms a committee known as (The Hunting Committee), responsible to specify hunting grounds and hunting seasons for birds and wild animals that are allowed and all matters concerned with it.
- Article 153. Any one who hunts differently against these issued regulations of this section will be punished by a fine not less than⁽⁴⁾:
- A- 100 Jordanian Dinar for each desert or mountain gazelle or an ibex.
 - B- 25 Jordanian Dinar for each Hubra bustard
 - C- 10 Jordanian Dinar for each animal or bird with the exception of the wild boar
- Article 154. A⁽⁵⁾- In case of using a mechanical vehicles during hunting against to the regulations of article No. 148 of this law or the issued regulations, the vehicle driver will be punished by a fine not less than 10 Jordanian Dinar, and the owner of the vehicle will be punished similarly if the offense was to his knowledge in addition to the punishment stated in article 153 of this law, and in case of continuing offense, the fine will be doubled and the hunting license will be withdrawn for one year.
- B- In case the continuing offense within one year the punishment is doubled and the weapon or the devised used in hunting will be confiscated
- C⁽⁶⁾- In addition to punishments stated in articles 153 and 154, the weapon used in hunting will be confiscated for the following offenses:
1. Hunting with an expired hunting license
 2. Hunting in prohibited areas
 3. Hunting out of hunting season
- Article 155. Ministry of agriculture personnel, public security, Armed forces and individuals not employed by the ministry entrusted by the Minister are responsible to arrest any offender against the regulations of this chapter and deliver them to the nearest police station along with a report.

(4) This article was amended by overruling the original declaration and superseding it with the current declaration in accordance to law No. (4) for 1968 published in page 88 in volume No. 3368 in the Official Gazette in 16.1.1986.

(5) This article was amended in accordance to the amended law No. (4) for 1968 published in page 88 in volume No. 3368 in the Official Gazette in 16.1.1986.

(6) This paragraph was added in accordance to the amended law No. 14 for 1974 published in page 541 in volume No. 2486 in the Official Gazette in 16.4.1974.

	Issue	Strengths	Weaknesses	Opportunities	Threats
	Institutional Issues				
1	Coordination among different agencies involved		Lack of coordination which leads to scattered efforts in identify and conserving Biodiversity	Better coordination that leads to the enhancement of the biodiversity of Jordan.	
2	Formation of a national institution specialized in biodiversity affairs	RSCN is partially conducting this responsibility .	Lack of human and financial resources.	Build up of specialized framework of human power that can plan for long term programs	Other agencies will loose their capacities to carry on their regular activities.
3	Data base for biodiversity	RSCN and JUST are starting to build up a data base in Jordan.	Lack of funds and trained personnel. The access to database is limited.	Money generating resource through distribution of this service.	Duplication of efforts and non-uniformity of standards.
4	Funds for biodiversity research	Limited local funds .	Lack of institutions or agencies that are interested in funding such activities.	Looking for international agencies for funding and cooperation, reflected in job opportunities and better training.	Some institutions will benefit more due to competition which may render their activities.
5	Specify roles for current institutions	Few agencies such as RSCN and Forestry Department have defined roles.	Most agencies change their role according to funding and improper vision for current issues.	Different agencies should define their roles and mark their territories.	Manipulation of authorities when it comes to data access.
6	Legislation concerning protection of biodiversity	Their are several legislation concerned with biodiversity.	Weak law enforcement and gaps in regulations and of amendments for the existing legislation.	Further input from the institutions to come up with a fully detailed legislation. Enhancement of enforcement procedures.	
	Enforcement of wildlife protection law	RSCN is fully active in wildlife protection and law enforcement	Lack of funds and well trained human resources and governmental commitment.	Good management of wildlife and its prosperity.	

7	Trained personnel	The cooperation between RSCN and local universities yielded some trained personnel.	Many aspects of biodiversity management still awaits highly trained and dedicated personnel.	Creating job and opportunities for training and sharing of experiences.	Trained personnel may loose dedication and interest if not supported regularly.
8	Formation of a national museum	Two natural history museums exist in JU and YU	Small number of specimens that does not reflect the biodiversity panorama of Jordan. Lack of trained personnel and time resources for collection and preservation.	Finding a museum with a comprehensive collection that represents the biodiversity. Attraction of specialists and researchers locally and internationally.	Distance from other museums that may result in duplication of efforts and personnel.
10	Consultation of specialist in long term planning	RSCN and some institutes consult and coordinate with Jordanian specialists on issues related to biodiversity.	No long term coordination and cooperation.	Long term planning that will reflect in a better understanding of the whole issues between the specialist and the related agencies.	
Technical					
1	Degradation of habitats	RSCN and the forestry department are establishing protected areas	The issue is been related to as specific sites and not integrated network of habitats and micro systems	Integration of network of habitats and ecosystems where natural corridors are established where wildlife rejoices the effective protection	Fragmentation of habitats where the wildlife is isolated in islands and this will lead to the extinction of key species especially species that have natural migration patterns
2	Extinction of endemic and endangered species of flora and fauna	Some species are protected by law and exists in protected areas	No updated information on the population dynamics of these species	These species are protected by international and regional treaties	Level of degradation is accelerating in an irreversible rate where many species will be extinct in the near future
3	Carrying capacity of sites and natural habitats	Management of sits for multipurpose use	Lack of trained personnel on management of protected areas where multi-management of wildlife is practiced	Management of wildlife can generate funds for the enhancement of the sites and its biodiversity through ecotourisim and bio-industry	The over use of the carrying capacities of the sites could cause irreversible process of degradation of sites where the biological qualities of sites are lost.

4	Land tenure of sites with important biodiversity of sites are to governmental agencies not related in conservation issues or private sector	Lands that are under military jurisdiction enjoy relatively good conservation where many wildlife is still under natural conditions	The intention of such agencies to develop the sites in an unsustainable manner	Coordination and cooperation of such agencies will lead to a good chance of protection of such wildlife	The misuse of such sites and its wildlife including its natural resources against its carrying capacities is a real threat to the survival to some of its important wildlife
5	Regional cooperation	Many countries of the region share the same wildlife and biodiversity	Lack of proper cooperation where regional coordination is imposed from out of the region	Regional coordination for the conservation of the biodiversity in the region	the socio-economical situation of the region is imbalance where some countries are misusing the charred biodiversity more than others which will lead to fast extinction of this wildlife
6	International treaties on the conservation of migratory species and global biodiversity and protected areas and their status	These treaties and conventions give the biodiversity certain status that have helped up-to-date in its conservation	The survival of such species have been on the edge of life without any real enhancement of their natural increase in numbers or evolution. These species are not addressed in the new environmental law which weakens their effectiveness in implementation	The enclosure of such treaties in the Jordanian constitution at this stage of environmental legislation in Jordan	
6	Reintroduction of extinct species	The balance of many ecological systems and its diversity	Money consuming process and lack of well trained personnel on reintroduction programs. Some species do not exist in the wild any more but are kept in zoos all over the world	Attraction of international funding for such biodiversity projects. Training of local personnel on wildlife biology and biodiversity aspects	Introduction of exotic species and the extinction of these species forever

	Issue	Strengths	Weaknesses	Opportunities	Threats
	Management Issues				
1	Land management	not known			
2	Pesticides used in agriculture	The ministry of agriculture has unspecified regulation legislation for the use of pesticides	The public is using different types of pesticides without knowledge on their illeffects on biodiversity	Monitoring and control of pesticides through an a legal body. Encourage the use biological control agents	
3	Pollution	Many institutions in Jordan have considerable know how to deal with pollution issues	Lack of coordination between many organization that cause pollution and deal with waste management. Lack of clear national strategy and standards on waste management. lack of adequate awareness between the general public on pollution issues	The usage of biodiversity as indicators of pollution and habitat status. The involvement of biodiversity to help in decreasing of pollution levels in highly polluted areas and around protected areas	Many migratory species is affected by pollution exposed to on their migratory patterns and this leads to extinction of endangered species locally and globally
4	Public awareness	In cooperation with many international missions with RSCN having a leading roll all environmental NGOs are highly active in the PA process where Jordan is considered as one of the leading countries of the region	Lack of diversity in PA topics and target groups. Lack of well trained personnel and research on the subject . No real methodology of PA and lack of coordination between different organisations	Address more diversified environmental issues and diversified target groups	
5	Habitat degradation	In some protected of RSCN the habitat degradation is managed	No real knowledge and methodology on indicators of habitat degradation . lack of human resources that deal with such issue	Develop a comprehensive methodology on habitat degradation in Jordan through the usage of biodiversity as indicators of such degradation	The loss of many habitats is irreversible where new man made habitats have been created in some areas. In marginal areas of Jordan the process of degradation is accelerating.

6	Hunting	Agriculture law no 20 for the Year 1958 with its amendments. RSCN have been delegated to implement the hunting law in Jordan	Lack of funds and human resources to effectively implement the law. The hunting law have many gaps within it and it does not address the international conventions and treaties. It is not standardized to compile with regional hunting laws	Amend the existing hunting laws and update it. Train more Jordanians on law enforcement and ranging systems	
	Land use	The management plan of Dana address some land use issues	No land use policy and strategy on the national level	Establish a land use policy to include protection policies and strategies. Establishment of a comprehensive land use master plan for Jordan	land is speculated and misused against its carrying capacities
7	Hasty decisions in planning		Duplication of efforts. Degradation of habitats and wildlife. Lack of trained personnel on environmental planning	Cooperation and coordination between NGOs and Government agencies in environmental planning. Training of Jordanians on comprehensive and sustainable planning	Many habitats and species under direct threat of degradation due to lack of comprehensive planning
8	Forestry	Conservation of many forests in the north and south of Jordan by the Forestry department and RSCN	No habitat approach in the protection of the forests and this means to protect the Flora, and the fauna of the site. No research on many sites where many sites lack updated baseline ecological which is hard to implement real management of the sites. Many sites have been introduced with exotic species of plants that cause habitat degradation of the sites	Baseline ecological research of the forests. Train local wildlife biologists and foresters on habitat assessments and management. Introduction of indigenous species to the forests	Degradation of forests. Distruction of habitats and extinction of species. Overgrazing of the sites and fires in forests due to lack of management of forests

9	Water resources		<p>Pollution of water sources. depletion of sources. Lack of management water sources as watersheds that could be conserved and managed. Many surface water sources have lost their natural biodiversity and are introduced by exotic species. Many wildlife depend on water resources for survival. Lack of trained hydrobiologists that can deal with conservation and management of water sources and their biodiversity</p>	<p>Conservation and management of biodiversity of water sources. Usage of many aquatic diversity as indicators for waste water management. Many aquatic species could be used in bio-industry for protein production and other pharmaceutical usage. Watershed management approach to the conservation and management of water resource sites rich with biodiversity</p>	<p>Extinction of endangered and endemic aquatic species. Degradation of aquatic habitats. Introduction of exotic species which causes in the change of the water quality and quantity.</p>
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ANNEX A2

LAND USE PLANNING ISSUES PAPER

by

Ramzi N. Kwar

**HASHEMITE KINGDOM OF JORDAN
MINISTRY OF PLANNING
AND
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT**

JORDAN PARKS POLICY PROJECT

**Land Use Planning
Issues Paper**

**Prepared by
Ramzi N. Kawar**

May 5, 1996

OVERVIEW

This paper focuses on the land use planning issues for the Jordan Parks Policy Project. The paper includes a brief overview of the issue in a historical context, discussion of the regulatory environment, and documentation of the current situation in a SWOT (Strengths, Weaknesses, Opportunities, and Threats) matrix.

A working definition of land use planning is the process of determining the location of discrete areas for different land use activities. In land use planning, land use areas are locked out for specific uses within the context of higher order planning criteria and the directives and/or requirements of an integrated National, Regional, or Urban planning.

The major factors that perpetuate land use problems in any country and typically account for continued resource degradation, occupation of hazard-prone areas, and excessive urban sprawl are: inappropriate regulation, lack of tenure security, inadequate infrastructure capacity, inadequate information, inappropriate pricing and taxation, and weak institutions and poorly co-ordinated actors in the land market.

In the recently completed National Environmental Action Plan for Jordan report, three main environmental issues related to the use of land have been identified:

1. Land degradation.
2. Land contamination.
3. Coastal zone degradation.

These issues are considered a threat to the land resources and land cover of Jordan, especially because the country is mostly arid and semi-arid. Almost 90% of the land area receives less than 200 mm of rainfall annually as reflected in its soils, its land cover of range grasses and forest, and in the way Jordanians use their land.

The remaining lands are suitable for more intensive uses, such as irrigated and non-irrigated agriculture, forestry, tourism, recreation, urban and industrial development. Most of the country's economic activities take place on 10% of its land and competition between different user groups for these lands is therefore intense. any degradation or permanent loss of land resources, in particular of the non-grazing lands, endangers current and potential land use, makes these resources more scarce, and thus had direct or indirect economic consequences.

Land degradation in Jordan is caused mainly by soil erosion and flash floods, deforestation, range land deterioration, urban encroachment, mining spoils, and absence of land use planning. Land contamination is caused by solid and liquid waste, excessive agrochemicals and plastics, and salinization of land. Coastal and marine degradation is affecting both the Gulf of Aqaba, and the Dead Sea.

