PROJECT BRIEF

1. IDENTIFIERS

PROJECT NUMBER:	PIMS: 227
TITLE:	Biodiversity Conservation and Protected Area Management
DURATION:	7 years
IMPLEMENTING AGENCY:	United Nations Development Programme (UNDP)
EXECUTING AGENCIES:	Ministry of State for Environmental Affairs, Ministry of Agriculture and Agrarian Reform
REQUESTING COUNTRY:	Syria
ELIGIBILITY:	CBD ratification: 10 December 1995 Notification of participation in the restructured GEF:
GEF FOCAL AREA:	Biodiversity
PROGRAMMING FRAMEWORK:	OP 1, Arid and semi-arid ecosystems, crosscutting with land degradation

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2. SUMMARY: The project will demonstrate practical methods of protected area management that effectively conserve biodiversity and protect the interests of local communities while supporting the consolidation of an enabling environment that will facilitate replication throughout the country. In order to achieve this objective, the project will produce three outcomes: (i) Policies, legislation and institutional systems that allow for the wise selection and effective operation of protected areas that conserve globally significant biodiversity; (ii) Effective techniques for PA management and biodiversity conservation have been demonstrated at three sites totaling approximately 60,000 ha. and are available for replication, and; (iii) Sustainable use of natural resources in and around protected areas has been demonstrated through the development and implementation of a program for alternative sustainable livelihoods and community resource management.

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3. COSTS AND FINANCING (US$ MILLION)

GEF:	Project	$3,291,850	
	PDF-B	$194,000	
	Sub-total	**$3,485,850**	
Confirmed Co-financing:			
	Government of Syria – Project	$2,407,000	(In kind)
	Government of Syria – PDF-B	$27,000	(In kind)
	UNDP TRAC	$1,000,000	(In cash)
	Sub-total	**$3,434,000**	
	PROJECT TOTAL	**$6,919,850**	

4. ASSOCIATED FINANCING: Ministry of Environment project for marine protected areas, including Um al Toyour, with 120,000 Euros of support from the European Union.

5. GEF FOCAL POINT ENDORSEMENT

Name: Awaidah, Yahia **Position:** Director General
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Date:

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List of Acronyms

AEWA	African-Eurasian Migratory Waterbird Agreement
CBD	Convention on Biological Diversity
GEF	Global Environment Facility
HCA	High Commission for Afforestation
HCES	High Commission for Environmental Safety
ICARDA	International Center for Agricultural Research in Dry Areas
IFAD	International Fund for Agricultural Development
IPGRI	International Plant Genetic Resource Institute
IUCN	International Union for the Conservation of Nature
MAAR	Ministry of Agriculture and Agrarian Reform
MAAR-DBPAM	Ministry of Agriculture and Agrarian Reform – Division of Biodiversity and Protected Area Management
MSEA	Ministry of State for Environmental Affairs
MSEA-DBPA	Ministry of State for Environmental Affairs – Directorate of Biodiversity and Protected Areas
MSP	Medium-size Project
NBSAP	National Biodiversity Strategy and Action Plan
NBU	National Biodiversity Unit
NPA	Nature Protected area
NPD	National Project Director
NPM	National Project Manager
PCU	Project Co-ordination Unit
PIM	Project Implementation Meeting
PIME	Project Implementation and Monitoring Expert
PSC	Project Steering Committee
RaPA	Restoration Protected Area
RePA	Rangeland Protected Area
SMPR	Secretariat-Managed Project Review
TPR	Tripartite Review
UNDP	United Nations Development Programme

COUNTRY DRIVENNESS

1. In accordance with Article six of the Convention on Biological Diversity, Syria has developed a National Biodiversity Strategy and Action Plan (NBSAP).[1] The NBSAP, which was adopted by Syria's Higher Council for Environmental Safety on 13 May 2002, was prepared through a participatory process involving a broad range of national and local stakeholders. The NBSAP includes fifteen objectives, at least ten of which are supported by the present project. **Table 1** highlights the manner in which the project responds to the specific objectives