Types of Land Tenure in Jordan

While legal forms of land tenure in Jordan date from the early Islamic period, it was the Ottoman Law of 1858 that became the historical underpinning for legal assessment of land ownership and tenure. Jordanian property laws have also been influenced by the Egyptian Civil Code, and British and French laws. According to The Ottoman Land Code, land was classified into five categories:

1. **Mulk Lands:** Private property held in full ownership. Mulk land was limited to urban areas. Land ownership comprises two rights: the raqaba, or right of absolute ownership, and the tassarruf or the right to the usufruct of land. Both of these rights belonged to the individual in this category.
2. **Miri Lands:** Property owned by the state. Most of the agricultural land was classified as Miri land. The raqaba or absolute ownership belonged to the state, while the usufruct or tassarruf to the individual. This land was either held as part of the royal-domain or was leased to individuals to exploit it and pay dues or taxes to the state through various conditions of tenure.
3. **Waqf Lands:** "Land dedicated to God" or land held in perpetuity with the income devoted to the upkeep of a charity or the family of the constituter of the Waqf. However, only Mulk land and not Miri land could be transferred into Waqf land.
4. **Mawat Lands:** "Dead land" or unoccupied land which has not been left for public use. This part includes land lying outside the confines of villages and cultivated areas.
5. **Matrukah Lands:** "Abandoned" land or Mulk, Miri, or Mewat land that is reserved for public purposes.

Human Settlements in Jordan belong to three historic periods:

Historic

The age of settlements in rural Jordan goes back to the Neolithic period. For the past 10,000 years people lived in tents, encampments, in villages, towns and cities, in rural estates, and in single farmhouses.

Those settlements and the percentage of population living in them reflect the changing pattern of social structure and political stability. The landscape is rich with archaeological sites which often were home to several human settlements built on top of the other and are still being inhabited. The villages of Um eljimal and Um Qais are two examples of settlements which have been continuously inhabited since the historic period. The Greco-Roman planning tradition is visible in many parts of these settlements.

Old

In the pre-colonial period prior to the creation of the state of Jordan, the region was an integrated part of the Ottoman dominated Bilad al Sham. Relative to other parts of Syria, this southern region was underdeveloped. Generally speaking, the settlement pattern reflected the diversity of population living in the towns, villages, and the desert.

In the highlands of the north, settled agricultural communities practised agriculture and limited herding. The village community was the locus of a subsistence level economy with limited surplus which was exacted as tax from the Ottoman state. The village was also the focus of the socio-political unit based on lineage and kin groupings.

In the plains, settlement was infrequent due to harsh climatic factors, and reflected the practice of seasonal cultivation, yearly land following, and the option of migration in bad years.

In the desert, nomadic bedouins roamed in seasonal migratory patterns following water and grass. Their economy was intertwined with the larger Syrian one. Their camel caravans moved goods for the city merchants, protected the Pilgrimage to Mecca, provided transport to the pilgrims, and sold animals and other products to villagers in exchange for needed products.

Every Bedouin inherited membership of a tribe through the male line. Tribes and confederations of tribes inhabited and controlled their own territories. Several tents of the same tribe, whose inhabitants are closely related by descent or marriage, often join together on a seasonal basis to exploit pasture and water in the same locality.

This ecologically balanced socio-economic system was transformed with the gradual integration of the region into the world market economy.

Recent

With the introduction of modern infrastructure, roads, and services into the country side during the 1950's and 1960's, villages have increased in numbers. In fact, the majority of currently inhabited villages are those built in this period. These villages were of a mixed character combining the traditional and more recent buildings. With the introduction of municipal plans, several villages became officially planned with zoning regulations governing their growth.

INSTITUTIONS

It has become obvious in several recent studies that the starting point in the proper environmental management and protection of natural and cultural resources of Jordan ought to be proper land-use planning. Although, there is currently no comprehensive land use planning system in Jordan, responsibility for land resource management is divided among several Ministries, which leads to conflicts in policy and resource allocation. While the Ministry of Agriculture is responsible for the range lands and forests, watershed management, and control of desertification seem without institutional support.

The various responsibilities and the institutions overseeing them can be summarised in the following table. This covers the following land uses: agriculture, grazing, mining, urban development, tourism, and transportation.

Ministry of Municipal and Rural Affairs and the Environment (MMRAE): is responsible for the supervision of urban planning done by the municipalities, but is weak in this. A comprehensive land-use scheme is lacking on national, regional and local level. Being a prerequisite for nearly all decisions, e.g. in the water sector for the location and design of waste water treatment facilities, in the transportation sector for design and construction of roads, for agriculture, industrial facilities, for mining, for the protection of nature reserves, lack of land-use planning creates serious threats for the environment as well as for public health. Examples of problems caused by lacking land-use planning are the City of Amman's expansion to the West that has encroached some of Jordan's best agricultural land while the eastern sites receive less rain.

Ministry of Agriculture: The Agriculture Law number 20 of 1973, gives the MOA some authority over land use.

Aqaba Region Authority: The development institutions of Aqaba Region were established in 1960 when the government established a committee for organising the city which developed land use patterns in the city. The Aqaba Region Authority was established in 1984 and amended in 1987 to have a nominal entity and financial and administrative autonomy over the region.

The Jordan Valley Authority: According to the Jordan Valley Development Law No. 19, 1988, article 3, the JVA is also responsible for "The development of towns and villages, the selection of their sites, and the delineation of their boundaries. Also the preparation of skeleton and detailed plans of the cities and villages shown on these plans..."

POLICY ISSUES RELATED TO LAND USE PLANNING

Definition Issue

Issue: No common working definition of sustainable land use and planning

Environmental Issues

Issue: The absence of land use planning has aggravated the degradation of natural and cultural resources of Jordan.

Issue: Absence of EIA for urban planning

Issue: Imbalanced population growth and pressure on the land.

Issue: The encroachment of urban and rural development on prime agricultural lands, green areas, open spaces, and forests.

Legislation Issues

Issue: The lack of a clear legal mechanism for enforcing the use of integrated regional/urban land use planning/zoning as a part of comprehensive national development planning.

Issue: The lack of a clearly defined prioritization mechanism used in land use planning.

Issue: Weakness of existing laws and inadequate enforcement of laws, codes, and regulations.

Issue: Existing legislations related to land need strengthening, updating, and development.

Issue: Existence of ambiguous land tenure systems.

Issue: Inappropriate pricing and taxation (urban land speculation, property tax, transfer tax, vacant land tax, profit tax).

Issue: lack of comprehensiveness of existing legislation.

Institutional Issues

Issue: There are multiplicity of institutions responsible for land use planning. Overlapping authorities which believe they control the use of land.

Issue: Lack of integrated planning.

Issue: Lack of communication and co-ordination among agencies.

Issue: Absence of nationally agreed upon land use plans / buffer zones.

Issue: Decentralisation of operations to the local level

Management Issue

Issue: Availability, accessibility, co-ordination, and proper use of land information.

Issue: Lack of a system of monitoring and evaluation the land use situation.

Issue: Lack of funds for land use planning and management.

Issue: Lack of stakeholders awareness and participation in land use planning process.

SWOT ANALYSIS FOR PRIORITY ISSUES FOR LAND USE PLANNING

Definition Issue

Issue: No common working definition of sustainable land use planning in Jordan

S: No strength is identified

W: There is a lack of political will to tackle a very thorny issue because it reveals many of the contradictions arising from a lack of clear national development priorities which are laid out in a strategic plan. This in turn continues to be the present status quo of no clear vision of what constitutes good, healthy, balanced, and sustainable land use. Hence there are no clear criteria for the selection of land use and planners are not given guidelines to work within.

O: There is a great need for a national dialogue on land use in Jordan. A serious discussion will require the

T: The continued chaotic land development will further deteriorate natural and cultural resources to the point of irreversable damage.

Environmental Issues

Issue: The absence of national land use planning has aggravated the degradation of the Natural and Cultural resources of Jordan

S: No strength is identified.

W: Some of the required measures may not be politically attractive at this time.

O: A proper land use planning system will reinforce the implementation of the recommendations put forward in the National Environmental Strategy, National Environmental Action Plan, and other donor agency studies regarding land resource management, urban environment management, and natural / cultural resource management.

There is an opportunity to set up a national land use planning system which could be housed in one or more government agency. The recommendation is to provide the legal basis for development and enforcement of a national land use plan to achieve optimum use of land among competing user groups: agriculture, grazing, mining, urban development, tourism, and transportation. At the same time, land tenure problems particularly in the Badia could be addressed to halt or reverse desertification. Declare all Government forest land national reserve to help ensure its preservation. Control urban expansion.

T: The continued degradation of land (soil erosion, deforestation, range land deterioration, urban encroachment, and mining spoils); coastal zones and marine resources (Gulf of Aqaba and the Dead Sea); and the loss of natural habitats and biodiversity. The continued degradation of Antiquities and Historical cultural resources.

Discussion: The land situation in Jordan suffers from extreme structural imbalances in the use of lands for various purposes, whether for housing, industry, agriculture, and mining. The concentration of industrial and residential districts in specific areas has aggravated the congestion on lands which in turn has made it difficult to supply infrastructure, and a rise in prices. The rise in prices of land has also led to the unavailability of suitable parcels of land for housing, especially for the low income groups

Legislation Issues

Issue: The existing laws affecting land use are weak and not properly enforced.

S: No strength is identified

W: While the Agricultural Law defines each land use type it is not enforced properly. Private forest can be cut and land converted to other agricultural uses or for human settlements. Public forest lands are transformed to other urban purposes.

O: The clarification of laws affecting land and strengthening of enforcement mechanisms to protect land.

T: The loss of agricultural land due to urbanisation and other uses.

Discussion: There is an urgent need for the development of strategic planning in a dynamic manner able to analyse the varying and conflicting demands on land use in the short, medium, and long term, in order to smooth out imbalances and absorb the various national needs.

Issue: Existing legislations related to land are in need of development

S: No Strength is identified

W: Existing legislations are not comprehensive, inadequate, and inappropriate to deal with the changing situation, since most of these legislations are forty years old.

O: There is an opportunity to amend these laws to suit the present and future needs of Jordan.

T: The continued problems due to obsolete laws.

Discussion: The following laws are seen to need amendment:

Adjust the Cities, Villages, and Buildings Law No. 79 for 1966. Specifically:

a. To adjust the Higher Planning Council to include representatives from the Ministry of Agriculture, Department of Lands and Surveys, and the private sector.

b. To adjust the duties and roles of the local and district authorities to include efficient and professional staff.

c. Identify and determine the zoning and detailed planning process accurately in order to show the privileges of the planning councils.???

d. Allow for local planning units to approve the amendments on the zoning plans.

Taswiah law No. 4 for 1952

The law of division of immovable common property No. 48 of 1953

Issue: Inadequate Regulation

S : No strength is defined.

W : Lack of effective land use policies, inadequate regulatory framework, compatible building codes, and weak enforcement of laws.

Rigid planning laws, building regulations, and permit rules that do not cater for the current market needs especially for low income houses.

Lack of effective controls to regulate land use in wetlands, coastal zones and sensitive areas.

Few trained professionals available to prepare plans and formulate appropriate development regulations.

Absence of technical guidelines for managing land to meet both environmental and developmental objectives.

With respect to cultural resources, inadequate zoning compromises the integrity of historic properties or districts. Weak economic incentives thorough tax exemptions, credits, subsidies or penalties to encourage conservation and rehabilitation.

Absence of policy to reduce land speculation.

Weak co-ordination among the responsible regulatory bodies.

O : Making use of existing studies e.g. National Soil Survey and different National Strategies and Action Plans, to enhance the existing regulation.

Developing a National Land Use Policy based on the National Soil Survey.

Revising regulation in view of the current economic status and socio-economic change.

Training of responsible staff.

Better co-ordination among various bodies and creation of a co-ordinating party to increase information sharing and decrease redundant work and incomplete formulations of regulation.

T : Land degradation in all of its forms, loss of agricultural land and loss of cultural resources and recreational space. High land speculation and adverse economic impact. Deteriorating aesthetic quality.

Discussion: Inappropriate regulation is probably the most important factor accounting for losses of ecological and culturally important resources. The absence of a formulated effective land use

policies, laws and standards that address development in sensitive areas or the improper enforcement of existing land use regulations, give rise to serious problematic issues in land use and land degradation and loss of cultural resources. Jordan does not lack the institutions responsible for regulations, recently the Regional Planning Department has been formulated at the MMRAE to be responsible for regional planning issues and land use. Awareness of regulatory problem exists as well as many guideline studies and National Strategies.

Institutional Issues

Issue: There are multiplicity of institutions responsible for land use planning.

S: No strength is identified.

W: Lack of co-ordination among institutions, lack of clearly defined roles, and weakening of institutions in areas affecting land use planning.

Weak institutional capacity undermines government efforts to manage land and cultural resources effectively.

Many overlapping of functions and sharing of the same role in land and cultural resource management and provision of housing among the various governmental and private actors.

Conflicting interests and a general lack of co-ordination among the actors; the entity making the plans and regulations is not the one making the decisions about land management and development.

O: Enhancing institutional capacity through training. Sharing of information and practices.

T: Without clear definition of mandates and responsibilities, no comprehensive land use will take place, leading to continues mis management, will enforce confusion and reduce chances for integrated management Inappropriate management of land and resources. Reduced sharing of information leading to repetitive work.

Issue: Availability, co-ordination, and use of land information.

S : Existence of information at various institutes, e.g. DLS Land Information System database and Land transactions and parcelation GIS database system, DOA inventory and CRM system JADIS, HUDC housing studies etc..

W : Incomplete legal cadastre, and unclear legal rights to some properties due to tribal and customary systems of land tenure.

Inadequate information on land use and environmental information on the resources to be managed, poses difficulties for local authorities to establish effective regulation and policies affecting cultural resources and sensitive areas.

Inadequate information on socio-economics, land conversion rates, locations and capacity of existing utilities and services.

In terms of cultural resources protection, incomplete inventory of archaeological sites and non-existent inventory for other cultural resources.

Lack of a National Land Information System (LIS) and a National and comprehensive geographical land database based on GIS.

Inadequate sharing of existing data and information among the concerned bodies.

Outdated information and inefficient processes of information update.

Lack of continuous information monitoring.

O : Opportunity exists to integrate all of the existing data and information dealing with land parcels, land use, land values, soil, cultural resources, wildlife resources, legal cadastre, zoning, archaeological inventory, land parcels and ownership, socio-economic surveys, housing surveys etc... into one National database.

Sharing of information among agencies through computer networks.

Establishing of LIS and GIS systems on a National scale.

Modernise method of work in governmental institutions by training staff and introduction of computer services.

T : Inadequacy of land information poses severe constraint on land market transactions, land use, environmental planning, property taxation and resource management.

Lack of information inhibits the formulation, implementation and enforcement of land management schemes as well as broader environmental management strategies.

Lack of baseline data undermines adequate environmental assessment of proposed development projects.

Issue: Land conversion for urban development

S : Existence of National Soil Survey.
W : Few studies on land conversion and its subsequent effects on food security, low income housing and national economies.
Unco-ordinated management of land zoning and regional planning.
Competition for lower priced agricultural land by expatriates and high income individuals drives up land prices causing its sale to be more economically attractive than farming the land.
Higher salaries of urban and industrial service workers than those of tenant farmers causing the latter to leave the farms.
Increase purchase of land due to lack of alternative investments and the fact that land is regarded as a secure hedge against inflation.
T : Loss of prime agricultural land.
Increase of food costs and food imports.
Mixing land uses, agricultural and urban, increases the water demand.
Threat of replacing the visual amenities of rural and pastoral landscapes with dense urban housing and industries.

Issue: Excessive urban sprawl / Village Development and Encroachment

S : No strength is identified.
W : Inefficient use of land; underutilization of land or infrastructure.
Excessive energy consumption.
High costs for providing infrastructure.
Haphazard development pattern.
Master plans of urban areas provide unrealistic urban expansion plans and do not reflect the market demand.
Improper use of infill lands.
O : No opportunities are identified.
T : Negative effect on aesthetic quality.
Congested road systems and conflict between transportation demands and amenities of urban areas.
Encroachment over agricultural lands.

Discussion: Urban sprawl refers to development on urban peripheries characterised by scattered low density development, incomplete infrastructure, excavated ground, and vacant lots.

ANNEX A3

NATURAL RESOURCES AND PROTECTED AREAS ISSUES PAPER

by

Dr. Maher F. Abu-Taleb

JORDAN PARKS POLICY PROJECT

Natural Resources and Protected Areas: Issues Paper (May 5, 1996)

Dr. Maher F. Abu-Taleb

Jordan's natural beauty attracts hundreds of thousands of visitors each year. Jordan is heavily dependent on tourism, so one of its attractions, the quality of its natural resources, is crucial to the country's continued development and prosperity. Not only are these natural resources alluring, but they are also unique and fragile. Situated in a semi-arid climatic zone, the country's flora and fauna offer hundreds of species found native or migratory. These features create potentially conflicting goals: a desire to increase and maintain economic growth, while preserving and protecting an appealing but highly vulnerable environment.

Today, nearly 5% of the Earth's land area is managed explicitly to conserve species and ecosystems, and most countries have national parks. The challenge facing Jordan is no longer deciding whether conservation is a good idea, but rather how it can be implemented in the national interest and within the means available. Protection of Jordan's natural resources is an essential part of its development. The environmental mistakes of the past do not have to be repeated. Today, Jordan has more choices: it can chose policies and investments that encourage more efficient use of resources, protection of wildlife, and the adoption of sustainable development practices. How Jordan addresses these issues will determine its ecological fate.

This paper looks at these and other choices available for natural resources and protected areas (NRPA) management. The paper begins by presenting a historical account of the development of protected areas in Jordan followed by an overview of protected area benefits in a global sense. The institutional and regulatory environment is also discussed, followed by a discussion of key concerns for NRPA. Next, the current protected areas situation and the natural resource base of Jordan are summarized. The paper concludes by presenting a list of key NRPA issues for assessment.

OVERVIEW

Although most national parks have been established in the past quarter of a century, societies have been consciously protecting ecosystems for thousands of years. Throughout recorded history, Jordan has been known for its forests, plants and wildlife as described by many historians and travelers. Historically, groups of settlers or tribes would protect their water springs, grazing lands and vegetation around their settlements. Nowadays, large areas of land are set aside by the government to protect the natural resources within their boundaries. There are

now seven nature reserves, eighteen grazing reserves, protected rangeland areas, a marine park at Aqaba, and others are in the establishment stage. The total land area currently under some kind of protection (grazing reserves, wildlife reserves and forests) is approximately 5.9% of the total land area of Jordan. It is worth mentioning that the IUCN has urged all countries to allocate at least 10% of national land and water resources to conservation, preferable as national parks.

Natural resources are open access commons available without charge to the first to take them - and hence subject to overexploitation. For that reason, nature conservation efforts have focused on the protection of habitats within the framework of parks and reserves. Some people argue that humankind has a moral obligation to protect and conserve natural resources and biodiversity. Such moral views conflict with, say, the right to earn a living, or the right to have access to food and shelter. If conserving biodiversity conflicts with these rights, then a major effort has to be taken to look for the other values of nature conservation, values that lie in the human benefits of conservation. In general, the overall benefits of protected areas include:

- **Recreation/tourism** - Except in areas whose primary objective is strict protection of natural conditions or research, some level of tourism and recreational use is normally allowed. Provision of such services is a primary means of receiving direct financial benefits from protected areas and stimulating employment and rural development in surrounding areas.
- **Watershed values** - Maintaining the natural vegetative cover helps control erosion, reduce sedimentation and flooding downstream, and regulate streamflows.
- **Ecological processes** - In their natural state, protected areas often benefit people downslope and downstream by maintaining the productive capacity of nearby areas.
- **Biodiversity** - The maintenance of biodiversity is currently considered to be one of the most important benefits of protecting natural areas. Biological resources form the basis of large numbers of industries and are important sources of food, medicines, chemicals, and other products used in both traditional and industrialized societies. By protecting habitats, the variety of species they contain also can be protected.
- **Education and research** - Research in protected areas may focus on a wide variety of topics, from animal behavior to changes in species diversity to measurement of environmental status and trends. Protected areas also provide an arena in which to instill in people an understanding and appreciation of the environment.
- **Consumptive benefits** - Protected areas can provide a number of outputs, including timber, food, wildlife products, fish, herbs, and medicines for now and for the future. If an area is to be considered protected, it is assumed that all such outputs will only be harvested on a sustainable basis. Depending on the category and objective of the protected area,

consumptive use of the resources may be totally forbidden, as in strict nature reserves and many national parks, or may be a primary function, as in multiple-use areas.

- Nonconsumptive benefits - This category of benefits includes those values people currently derive from protected areas that are not related to direct use. They include aesthetic benefits and cultural values. Certain protected areas may also be important and valuable historic sites for now and for potential value in the future.

THE INSTITUTIONAL AND REGULATORY ENVIRONMENT

Jordan has taken ambitious strides to strengthen environmental protection. The National Environment Strategy for Jordan (NES), officially approved in 1991, reflects a sound understanding of the environmental challenges currently facing Jordan including water shortages; over pumping of aquifers; population growth; desertification; agricultural land loss; air; surface water, marine, and ground water pollution; and loss of critical cultural resources. The Strategy provides important information and makes key recommendation to address these problems. The National Environmental Action Plan prepared by the Ministry of Planning in 1996 offers specific recommendations for addressing the environmental problems Jordan faces.

Responsibility for environmental protection in Jordan is divided among several "institutions," which in the broadest sense comprise organizations (public/private), laws, regulations, decrees, customs, and all that is associated with these. These institutions largely determine whether objectives can be achieved in practice. Currently, four organizations either now play, or have the jurisdiction to assume, important roles in the development and protection of Jordan's parks and nature reserves: the Ministry of Agriculture, the Ministry of Municipal, Rural Affairs, and the Environment, the Royal Society for the Conservation of Nature, and the Aqaba Region Authority.

Institutions

The Ministry of Municipal and Rural Affairs and the Environment (MMRA&E) developed from the Ministry of Municipal and Rural Affairs which was established in 1965 to supervise and monitor Jordan's municipal and rural councils. In 1980, the Department of Environment (DOE) was established within the Ministry. The DOE was specifically charged with planning activities to develop an environmental strategy. Paralleling efforts on the National Environment Strategy, Jordanian officials developed a new comprehensive environmental law which has been approved by Parliament. Law of Environmental Protection No. 12 for 1995 stipulates the creation of "the General Corporation for Environmental Protection," (GCEP) in lieu of the DOE.

GCEP will play an active role in environmental protection by participating in licensing for industry facility siting and other development activities. As new industries propose to start up,

the Corporation will review environmental assessments and make recommendations on locations and emissions standards. GCEP is in the process of formulating by-laws and regulations for environmental impact assessment and the creation and monitoring of "wild or aquatic reserves and national parks."

The Ministry of Agriculture (MOA) is responsible for protection of national forests, afforestation projects, and administration of rangelands. The Ministry of Agriculture performs several functions that influence wildlife conservation. MOA oversees fisheries and hunting and enforces regulations regarding both activities. MOA is also responsible for operation of eighteen grazing reserves.

The Royal Society for the Conservation of Nature (RSCN) is a private, voluntary society that has delegated authority from the MOA to enforce hunting regulations. The RSCN plays a major role in wildlife conservation by supervising seven wildlife reserves in Jordan. In addition, RSCN provides crucial training in wildlife management and conservation.

The Aqaba Region Authority (ARA), a unique regional governing body, was established by the Government in 1984. The Authority is generally responsible for social and economic development in the region and has environmental protection responsibilities. The ARA has prepared a comprehensive plan which covers land use zoning, designation of marine reserves and environmental monitoring. The Authority oversees all major construction activities in the region and requires assessment of recreational, tourist, scientific, and environmental impacts.

Relevant Programs

The last two decades have seen an increase in environmental awareness of the general public and the government in Jordan, which are now actively implementing protection programs. This section briefly describes natural resource programs addressing land use, environmental assessment, coastal zone protection, rangeland protection, wildlife protection, and mining.

Land Use

Several organizations contribute to land use planning at the national level in Jordan, though there is no comprehensive land use planning program. Under Agriculture Law No. 20 of 1973, the MOA has some authority over land use. Although the statute does not convey comprehensive authority to allocate the land for priority uses, land use authorities address: forestry protection, soil conservation, and rangeland administration. At the regional level, the ARA was granted land use planning authority for Aqaba by the Government. The Authority prepared a coastal plan outlining appropriate land uses in the coastal zone.

Environmental Assessment

GCEP is responsible for ensuring environmental impacts are considered during the licensing process. The Corporation, however, is only now beginning to determine standards and

guidelines for such assessments and a by-law on environmental assessment is to be prepared during 1996. At the onset, however, GCEP has limited resources with which to develop regulations, enforce, and monitor environmental conditions.

Coastal Zone Protection

Jordan's 27-kilometer coast is of tremendous strategic importance. Development of the port of Aqaba is critical to the continued economic growth of the Kingdom. Moreover, protection of the area's natural resources is critical to the continued growth of the tourism industry. The ARA was established to manage social and economic development along the coast. The ARA is the primary organization responsible for coastal zone management. The ARA approves and monitors all major construction activities along the coast. The ARA, in conjunction with the Royal Scientific Society, has initiated an environmental monitoring system project in the Aqaba Region to determine the impact of marine discharges. National laws and regulations, particularly the Water Authority Law No. 18 and Section 202 of wastewater discharge standards are applicable in the coastal zone. Shipping Law No. 51 of 1961 and Aqaba Port Services Fee Law No. 49 of 1976 specifically address coastal and marine pollution from shipping activities. Agriculture Law No. 10 of 1973 has some provisions restricting means and allocation of fishing.

Rangeland Protection

The Agricultural Law of 1973 states that all rangelands are owned by the government, but demonstration of attempts to cultivate land (even if unsuccessful or unsustainable) will establish rights to land tenure. In the Badia, there is now privately claimed land being increasingly converted to barley production. Most of the borders of the Badia have already deteriorated into marginal steppes. The remaining rangelands are open to use by all livestock owners, resulting in increased competition for the resource. The competition implies conversion of the rangeland resource to unsustainable forms of agriculture, associated with the introduction of producer subsidies for cereals and vegetables and the existence of ambiguous land tenure systems. The "Badia Research and Development Program" sponsored by the Higher Council for Science and Technology is attempting to conserve the natural resource base and promote sustainable development and foster wildlife protection in the eastern badia regions of Jordan.

Wildlife Protection

Several organizations are responsible for wildlife protection under two laws and a number of by-laws. Agriculture Law no. 30 for 1973 calls for the protection of wildlife in articles 120, 125, 144-146, 148-155. The by-law for the protection of birds and wildlife No. 113 for 1973 also calls for similar protection in articles 2-7. The by-law on shipping No. 51 for 1961 provides for the protection of fisheries and reefs through articles 18, 21, 180-186. The Law of Environmental Protection No. 12 for 1995 stipulates that nature reserves and parks are to be protected and that monitoring conditions be made available to ensure sustainable use. The relevant articles of the law include articles 5 (h), 16, 21, 23. A summary of the pertinent articles from these laws and by-laws is provided in Appendix A.

Mining

Within the Ministry of Energy and Mineral Resources' Natural Resources Authority, the mining Directorate is fully responsible of controlling the discovery, leasing, assaying of mineral, and licensing and operating of mines. Mining is presently governed directly by the Organization of Natural Resources Affairs Law No. 12 of 1968; Mining Code No. 131 of 1966; and Quarries Regulation No. 8, issued in accordance with Law No. 12. These law enables the Natural Resources Authority to control the prospecting of deposits through issuance of prospecting licenses. Initial licensing of mines and quarries is the primary opportunity for addressing environmental impacts as environmental protection is not specifically addressed under existing laws. A licensing committee reviews all mining an quarry applications at which time the antiquities protection provision and environmental requirements are addressed. Members of the licensing committee are drawn from the Ministries of Interior, Water Irrigation, and the MOA.

KEY CONCERNS

Most of Jordan's more severe environmental problems arise from the stress on the natural resource base continually being imposed to accommodate the economic and health needs of a growing population. Natural conditions impose limits on Jordan's population and growth. Land area is limited, imposing restrictions on the development of commercial, residential, and agricultural areas. In addition, availability of water for human consumption, industry and agriculture is of primary concern. As tourism booms, the transient population needs to make use of the same water resources that serve residents. Moreover, Jordan is economically dependent on the quality and protection of its environment. Most of Jordan's economic activities take place on 10 percent of its lands and competition between different user groups for these lands is therefore intense. Any degradation or permanent loss of land resources, in particular of the non-grazing lands, endangers current and potential land use, makes these resources more scarce, and thus has direct economic consequences. To continue economic growth, Jordan must ensure the protection of its natural vegetation, wildlife, coastline, and forests that contribute significantly to preserve natural habitats and attract tourism.

The absence of a comprehensive land-use law is at the root of the problem of destruction of the natural resources of Jordan. The lack of a land use and zoning policy for Jordan has lead to (i) land degradation; (ii) the loss of many surface water bodies resulting in enormous decline in the number and variety of water birds visiting Jordan, such as duck, herons, flamingo, and storks; and (iii) fragmentation of wildlife habitat due to uncontrolled urban development. The key concerns are summarized below for land resources, water, forests, grazing, coastal resources, and wildlife and habitat resources.

Land Resources

- Soil erosion and flash floods.
- Range land deterioration due to overgrazing and conversion.

- Urban encroachment.
- Pollution from solid and liquid waste.
- Mining spoils.
- Absence of comprehensive land use planning laws.

Water Resources

- Unsustainable mining of groundwater.
- Water losses.
- Lack of non-conventional water resource use.
- Water pollution.

Forest Resources

- Fires (destroying almost 30,000 trees each year).
- Illegal tree-cutting (leading to the destruction of 10,000 trees each year).
- Legitimate cutting (leading to the destruction of 20,000 trees each year).
- Grazing in forest areas (leading to destruction of around 5,000 small trees each year).
- Trespassing on forest lands (leading to the destruction of 5,000 trees each year).
- Pollution.

Grazing Resources

- Lack of a clear agricultural policy.
- Weakness of the Law of Agriculture regarding grazing lands.
- Lack of information, education, communication.
- Continued over-grazing.

Coastal Resources

- Unchecked urban growth.
- Tourist development.
- Pollution threats to coral reefs, sea grasses, turtles, dolphins and sea cows.
- Fishing threats.
- Shipping threats.

Wildlife and Habitat Resources

- Urbanization.
- Drying of wetlands.
- Over-grazing.
- Forest fires.
- Plowing of marginal land.
- Hunting.
- Pollution.

In confronting these and other key concerns, the available laws and by-laws illustrate clear shortcomings. For example, the Jordan Agriculture Law discusses in detail the issue of wild birds and animal protection, bird endowment, and hunting practices, and there are many articles in the law that regulate grazing. Despite all that, the articles regarding the protection of wild animals and birds do not protect the natural medium or habitat, like bushes and trees, that must exist to protect these birds and animals. In the process of regulating grazing the legislation did not consider that necessary balance. The purposes of the articles that regulate hunting are to preserve by reducing the number allowed to be hunted. Moreover, articles that regulate grazing authorized the minister to determine the areas, periods and duration of grazing without any correlation between hunting and grazing, and without consideration to birds and animals mating season or their needs for specific vegetation and foods.

The main purpose of the Ship Act No. 51 of 1961, is to protect the harbor from chemical materials and other wastes. Articles in the Agriculture Law insufficiently deal with some related issues. Article 118 of the Agriculture Law prohibits only commercial fishing and protects the corals from commercial use. The law does not penalize non-commercial fishing, nor does it define commercial and non-commercial use. The issue of the protection of marine life requires more attention and from a more serious perspective. The law does not protect against dumping sewage and wastewater in regional waters nor does it prohibit ships from dumping waste, chemical and radioactive materials in the waters. Instead, the law is limited to protecting the harbour from chemical wastes (Article 215 of the Ship Act). The ships should also be required to sail a specific course to protect the corals.

At present, the environmental protection law does not go far enough in specifying the kind of by-laws to emanate from the law. The only given, however, is that a wildlife or aquatic reserve or national park regulation will be developed this year. Such a regulation will explore all the issues relevant to protected areas and define some mechanism for zoning around a park. The effective preservation of a site is often hampered by what is done next to it, as much as by what is done to it directly. Property and zoning laws are non-existent, but are needed to protect the intrusion of developments incompatible with natural sites and to limit growth at the expense of these sites.

THE CURRENT SITUATION

Having described briefly some of the national limits that Jordan faces, it is now useful to provide (i) a report on the current status of protected areas; and (ii) a status portfolio on the natural resource base in Jordan. Tables 1 and 2 provide summary information on the current situation for nature reserves, protected rangeland, and the Red Sea Marine Park. The Tables allow for simple comparison among the reserves in terms of area, history, and natural resources. The text below provides a description of the problem issues at each protected area (reserve, marine park, and MOA protected rangeland), the issues arising out of park management, and the lessons learnt from previous experience, in preparation for developing key policy issues.

Table 1. Nature Reserves in Jordan

Wildlife Reserve	History	Area sq km	Topography/Geology	Flora & Fauna	Water	Special Features
Shaumari Reserve	Jordan's first wild reserve established in 1975	22	120 km south west of Amman. Surrounded by a fortified fence. 60% of total area consists of shallow valleys, the remaining areas are plains covered by basalt stones. Altitudes range from 510-680 m above sea level.	There are 134 species of birds and 11 species of mammals most notably the Arabian Oryx, Gazelle & Onager. There are more than 130 species of plants.	Average annual rainfall is low, between 50-100 mm.	Strict nature conservation reserve
Azraq Wetland Reserve	Established and designated as Ramsar site in 1977	12	12 km north east of Shoumari and east of Amman. It is part of the Azraq wetland oasis and is covered by ponds, swamps and aquatic plants.	There are 350 species of birds. Wolves, hyena, several species of insect and reptiles, including five poisonous snakes, live in the area. It is semi-covered by aquatic plants.	Over pumping of water for agricultural and urban uses is causing deterioration and drought conditions.	Multipurpose use area; there are salt mines in the area and some agricultural activity in surrounding areas.
Zoubia Wildlife Reserve	Established in 1988 to re-introduce and breed rare types of deer which vanished from Jordan 100 years ago.	12	Located in the Ajloun mountains in northern Jordan at an elevation of almost 900m above sea level. Fenced area covered by a thick forest.	Home to various species of birds & plants like the iris. Wildlife and endangered animals such as roe deer, fallow deer, wild pig and hyena are being reintroduced and bred.		Strict nature reserve with thick forests of oak, Arbutus, Juniper, Carob, Crataegus, wild pear & Rhamnus.

Wildlife Reserve	History	Area sq km	Topography/Geology	Flora & Fauna	Water	Special Features
Wadi Moujeb Reserve	Established in 1987 to protect wildlife animals and plant groups and re-introduce extinct species.	212	Located on the eastern cost of the Dead Sea. Its altitude ranges from 400 m below sea level to 800 m above sea level.	Includes wild orchids along with a wide range plants like acacia and phenix. Endangered species of fauna such as the ibex and hyrax and a variety of fish and birds like the partridge inhabit the area.		Multipurpose use area. The reserve re-introduces extinct species, highlights the beauty of the area, and organizes tourism. The reserve also include mineral springs within its boundaries
Wadi Rum Reserve	Established in 1989 to protect wildlife and re-introduce the oryx and gazelle.	510	Includes the Rum mountains in the south of Jordan. Altitude ranges from 800-1,750 m above sea level.	Indigenous plants and wildlife groups such as the ibex, hedgehog, indian crested porcupine and wild rabbit and species of birds like the golden and sinai eagle live in the area.		Multipurpose use area. The reserve is internationally famous for its beautiful scenery and desert plants.
Dana Reserve	Established in 1989	228	Near Tafila it includes some of the mountains of southern Jordan.	Wildlife animals like the ibex, gazelle, wolf and badger, porcupine along with various birds like crested lark live in the area. Plants such as Juniper, cyprus, oak and pine are common to the area.	Headwaters of the Wadi Hamra is aligned to the east with the Salawan fault. There are also springs in and around the reserve.	Multipurpose use area; tourism, local involvement, research, small scale sustainable development activities. The copper mining center of Feinan, believed to be worked since the 3rd millennium BC, is westwards at the far end of Wadi Dana.
Aqaba Marine Reserve			Located in the gulf of Aqaba	Includes marine animals and species like coral reef, shrimp, and various types of fish		Multipurpose use area:tourism, research, conservation.

102

Table 2. MOA Grazing Reserves

<i>Reserve</i>	<i>Year Established</i>	<i>Area in Dunums</i>	<i>Location</i>	<i>Rainfall (mm)</i>
<i>Twaneh</i>	<i>1981</i>	<i>20,000</i>	<i>Tafila</i>	<i>150</i>
<i>Ae'sheyeh</i>	<i>1983</i>	<i>20,000</i>	<i>Ma'an</i>	<i>100-120</i>
<i>Eira</i>	<i>1986</i>	<i>20,000</i>	<i>Balqa</i>	<i>200</i>
<i>Adasiya</i>	<i>1983</i>	<i>20,000</i>	<i>Amman</i>	<i>200</i>
<i>Ma'in</i>	<i>1983</i>	<i>20,000</i>	<i>Madaba</i>	<i>200</i>
<i>Wadi Butum</i>	<i>1986</i>	<i>15,000</i>	<i>Zarqa</i>	<i>75</i>
<i>Ras Naqab</i>	<i>1986</i>	<i>12,000</i>	<i>Ma'an</i>	<i>120</i>
<i>Lajoun</i>	<i>1981</i>	<i>11,000</i>	<i>Karak</i>	<i>150</i>
<i>Sabha</i>	<i>1979</i>	<i>10,539</i>	<i>Mafraq</i>	<i>150</i>
<i>Fujeij</i>	<i>1958</i>	<i>10,000</i>	<i>Ma'an</i>	<i>200</i>
<i>Mujib</i>	<i>1981</i>	<i>9,763</i>	<i>Karak</i>	<i>150</i>
<i>Nekhil</i>	<i>1987</i>	<i>7,000</i>	<i>Karak</i>	<i>180-200</i>
<i>Khanasiri</i>	<i>1946</i>	<i>4,545</i>	<i>Mafraq</i>	<i>220</i>
<i>Rajib</i>	<i>1983</i>	<i>4,500</i>	<i>Ajloun</i>	<i>200</i>
<i>Surra</i>	<i>1946</i>	<i>3,961</i>	<i>Mafraq</i>	<i>180</i>
<i>Dab'a</i>	<i>1968</i>	<i>3,000</i>	<i>Amman</i>	<i>120</i>
<i>Mansheieh</i>	<i>1968</i>	<i>3,000</i>	<i>Ma'an</i>	<i>150</i>

Nature Reserves

The nature and wildlife reserves of the RSCN include 13 protected areas, seven of which are currently in operation.

Shaumari Reserve

This reserve is the site of a functional endangered species breeding unit and is the first reserve in which large animals have been re-established in the wild. Shaumari is under grazing pressures which should be relieved.

Azraq Wetland Reserve

At Azraq, the pressures are severe and varied, including hunting, grazing and unsustainable water use, and pollution. The primary development dimension of the currently underway Azraq project is to establish a sustainable basis for the utilization of the water resources of the Azraq Basin for water supply and agriculture, while at the same time conserving the outstanding biodiversity values of the natural wetland ecosystems. Because of the high rates of water extraction, natural spring flow has now ceased, and unless some remedial action is taken soon, much of the biodiversity for which the oasis is particularly important (freshwater plant and animal communities) will be lost, perhaps irrevocably. Similarly, if the present high levels of offtake continue, there is a high probability that within the near future the freshwater aquifer will become contaminated with saline water from deeper aquifers. This would jeopardize the utility of Azraq water for urban use and agriculture alike.

Azraq Desert Grazing Reserve

Established jointly by the RSCN and the Ministry of Agriculture, this reserve provides a grazing area for the Arabian oryx, which lives in the Shaumari reserve and which is increasing in number. The Ministry of Agriculture fenced the reserve, and is now working to increase the grazing cover, while the RSCN will work on breeding species and introducing the oryx, deer, ostrich and onager. Artemisia, Achillea, Artriples, and Poa grow in this reserve. To date 134 species of birds have been recorded there; most of these are migratory. Animals now found in the reserve are the deer, striped hyena, wolf, fox and wild rabbit, and three species of snake.

Zoubia Reserve

Zoubia reserve is under pressures which are drastically altering natural ecosystems: domestic livestock grazes throughout the woodland and there is considerable encroachment by cultivation. This pressure is exacerbated by the relatively small size of the area which is closely surrounded by villages. The entire range is in need of early protection.

Wadi El-Moujeb Reserve

In this reserve, the most important pressure is concentrated upon one small but ecologically important location - Zara. Burning, grazing and cultivation have taken place and are taking a heavy toll, and there are plans to further despoil the site with touristic developments.

Wadi Rum Reserve

At Wadi Rum Reserve, the Society is working to conserve the indigenous wildlife, including a large herd of Arabian Oryx that has been moved there, a variety of plant species, some of which are rare that form a luscious green ground cover, as well as archaeological tracks and cave paintings over 8000 years old. A system of roads is being set-up to accommodate the large number of tourists that visit the area throughout the year.

Dana Reserve

The greatest threat to the biological diversity of the Dana Reserve is unplanned, ecologically inappropriate, and unsustainable human use of the reserve's natural resources. Consequently, in order to achieve the conservation of the biodiversity of all ecosystems in Dana, it has been necessary to address the social and economic needs and aspirations of the communities living in the vicinity of the reserve, and to support sustainable development initiatives which do not conflict with the objectives of conservation. Wherever possible, activities which have the potential to generate foreign currency earnings through tourism are being encouraged. The socioeconomic issues which must be addressed at Dana (notably the change of emphasis from dependency on unsustainable livestock grazing practices to other forms of income) are problems which restrain economic development and cause environmental degradation in many parts of Jordan. Consequently, experience gained by the Dana project will have national significance. Dana Development Center contains research laboratories as well as workshops for the production of traditional jewelry and precious stones polishing. It also contains sleeping quarters for painters and artists who come to the reserve to paint.

Red Sea Marine Park

The Government of Jordan has been considering the establishment of Marine Park off the shores of Aqaba since the first proposal was made in 1977. Since then, nearly 30% of Aqaba beaches and section of coral reefs have been modified to accommodate port and urban needs. The Red Sea Marine Peace Park, is one of the "building blocks of peace" that was proposed during the peace agreement negotiations. Apart from being a symbol of peace, the park will permit the sharing of information, opportunities and responsibilities, as well as providing sustainable development for the park area and meeting national and international goals.

Ministry of Agriculture Protected Areas

The MOA has allocated three types of protected areas in Jordan: Badia Rangelands, Rangelands with 100-200 mm annual rainfall, and natural grazing reserves. The first reserves were established in Jordan as far back as the forties and were designed to afford protection to plant cover. Later, attention was given to the developing nature reserves for the purpose of studying plant species, collecting seeds and evaluating grazing capability and soil preservation. The Ministry of Agriculture has established 18 grazing reserves with a total area of almost 100,000 dunums. These reserves aimed at developing grazing resources and controlling grazing inside them so that the plant cover does not deteriorate. The NES has recommended that all grazing grounds in Jordan become grazing reserves and be opened to grazing according to the

land's capacity in the various grazing seasons. This requires defining grazing lands and the parties responsible for protecting and using them.

Natural Resource Base

This section presents a portfolio of the resource base in Jordan with the objective of identifying the important interrelationships between the resource base and ongoing policies and action plans.

Water - The current demand for municipal, industrial and agricultural water in Jordan exceeds sustainable water supply, and ground water resources are being tapped beyond their renewable yield. The long-term average annual base flow is 328 MCM, the additional flood flow is about 334 MCM. Of the total 662 MCM potentially available surface water, an estimated 555 MCM can be economically developed. The Yarmouk Basin accounts for 40% of the total surface water in Jordan. Other basins include Zarqa, Jordan River side wadis, Mujib, Dead Sea, Hasa, and Wadi Araba. In 1993, Jordan utilized about 35 MCM of treated wastewater, mostly from the Es-Samra Treatment Plant. Jordan's groundwater is distributed among 12 basins. The safe yield of renewable groundwater resources is estimated at 277 MCM per year. The main nonrenewable groundwater resource presently exploited is the Disi sandstone fossil aquifer in south Jordan, where around 70 MCM are extracted mainly for agriculture. It is estimated that the safe yield of this aquifer is not less than 125 MCM per year over 100 years. Other nonrenewable groundwater resources are found in the Jafer Basin in Shidiya, with an annual safe yield of 18 MCM.

The total consumption of surface water was 449 MCM in 1993, and the total groundwater consumption was 534 MCM, most of which was met from renewable groundwater resources, a good part of it through overextraction. Serious water shortages are met by overextraction of groundwater from renewable aquifers at the rate of 188 MCM per year, which corresponds to groundwater withdrawal at 160 percent of the safe yield of the aquifers. The resulting depletion of these aquifers has led to decrease in yields and salinization of aquifers, as well as the desiccation of wetlands such as the Azraq oasis. This water balance situation is not expected to improve over time.

Forests - Jordan's forest vegetation is quite limited with about 145,700 hectares predominately found in the mountainous region of the north and mostly government owned. The number of forest species and vegetative groups in Jordan are among the world's richest vegetative groups. Barely comprising 1.6 percent of total area (88.9 million ha), Jordan's forest vegetation rises from 100 mm above sea level in the Al-Alouk area, to over 1,000 m near Ajloun and Balqa and rises again to exceed 1,200 - 1,500, in the Tafila and Shoubak areas.

Although some positive changes have occurred in forest policy since 1960, the pattern of land use in Jordan remains one of a steady and continuous degradation, particularly of the forest

cover. The principal agents of this degradation have been the repeated cultivation of every patch of soil and the uncontrolled cutting and uprooting of all woody growth, trees and shrubs for fuel and other domestic purposes. In addition, the forest areas were subjected to excessive and unregulated grazing of every accessible patch of land by goats, sheep and camels, with little regard for the carrying capacity, or resource maintenance and improvement. This misuse is still occurring, perhaps even at an accelerated rate and the soil quality is progressively deteriorating.

While it is perhaps difficult to quantify socio-economic benefits, the forests of Jordan do contribute directly and tangibly to both environmental stability and the socio-economic conditions of the country by contributing to the maintenance of watershed stability; by protection of soils, by climate amelioration, by provision of habitat for the conservation and protection of important genetic resources of national flora and fauna.

Rangeland - Land suitable for agriculture is in short supply and land holdings are generally small and fragmented. Rangeland is more extensive but still constitutes only a modest proportion of the land area. The lack of grazing areas will restrain livestock expansion. However, there is potential for both greater crop and livestock production through more intensive land management.

Minerals - The mining sector contributed approximately 3-4% of GDP in 1993. The exploitation of minerals in Jordan has a long history, from the use of flints in the Stone Age to the early working of copper in Wadi Araba in the Bronze Age. In more recent times, however, the development of some mines and quarries has led to certain problems, because the effects of many activities on the natural environment have been neglected in the course of mineral extraction. In 1989, the production of minerals in Jordan was valued at approximately \$650 million, representing primarily phosphate, potash, cement raw material, limestone, glass sand, clay, gypsum and limestone. Initial production at the potash plant at the southeast end of the Dead Sea was about 1.2 million in 1989. Phosphate deposits are exposed or located near the surface along a north-south striking belt, about 200 km long and 10-25 km wide. The belt extends from Russeifa in the north to Hasa in the south. Two other major occurrences are the Shadiya deposit (50 km southeast of Ma'an) and one in Irbid Governorate in north Jordan. Other minerals or aggregates of minerals mined in Jordan include Gypsum, Clay, Limestone and Glass Sand, Feldspars, Basalt, Rock Salt, Tuff, Zeolites, Dolomite Dimension Stones, Bentonite, Sulphur, Tripoli, Barite, Anhydrite, Apatite, Agate, Amber, and Pumice.

Agriculture - Agricultural activity contributes approximately 8% of GDP and employs a corresponding proportion of the Jordanian labor force. The principal agricultural land use is grazing since less than 5% of Jordan's area receives sufficient rainfall to support cultivated crops. The principal crops in the rainfed subsector are cereals (mostly wheat) and tree crops (mostly olives and grapes). In the irrigated subsector, comprising 0.5% of all land area, the value of crop production (fruits and vegetables) reaches 50% of all agricultural produce.

Wildlife and Habitat Resources - Jordan has a diversity of habitats ranging from deserts to wetlands and including coastal and marine ecosystems. The number of plant species in Jordan is more than 2,500 and over 1,500 species of animals are known to occur. Fish diversity in the Gulf of Aqaba exceeds 1,000 species. Of the 1,500 animal species in Jordan, it is estimated that there are more than 70 species and sub-species of mammals in Jordan comprising 24 genera and 7 orders. In addition, there are an estimated 350 species of birds, which are predominantly migratory. There is an estimated 73 species of reptiles. There are 4 species of amphibia pertaining to 4 groups and 20 freshwater species. To protect such ecosystems, Jordan has, since 1975, established seven nature reserves, with a total area of 129,000 hectares under the management of RSCN. Seven more reserves are planned. The establishment of grazing reserves also serves to protect ecosystems from overgrazing.

POLICY ISSUES RELATED TO NATURAL RESOURCES AND PROTECTED AREAS

Having discussed the current situation where major issues presented themselves, a systematic analysis to dissect the complexities of NRPA issues in Jordan follows. The analysis is set up in order to identify more issues to be addressed at the local and national levels. The problem is approached from two points. First, nature reserve issues are classified under five general themes:

- Management issues
- Socioeconomic issues
- Environmental issues
- Institutional issues
- Information and use patterns issues.

This grouping provides useful insights into how resources are related to development of protected areas. Second, the different strengths, weaknesses, opportunities, and threats (SWOT) associated with each issue are documented for the current situation. This proves to be particularly useful in identifying the gaps in current practices helping decision makers focus on developing a variety of policies that cover several issues at once. Below is a list of thirty nine issues arising from the preceding analysis, grouped under the five themes. A screening process was applied to reduce the number of issues to a smaller number of key issues. Selection of the key issues is crucial if policy formulation is to remain a manageable activity. The issues were ranked with respect to six qualitative selection criteria: *urgency, irreversibility of impacts, effects on economic productivity, public perception, scale and magnitude, and potential loss of amenity*. After screening, twenty three issues remained for documentation and analysis. Table 3 below is a matrix of the selected issues documenting the current situation of natural resources and protected areas in Jordan.

<u>POTENTIAL ISSUES</u>	<u>SELECTED ISSUES FOR FURTHER ANALYSIS</u>
MANAGEMENT ISSUES	
Lack of management plans (resource protection, visitor services and research facilities)	X
Property ownership / management	X
Definition, scale, and extent of protected area	X
Lack of regulations on vehicle use/trespassing in parks	
SOCIOECONOMIC ISSUES	
Loss of access to productive land	X
Loss of employment / employment opportunities	
Potential for tourist use of protected area	X
Public awareness of grazing patterns	
Absence of economic incentives to conserve habitats	X
Lack of information, education, communication	
Urban encroachment	
Encroachment of agriculture	X
Financial constraints and priorities	X
ENVIRONMENTAL ISSUES	
Protection of wildlife feeding and breeding grounds	X
Loss of habitat	
Rangeland deterioration	
Maintaining ecological balance of critical ecosystems	X
Protecting representative samples of ecosystems	
Pollution (air, water, solid waste, mining spoils)	X
Soil Erosion	
Overgrazing/areas, periods, and durations	X
Deforestation (fires, legal/illegal cutting, grazing, trespassing)	X
Lack of updated surveys of flora/fauna	
Lack of linkages between protected ecosystems	
INSTITUTIONAL ISSUES	
Lack of integrated planning	X
Lack of communication and coordination among agencies	
Existence of ambiguous land tenure systems	X
RSCN capacity building	X
Weakness of laws / lack of enforcement	X
Absence of nationally agreed upon land use plans / buffer zones	X
Decentralization of operations management to the local level	
Lack of mechanism to add new parks to the system	X
INFORMATION AND USE PATTERNS ISSUES	
Lack of comprehensive, updated information that is distributed	X
Inefficient water use	
Inadequate use of biological resources	
Lack of initiatives not conflicting with conservation objectives	X
Placing limits on use of habitats	X
Allocation of areas for public education and appreciation of wildlife	
Lack of comprehensive park rules for nature reserves	X

Table 3. Priority Issues for Natural Resources and Protected Areas

ISSUES	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Management Issues				
Lack of management plans (resource protection, visitor services and facilities)	Some management plans being followed by RSCN in some reserves but needs government support	Ad hoc development due to growth of tourism. No protection and no opportunities for creating an eco-tourism attraction	Planned activities include the establishment of educational field centers at reserves, job opportunities	Could have irreversible biodiversity damage, loss of habitats in some reserves
Property ownership/management	RSCN currently manages reserves successfully	Public ownership of extensive areas unmatched by capacity of public agencies to manage these lands	Private sector management of small areas on an experimental basis	Without property /management rights, there are no incentives to conserve
Definition, scale and extent of protected area	RSCN has some criteria for determining sizes but this is outdated	No rules or guidelines available to define protected areas and their size		Cannot protect the variety habitats of Jordan
Socioeconomic Issues				
Loss of access to productive land		Local farmers must substitute current practices	There must be avenues for job creation, and future opportunities	This is a long term negative impact of protection
Potential for tourist use of protected area	With management plans in place, trails and services could be provided enhancing local and national income	If tourism is not controlled, destruction of habitats may occur	Effective environment for conservation required by tourism can only be possible with the full support of the general public. Consequently need awareness programs	This is long term positive impact of protection; multiple use areas with sustainable development activities
Absence of economic incentives to conserve		Conservation is regarded to have one single objective: protect sites and wildlife without economic benefits to anyone	Short term and long term incentives, like jobs from sustainable practices and other direct benefits could be worked out with local populations	Without stakeholder or local population involvement in the short and long terms, conservation efforts will fail

200

ISSUES	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Encroachment of agriculture		Marginal agricultural land is being plowed, causing loss of soil, vegetative cover and rangeland deterioration	Marginal land can be upgraded by outlawing unsustainable uses within the framework of protected areas	Threatens vegetative cover & wildlife feeding & breeding grounds
Financial constraints and priorities	Donors and international lending agencies are recognizing the importance of conservation in less developed countries	Limited budgets and low recurring revenues force prioritization of projects which, if improperly performed, could negatively affect development of nature reserves	Entrance fees could be imposed for all visitors thus generating revenue to maintain and develop parks	Nature conservation may not be on the high end of the priority agenda, at which time no conservation can take place
Environmental Issues				
Protection of wildlife feeding and breeding grounds	Ensures continuation and diversity of species		Control uses in reserves at certain times and allow for scientific research to develop and continue	Extinction of fragile species
Maintaining ecological balance of critical ecosystems	General institutional understanding of maintaining critical ecosystems is present	Some critically important and fragile ecosystems in Jordan are being damaged (e.g., Azraq Wetlands)	Sustainable development, economic incentives, and strict protection in the short term	Changing water regimes, upsetting hydrological balance to meet demands
Overgrazing/areas, periods, and durations	Some restriction are currently being imposed but poorly managed	Agriculture law allows Minister to determine areas, periods & durations of grazing without attention to breeding/feeding/protection of wildlife	Opportunities exist for closer coordination among institutions	Destroys vegetative cover in and around reserves, interferes with mating and feeding
Deforestation (fires, legal/illegal cutting, grazing, trespassing)		Weak enforcement of existing laws	Can save large areas of land by more careful monitoring and enforcement of regulations and laws	Loss of habitats, vegetative cover

ISSUES	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Pollution (air, water, solid waste, mining spoils)	New environment law will cause regulations to be more enforced	In the short term, not too much to be expected from new laws	Pollution prevention through implementation of new laws	Irreversible damage to habitats
Institutional Issues				
Lack of integrated planning	Organizations exist, integrated comprehensive planning methodologies previously applied in Jordan by various ministries	Weak coordination between government and stakeholders, and among government agencies	By-laws from new environment law could set the precedent for integrated planning requirements	Without integrated planning, the wide variety of factors cannot be adequately taken into account
Existence of ambiguous land tenure systems		Demonstration of attempts to cultivate land will establish land tenure in Jordan	With more stringent laws at the national level, land tenure systems can be reformed	Increasingly, land will be cultivated and grazing areas lost
Absence of nationally agreed upon land use plans / buffer zones		All concerns and threats to biodiversity and habitat protection are aggravated by absence of land use and zoning plans	Nationally agreed upon land use plans will automatically lead to sustainable uses of limited resource base	Buffer zones are needed to control and absorb impacts in proximity of reserves
Weakness of laws/lack of enforcement (<i>env., agriculture, and wildlife laws</i>)	The environmental problems of non-enforcement are so clear now that it is only a matter of time before strict enforcement is practised		With new mandate to GCEP monitoring and enforcement will become more strict	Without monitoring and enforcement, large areas will be irreversibly damaged
RSCN capacity building	RSCN has been successful in nature reserve management but needs more technical advice	RSCN needs additional financial resources and coordination efforts with GCEP	RSCN can greatly expand its conservation role by careful planning and management	There needs to be close monitoring of RSCN to ensure that opportunities for multiple use areas are not lost

202

ISSUES	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Lack of mechanism to add new parks to the system	RSCN has set certain criteria over the years for establishment of reserves	The RSCN document is outdated and needs updating	An opportunity exists to incorporate such mechanisms in new by-law for national parks to be developed by GCEP	The current management of parks and the future outlook for biodiversity protection will be in doubt
Information and Use Patterns Issues				
Lack of initiatives not conflicting with conservation objectives		Conservation is regarded to have one single objective: protect sites and wildlife without economic benefits to anyone	Initiatives such as local sustainable, education, and job opportunities do not conflict with conservation objectives and are necessary for long term sustainability of reserves	Without introducing initiatives other than strict conservation, process of protection may not continue
Placing limits on use of habitats	This will ensure that conservation and protection are continued. Detrimental and unsustainable uses will be nullified	Weak laws and enforcement mechanisms	Short term limits vs longer term limits on use of certain habitats	Without extensive scientific research, placing limits on use is dangerous
Lack of comprehensive, updated information that is widely distributed		Material is not readily available to potential "users" of multiple purpose use areas	A national set of readily available data, categorizations, levels of service, protection standards is key	No data, no research, no conservation
Lack of comprehensive park rules for nature reserves	In some reserves, notably Dana multipurpose use area, park rules are strictly enforced		Clear regulations need to be developed to ensure that delicate ecosystems are not damaged in multiple use areas	Losses in tourism revenue, habitat destruction, and pollution

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Appendix A

Current Legislation Regarding Wildlife Protection

1. Article (120) paragraph (B) of the Agriculture Law No. 20 of 1973, gives the Minister of Agriculture the authority to organise grazing periods and its renewals for each geographical area, while paragraph (K) of the same article gives the Minister the authority to issue decisions for the protection of the environment and its natural resources in rangelands including its natural flora.
2. Article (125) of the Agriculture Law stipulate that rangelands which have an average annual rainfall of less than 100 mm shall not be assigned, and that the land shall not be leased out for a period of more than one year for the purpose of cultivation and grazing.
3. Article (144) of the Law prohibits the hunting of wild birds and animals without the proper permit from the Ministry of Agriculture.
4. Article (145) of the Law stipulates that beneficial birds for agriculture will not be hunted, killed or captured, moved, sold, or offered for sale dead or alive. Paragraph (B) outlaws the hunting, capturing, or poisoning of animals without the explicit authorisation from the ministry. Paragraph (C) empowers the Minister to decide the kinds of birds to which the above mentioned laws apply, and the conditions of special hunting permits for scientific purposes.
5. Article (146) of the law stipulates that the nests of wild birds shall not be vandalised, and their eggs and young shall not be captured or harmed.
6. Article (147) of the Law authorises the minister to set the areas where hunting is allowed and to determine the hunting season and the type of wild birds and animals allowed to be hunted.
7. Article (148) of the Law stipulates that the use of vehicles, spot lights, automatic weapons, or rifles in hunting wild animals, except when authorised by the minister, is prohibited.
8. Article (149) of the law does not permit non-resident aliens from hunting birds and wild animals in the kingdom without the authorisation of the minister.
9. Article (150) of the Law admonishes cruelty to animals.
10. Article (151) of the Law stipulates that importing, possessing, selling, or using glue and adhesive material used for birds capturing, is prohibited. Traps, decoys, and dozing drugs, used for the purpose of hunting is also prohibited

11. Article (152) of the Law authorises the minister to form a hunting committee to give opinion on the hunting season, the areas where hunting is allowed as well as the kind of birds and animals allowed to be hunted.
12. Article (153) of the law stipulates the penalties and fines to be applied against those who break the law as follows:
 - 15 JD for each Arabian Gazelle hunted.
 - 10 JD for each boar, Nubian Ibex, or mountain Gazelle hunted.
 - 3 JD for any other bird or animal hunted.
13. Article (154) of the Law stipulates that the penalty for using an automated vehicle is no less than 5 JD for each of the driver and the owner of the vehicle, in addition to the penalty stipulated in Article (153). If the violation is repeated within one year the penalty will be doubled and the hunting weapon or instrument used will be confiscated. The hunting weapon will also be confiscated in instances where hunting is without license or not in the areas or time periods allowed.
14. Article (155) of the Law stipulated that the employees of the Ministry of Agriculture, members of the Police and the Armed Forces, and other individuals selected by the minister, will be commissioned with arresting violators, delivering them to the nearest police station and completing the appropriate paperwork.
15. Article (2) of the protection of wild animals and birds and hunting practices Act No. 113 of 1973 sets the conditions for obtaining hunting licences.
16. Article (4) of the Wild Animals and Birds Endowment Act stipulates that hunting shall be in the areas and seasons set by the Minister of Agriculture and printed in the official newspaper.
17. Article (5) of the Birds Endowment Act prohibits hunting in all its forms in the desert areas east of the Hijaz railway, except for the Azraq area or any other area determined by the minister of Agriculture and printed in the official newspaper.
18. Article (6) of the Wild Animals and Birds Endowment Act stipulated that the hunting of Nubian Ibex and mountain Gazelle in the area west of the Hijaz railway, will be by a decree from the Minister of Agriculture with the recommendation of the committee and printed in the official newspaper.
19. Article (7) of the Wild Animals and Birds Endowment Act sets for the licensed hunter the type and maximum quota of birds, and the number of times a person is allowed to hunt.

2017

Legislative Articles Related to the Environment & Marine Life

1. Article (18) of the Ships Act No. 51 of 1961 outlaws the dumping of sand, stones, litter, harmful liquids, chemicals and other materials on the harbour, whether on land or in water. The improper disposal of harmful liquids, chemical materials, oil or grease as well as the negligence of proper preventive measures is prohibited. Paragraph (H) of the article prohibits fishing in the harbour.
2. Article (21) of the Ships Act stipulates that the ship officer or the merchandise owner will insure the collecting and cleaning of any chemical or other material to prevent its falling into the water.
3. Article (180) of the Agriculture Law No. 20 of 1973 defined fish as any marine animal including fish, sea sponge, solid shell animals, sea turtles, and mammal water animals. The term fishing is defined as fishing in regional waters or down loading on land even if it was not fished in regional waters.
4. Article (181) of the Agriculture Law stipulates that regulations issued in the Law in regards to fish is enforced on all who work in commercial fishing.
5. Article (182) of the Agriculture Law cautioned against fishing without obtaining the proper licence from the Minister of Agriculture.
6. Article (183) of the law cautioned against commercial or private fishing using explosives, harmful or poisonous material either for commercial purposes or otherwise. The law also cautions against damaging or removing coral in regional waters.
7. Article (184) of the Law stipulates that the minister of agriculture has the authority to set the designated fishing areas in regional and fresh water. He shall also prescribe fishing means and ways that may harm the preservation or growth of any school of fish. The minister also has the authority to determine the maximum quota to b fished of the same kind, as well as the size and shape of the fishing net.
8. Article (185) of the Law authorises the minister to grant financial rewards to an informer or an individual who helps in uncovering a violation. The value of the reward shall not exceed half the total amount of the fine set and shall be no less than 5 JD.
9. Article (186) of the Law stipulates that breaching the regulations stipulated in article (182) fishing without a licence, or article (183) fishing with explosives and harmful and poisonous materials and damaging the coral rocks, and article (184) not adhering to the Minster regulations regarding fishing areas, and the size and shape of the net subjects the violator to a fine no less than 10 JD and not more than 50 JD.

Relevant Articles from the Law of Environmental Protection No. 12 for 1995

1. Article 5 (h): To put the conditions and bases of establishing wild reserves and national parks and to monitor them and all of the relevant issues according to a regulation published by the rules of the law.
2. Article 16: The establishment contributes to, coordinates and cooperates with, the international, regional and local parties specialized in the environmental affairs to protect the environment from pollution including the sectors of water, air, soil, flora, fauna and marine environment in accordance with the stated manner in this law.
3. Article 21: The specifications and conditions which should be available in any wild or aquatic reserve or in a national park are determined by a regulation to conserve and environmentally protect them.
4. Article 23: No person is allowed to throw polluting or harmful substances into the marine environment in the regional waters or on the shore within the borders and distances determined by the minister according to the general manager recommendations.

ANNEX A4

RECREATION AREAS ISSUES PAPER

by

Ruba Kana'an

Priority Issues for Recreational Parks

Issues Related to Definition:

- | | | |
|----|---|---|
| 1. | Issue: No <u>criteria</u> of selection for designated park areas. | X |
| 2. | Issue: No <u>criteria</u> of selection for recreational park areas. | X |
| 3. | Issue: The lack of a national register for historic buildings. | X |
| 4. | Issue: There is no clear definition of urban landscapes. | |

Institutional Issues:

- | | | |
|----|--|---|
| 1. | Issue: No single <u>institution</u> has a mandate over recreational areas/places. | X |
| 2. | Issue: No institution has mandate over historic buildings. | X |
| 3. | Issue: Divisions of Domestic Tourism and Parks and Environment at MOTTA are not operational and/or do not have mandate. | X |
| 4. | Issue: Institutional overlaps. | X |
| 5. | Issue: Authority within the institutions.
Amman Vs. Municipalities.
Central government offices Vs. branch offices. | |
| 6. | Issue: Mandate of the NGOs. | |
| 7. | Issue: Private ownership. [[ownership/tradition /use]]. | |

Legal Issues:

- | | | |
|----|--|---|
| 1. | Issue: Conflicts in zoning and landuse regulations. | X |
| 2. | Issue: Overlaps in the legislation pertaining to recreation. | X |
| 3. | Issue: No legislation that covers historic buildings/sites. | |

Zoning and Designation Issues:

- | | | |
|----|--|---|
| 1. | Issue: There are no <u>zoning</u> regulations for the creation of recreation areas/parks. | X |
| 2. | Issue: No criteria for delineation for historic city centres. | |
| 3. | Issue: Sites with religious and cultural/religious significance are traditionally used as parks but are not designated as parks. | X |
| 4. | Issue: no provisions for viewscapes and buffer zones. | |

Management Issues:

- | | | |
|----|---|---|
| 1. | Issue: Recreation (in the form of play/relax and wellness) is not integrated in any multiple-use management plan. | X |
| 2. | Issue: No delineation for the mandate of <u>individual corporations</u> . | X |
| 3. | Issue: No delineation of mandate in water-based wellness areas.(private sector concessions) | |
| 4. | Issue: Abuse of traditional park areas by high-impact recreation. | X |
| 5. | Issue: "Managed mainly for.... but including recreation" scenarios. | |

General issues:

- | | | |
|----|--|--|
| 1. | Issue: Safety. | |
| 2. | Issue: Education and public awareness. | |
| 3. | Issue: Lack of knowledge/interest in cultural and natural resources
[[HRD/awareness]] | |

SWOT ANALYSIS FOR PRIORITY ISSUES

Issues Related To Definitions:

Issues: No criteria of selection for "designated" park areas.

S: No strengths known.

W: 1. Designation of park areas is ad hoc.

2. The category of "significance" is rigid and does not include the concept of "designated mainly for.... but including"

O: Define criteria of selection that includes: no use (protected), single-use, multiple-use, and "used mainly for...but including....".

T: If an area is designated as a certain type of park, i.e. natural or recreational, chances are that it is managed under the same assumption. This will eliminate possible provision for an integrated approach towards use and management.

Discussion: Several areas have been announced "Parks" in Jordan over the years. Those areas have usually been argued as "significant" by the government agency and/or NGOs that have mandate over that type of park. In most cases no criteria was defined as to why was the park/area considered "significant"; to whom it was significant -i.e. community related aspects; and, under what management plan would it fall, if any. Furthermore, proposed management plans for these parks, when available, cover one aspect of significance of the designated area. The 7 reserves currently under the mandate of the RSCN, for instance, were designated as nature reserves/parks. Some of these reserves, mainly Dana, Aqaba Marine Reserve, Wadi Rum, were considered significant for their natural and biodiversity base resource and managed mainly as so. Such designation criteria does not cover other aspects of significance of those parks like recreation and cultural resources. Criteria of selection should be widened to include a range of options to cover single- as well as multiple-resource bases.

Issue: No criteria of selection for recreational parks.

S: Community involvement is taken into consideration for national parks.

W: 1. No community involvement in the allocation of municipal and local parks.
2. Recreational parks and public-owned areas with natural resources or vacant plots of land used by people are often confused.

O: Define a criteria of selection for recreational parks that covers the themes of play/relax, wellness and buildings/sites of historic significance. The criterias should delineate recreational parks with national significance, historic city centres and neighbourhood parks with significant landmarks.

T: 1. Local communities can be alienated by the planner's choice of local recreational parks. 2. small or insignificant recreational parks could drain the limited amount of resources for park management.

Discussion: On a national level, recreational activities follow patterns of tradition rather than national policies. Acknowledged recreational parks gained this status by popular practice rather than landuse plans; and some were designated parks as a consequence. Examples from this category include Dibbin, Zay, the Amman National Park.... On a municipal or local level various regulations stipulate the inclusion of "green areas" for recreation as part of zoning or redevelopment plans. Those areas are usually chosen by planners and/or engineers "on paper" without site visits or community involvement. Most of the areas are small in size and comprise a limited amount of paths and vegetation. In most common cases this category should be considered as "neighbourhood parks" and left to be managed within their respective municipalities. However, in cases where a municipal or local park includes a significant cultural or natural resource such parks are recommended to be included in a multi-pupose management plan.

Issue: The lack of a national register for historic buildings.

S: The increase of interest in traditional forms of architecture resulted in a general pattern of refurbishment for buildings that otherwise would have been demolished.

W: There is no criteria of choice for historic buildings that would have priority in preservation, conservation or refurbishment. Financial resources are allocated on ad hoc basis [mostly private sector for privately owned site/building]

O: The creation of a National Register for Historic Buildings/Sites that would include documentation in addition to regulations for use and development. Buildings included in the Register will be identified according to established criteria.

T: The lack of enforcement of a “planning permission” requirement for alterations or refurbishment of significant historic sites/buildings results in: 1. No protection framework for these buildings/sites. 2. Allocation of funds remains ad hoc.

Discussion: The National Register will include only significant buildings/sites. Criteria of significance will be defined according to [?????] Those would be given priority in conservation, management and resource allocation. A general database, possibly the one suggested by NEAP, could document all historic buildings/sites of cultural value. NEAP suggested [priority action 34] that the “database” should be compatible with JADIS [I think we should investigate whether this is a real possibility].

Institutional Issues:

Issue: No single institution/government agency has a mandate over recreational areas/places.

S: No strengths known.

W: There is overlapping of authority. There is a lack of co-ordination. Both resulting in no definition of mandate and responsibility.

O: Criteria can be defined for the designation of areas and thus identification of mandates.

T: Without delineation, no recreational areas will exist; and those that do exist will continue to be ad hoc.

Discussion: The concept of recreation in Jordan does not have any single institutional or legislative framework. As a result, some of the nationally significant recreational areas that incorporates natural and cultural resources suffer from abuse and lack of management. Forms of abuse include soil erosion, compaction, damage to vegetation, disturbance of wildlife, increased fire frequency, vandalism, noise, no collection of solid waste, water pollution and damage to archaeological and cultural heritage. Very few private sector concessions are granted and those are often catering concessions. However, in the area of overlap between recreation and tourism (i.e. when recreation entails any type of cost and/or management) the Ministry of Tourism and Antiquities is legally responsible [law article]. Within MOTA there are two departments that are potentially responsible for the management of recreational parks within this category: the Division of Domestic Tourism and the division of Parks and Environment.

Issue: No institution has mandate over historic buildings.

S: No strengths known.

W: Lack of institutional instruments dilutes responsibility and mandate. This leads to the rapid destruction of the resource and the disruption of urban continuity and urban fabric.

O: An opportunity to define a body with a mandate that would intervene in the form of defining criteria, monitoring and upgrading the National Register for Historic Buildings; following-up on building regulations and zoning and development plans.

T: Such buildings/sites are usually located in the city centres and mostly zoned "commercial" under the pertaining building regulations. The immediate financial gain based on land sell and/or demolition and reconstruction forms the major threat on this resource.

Discussion: The Antiquities law [1976, updated 1988] also protects any buildings/sites that date prior to 1700. Any site/building that post-dates the 1700 is not protected under any legislation and thus suffer from destruction, depletion and/or alterations that change its character and style. For the relatively young modern history of Jordan such buildings/sites that date between 1700 and the declaration of the Kingdom would necessarily have a national significance. Those buildings/sites form the basis for our national collective memory. Obviously, not every building/site from that period should be protected but only those included in the National Register for the Historic Buildings based on the defined criteria. The mandate over these buildings/sites should fall under a separate department within the MOTA that has an independent status and budget similar to DOA. This mandate cannot be incorporated within DAJ due to the difference in related expertise needed and destruction issues encountered.

Issue: The Division of Domestic Tourism and the Division of Parks and Environment at MOTA are not operational and/or do not have mandate.

S. No strengths known.

W: The two sections could form an umbrella for an integrated policy towards national parks and their management.

O: Activating the Division of Parks and Environment could provide an institutional option for an increasingly growing need.

T: the need to create a new institutional body with mandate over designated parks.

Discussion: The Division of Domestic Tourism has two sub-sections: the Tourist Offices Section and the Public Awareness Section. They are responsible for the Petra and Jerash Visitor Centres; the Information Offices at the Queen Alia Airport, Umm aj Jimal and Ar Ramha; and, Tourists Offices at each governorate but not in Mafraq, Zarqa nor Amman. The division does not have any mandate over the designation or management of potential domestic tourism sites. The Division of Parks and Environment seems to be currently unoperational. It exists only on paper and has to director and/or employees. Theoretically this division has three sections: an Environment Section; a Conservation Section; and, a National Park Section.

Issue: Institutional overlaps.

S: No strengths known.

W: Overlap of mandate and management.

O: No opportunities without a comprehensive institutional reform.

T: Institutional overlaps will enforce confusion and reduce chances of integrated management.

Discussion: We can identify three types of institutional overlaps related to recreational parks: 1. Recreational parks fall under the mandate of various institutions pertaining to the different resources within the boundaries of a single park. The issue to be addressed here is the type of management plan enforced. 2. Parks also suffer from institutional overlaps based on geographic demarcation of mandate: i.e. municipal, regional, national and NGO. The issue to be addressed here is "who has authority?" 3. The actual duplication of governmental divisions/ sections or NGOs related to the environment, the different components of natural resources and cultural resources. The issue to be addressed here is the dilution of responsibility and the diffusion of human resource development.

Legal Issues:

Issue: Conflicts in zoning and landuse regulations.

Discussion: Institutional overlaps based on geographic demarcation of mandate: i.e. municipal, regional, national and NGOs is supported by different zoning and landuse regulations. Each institution has its own planning department that demarkates recreational areas based on pertaining regulations. The regulations are often conflicting and not compatible. In most cases the planner/engineer is not familiar with cultural and natural resources in the area and is concerned mainly with following his regulations. Furthermore, no representatives or specialists of natural or cultural resources are envolved at any time of the planning process even though they are invited to be represented on final committees for the approval of the final design.

Issue: Overlaps in the legislation pertaining to recreation.

Discussion: Each recreational criteria is addressed by more than one institution as we have discussed in the institutional issues. This leads to operational and managerial problems. Furthermore, issues related to recreation management (i.e. laws pertaining to noise, solid waste, ...) are addressed by legal clauses under the different, and often conflicting, laws and regulations.

Zoning And Designation Issues:

Issue: There are no integrated zoning regulations for the creation of recreation areas/parks.

S: No strengths known.

W: There is a lack of facilities/ designated areas; and, where there are facilities they are at the behest of political whim.

O: If there are zoning regulations, the recreational areas/parks will be integrated into the "urban/life fabric"; and, will provide for accommodating natural and cultural resources.

T: Without zoning regulations there cannot be an integrated approach.

Discussion: [[How and why current recreational areas became defined??]]
without zoning regulations vacant plot of lands within the urban fabric and/or picnic areas could "change status" or be "re-developed" for immediate economic gains.

Issue: Sites with religious and cultural/religious significance are traditionally used as parks but are not designated as parks.

S: Protection of some sites; and, Unrestricted access for visitors for others.

W: No integrated approach towards this category as a group but rather enforcing the institutional divisions. For example the Mausolea of the Jordan Valley are under the jurisdiction of Awqaf. Adjacent areas, usually used for recreation, are under the mandate of the JVA with no joint multi-use management plan.

- For sites of welis (saints) the land is mostly privately owned but used by the public for benediction and recreation.

O: Designating these parks as cultural landscapes under a multiple-use management plan.

T: Even if the sites that are under the MRA are protected as such, the mandate of awqaf does not exceed the boundaries of the site. Uneven development and potential depletion of the areas that should be designated as buffer zones for these national sites.

Discussion: This criteria includes areas like the Mausolea of the Prophet's Companions in the Jordan Valley, Mount Nebo in Madaba and local welis (saints) all over the country. Some of these sites have international religious significance and some have a limited local significance.

Management Issues:

Issue: Recreation (in the form of play/relax and wellness) is not integrated in any multiple-use management plan.

S: No strengths known.

W: Unrestricted access for visitors except in the cases of natural reserves and archaeological sites; No management threshold; and, high-impact activities.

O: "Play/relax" and "wellness" should be included in a multiple-use management plan to minimise adverse effects of high-impact activities.

T: If not addressed in a multiple-use management plan high-impact activities will compromise the base resource. Destruction, depletion and pollution are irreversible effects of high-impact tourism

(like soil erosion, compaction, damage to vegetation disturbance to wildlife, water pollution, increased fire frequency, vandalism, noise).

Discussion: Most of the traditionally recreational parks in Jordan are based upon or directly neighbouring to significant natural resources. Forests and hot-water springs are favourite picnic sites. The two sources fall under the mandate of two different institutions (FD and WA) and both do not address the “management” of recreational activities.

There is no clear criteria of selection for designating parks, and when parks are chosen their categorisation is inflexible (for example natural reserve). This gives a single type of base resource priority over others and potentially creates rigidity in management. For example: The Dana Wildlife Reserve is managed with the main aim of conserving the biodiversity of all existing ecosystems. Human and cultural resources within and surrounding the reserve area were not initially taken into consideration. Furthermore, the approach towards addressing the socioeconomic issues at the reserve totally ignored the transhumance pattern of local life. Thus the environmental system that is used by the community for their basic subsistence is larger/wider than the designated park area. As a result the designated boundaries mean nothing for the community and only create suspicion towards the Reserve management. The same applies for the important archaeological sites that, in part, form the western boundary of the reserve. Wadi Faynan, for instance, is extremely important as it presents evidence of human activity since the 5th century B.C. to our present time including urban settlement, copper mining and smelting as well as herding and planned agriculture. Even though the archeological site as such is under the mandate of the DOA the boundary of the reserve cuts the site in two. One of the consequences of which is that the RSCN is commissioning archaeological research within the boundary of the Reserve that does not conform to any potential priority plan for the DOA.

Issue: No delineation for the mandate of individual corporations.

S: For the investor: extracting large profits from short-term non-sustainable tourist development.
For the local population: small economic benefits in the form of employment and crafts manufacturing.

W: Abuse of the resource base that leads to general negative impacts on cultural and natural resources. Alienation of the local population if not fully integrated in the management plan.

O: Use low-impact recreation; address the carrying capacity; define mandate based on a zoning plan; Include within a multi-use management plan.

T: Illegitimate competition within the private sector which leads to the destruction of resource.

Discussion:

AGENDA FOR JORDAN PARKS POLICY WORKSHOP

Ministry of Planning

Day 1 June 1

- 9:00 Welcome and introductions by Bhoulos Kefaya, Ministry of Planning
- 9:15 Jordanian team members - five minute presentations
1. Biodiversity 2. Natural resources 3. Archaeology 4. Cultural resources 5. Recreation areas
- 9:45 Consultants presentation: Protected Areas Concept and Designation Criteria
Handouts - "Selecting an Area for Designation as a Jordan Protected area" and "Illustration of the Range of Park and Protected Area Categories"
- 10:10 General discussion
- 10:25 Formation of three groups and selection of group leaders
1. Natural resources 2. Archaeological resources 3. Cultural resources
- 10:45 Coffee break
- 11:15 Group session #1 Question: "What are the most important criteria for selecting units to be included in a **Jordanian Protected Areas (JPA)** system?"
- 12:15 Groups report to general session, consultants summary, and open discussion
- 12:45 Lunch
- 14:00 Consultant presentation of fundamental policy for JPA System
- 14:30 Group session #2 Question: "What fundamental policies are appropriate for a JPA system?"
- 15:30 Coffee available
Group report to general session
- 16:30 Summary of Day One

Day 2 June 2

- 9:00 Consultant policy summary
- 9:15 General discussion
- 10:30 Coffee break
- 11:00 Group session #3 Question: "For each category of JPA, what are specific policy options?"
- 12:00 Group reports to general session and open discussion
- 13:00 Lunch
- 14:00 Consultants present JPA organizational management options
- 14:15 Group sessions #4: Task: Analysis of JPA organizational management options.
- 15:00 General discussion (coffee available)

ANNEX C

ATTENDEES AT JORDAN PARKS POLICY WORKSHOP

**Jordan Protected Areas
Workshop 1&2/6/1996**

No.	Name	Agency	Tel.	Fax
1.	Dr. Khalaf Alkilani	GCEP	833084	830084
2.	Eng. Majeda Al- Assaf	HCST	840401	840589
3.	Shafiq Zawaideh	Madaba Heritage	642071	630138
4.	Chris Johnson	RSCN	837986	837411
5.	Anis Muasher	RSCN	837986	837411
6.	Abdel Sami' Abu Dayya	Dept. of Antiquities	644336	615848
7.	Khaled Irani	RSCN	837986	837411
8.	Ruba Kan'an	British Inst. for Arch.	841317	831791
9.	Jack Morehead	Consultant	-	-
10.	Tim Miller	USAID	820101	-
11.	Zuhair Amr	JUST	833956	623725
12.	Maher Abu Ja'far	Dept. of Forests	841116	857929
13.	Dr. Awni Taimah	NCARTT, DG.	726680	726099
14.	Ramzi Ka'war			
15.	Boulos Kefaya	MOP	644466	648341
16.	Amer Homoud	MOP	644466	649341
17.	Benitta Sa'ad	MOP	644466	641341
18.	Nabeel Abu- Shriha	Nour Al Hussien NHF Foundation	606992	606993
19.	Dr. Maher Abu Taleb	ERMC	861800	865830
20.	Dr. Carl Dutto	USAID	820101	820143
21.	Akram Junaidi	WAJ	680100	
22.	Ra'ed Bani Hani	GCEP	830084	830084
23.	Bassam Hayek	RSS	844701	844806
24.	Dr. Cherie Lenzen	USAID	820101	820143
25.	Dr. Sadeq Uweinati			
26.	Lean Fakhoury	F.O.A	696682	696682

ANNEX D

RESULTS OF NOMINAL GROUP SESSIONS ON DESIGNATION CRITERIA

ARCHAEOLOGICAL GROUP

TOP CRITERIA

1. UNIQUENESS.
2. IMPORTANCE ON LOCAL / REGIONAL / NATIONAL LEVEL.
3. REPRESENT DIVERSITY OF PERIODS (AND TYPES).
4. DEGREE OF IMPACTS/
URBANIZATION, INDUSTRIALIZATION.
5. IMPORTANCE OF CULTURAL NATURAL COMBINATION.
6. SITE PROVIDE FUTURE COMMUNITY CONTRIBUTION.

ARCHAEOLOGICAL CRITERIA

- A. THE ARCHAEOLOGICAL SITES SHOULD REPRESENT THE DIVERSITY OF PERIODS IN JORDAN.
- B. DIVERSITY WITHIN SITES.
- C. GEOGRAPHIC LOCATION.
- D. UNIQUENESS.
- E. TYPE OF SITE / SOCIAL HISTORY, INDUSTRIAL.
- F. SIZE.
- G. INTEGRITY WITHIN URBAN CONTEXT.
- H. DEGREE OF IMPACTS / URBAN INDUSTRIALIZATION.
- I. IMPORTANCE IN LOCAL / REGIONAL / NATIONAL / INTERNATIONAL LEVEL.
- J. IMPORTANCE OF CULTURAL, NATURAL - COMBINATION.
- K. CONTRIBUTION TO TOURISM.
- L. LAND OWNERSHIP
- M. ANTICIPATED COSTS AND BENEFITS.
- N. DIFFERENT TYPES OF SITES.
- O. INVESTMENT OPPORTUNITIES.
- P. USE PROPER W/ PROTECTION
- Q. SITE PROVIDES FUTURE COMMUNITY CONTRIBUTIONS

CULTURAL RESOURCES GROUP
CULTURAL SOLUTION

1. INTRINSIC VALUE.
2. RECOGNIZED INTERNATIONAL VALUE.
3. CONTRIBUTION TO THE SURROUNDING COMMUNITY.
4. THREAT OF DEGRADATION.
5. ACCESSIBILITY.
6. UNIQUENESS OF BUILDING TYPE AND TECHNIQUE.

A. **HISTORICAL**

1. STORY VALUE.
2. RELIGIOUS VALUE.
3. EMOTIONAL VALUE.
4. RECOGNIZED INTERNATIONAL VALUE.
5. INTRINSIC VALUE OF THE RESOURCE.
6. UNIQUENESS OF REMNET.

B. **COMMUNITY**

1. CONTRIBUTION TO SURROUNDING COMMUNITY.
2. INVOLVEMENT OF SURROUNDING COMMUNITY.

3. REPRESENTATION OF LOCAL LIFE STYLE.
4. COMMUNITY REQUEST FOR DESIGNATION AND DEVELOPMENT.

C. **ECONOMIC**

1. TOURISTIC POTENTIAL FOR REUSEETC.
2. FEASIBILITY.

D. **PHYSICAL ATTRIBUTES**

1. BUILDING STYLE.
2. ACCESSIBILITY.
3. LANDSCAPE (AESTHETIC).
4. THREATING OF SITE / DEGRADATION ...ETC.
5. ENVIRONMENTAL VALUE (CIVIC).

E. **EDUCATION AND PUBLIC AWARENESS.**

- A. THE INTRINSIC VALUE OF THE RESOURCE.
- B. RECOGNIZED INTERNATIONAL VALUE.
- C. HISTORICAL VALUE.
- D. LOCAL CULTURAL VALUES.
- E. THREATENING OF THE SITE.
- F. EDUCATIONAL.
- G. HISTORICAL STORY VALUE.
- H. CONTRIBUTION TO SURROUNDING COMMUNITY.
- I. BUILDING STYLE/TECHNIQUE AND LOCATION.
- G. POTENTIAL FOR REUSE.
- K. TOURIST POTENTIAL.
- L. RELIGIOUS VALUES.
- M. UNIQUENESS OF REMNET.
- N. ACCESSIBILITY.
- O. EMOTIONAL VALUE.
- P. REPRESENTATION OF LOCAL LIFE STYLE.
- Q. AESTHETICS (LANDSCAPE).
- R. INVOLVEMENT OF LOCAL COMMUNITY.
- S. ECONOMICAL FEASIBILITY.
- T. COMMUNITY REQUEST FOR DEVELOPMENT.

NATURAL RESOURCES GROUP

1. UNIQUE AND/OR REPRESENTATION ECOSYSTEMS
2. RARE, THREATENED AND OR ENDANGERED SPECIES AND HABITATS
3. HEAVY PESSURE FOR EXPLOITATION OF RENEWABLE AND NON-RENEWABLE RESOURCES.
4. POTENTIAL FOR ECONOMIC OPPORTUNITY AND SOCIAL BENEFITS.
5. THE DEGREE FRAGILITY OF ECOSYSTEMS.

PROPOSED CRITERIA

- A. HEAVY PRESSURE FOR EXPLOITATION EXTRACTION OF NON-RENEWABLE RESOURCES
- B. UNIQUE AND/OR REPRESENTATIVE ECOSYSTEMS (FLORA & FAUNA)
- C. FRAGILE OF ECOSYSTEMS
- D. EDUCATION AND RESEARCH POTENTIAL
- E. POTENTIAL FOR ECONOMIC OPPORTUNITY AND SOCIAL BENEFITS
- G. RARE THREATENED AND/OR ENDANGERED SPECIES & HABITANTS
- H. THE DEGREE NATURALNESS OF HUMAN INTERFERENCE .
- I. PHYSICAL INTEGRITY OF THE AREA.
- J. DEGREE OF THREAT & FROM HUMAN PRESSURE.
- K. AN AREA WHERE LOCALLY EXTINCT OF SPECIES CAN BE POTENTIAL FOR RE- INTRODUCED.
- L. SIZE ----- INTERNATIONALLY ACCEPTED SIZE RANGE.
- M. DEGREE OF NATURAL RISK .
- N. BIODIVERSITY PER UNIT AREA.
- O. ENDEMIC AND RELICT SPECIES.
- P. MIGRATORY REFUGEE AREAS.
- Q. POTENTIAL TO HAVE BUFFER ZONE.
- R. EXTENT OF DEGRADATION .
- S. POTENTIAL FOR CONSERVATION AND TOURISM .
- T. REGIONAL /STRATEGIC SIGNIFICANCE .
- U. CULTURAL HERITAGE
- V. ACCESSIBILITY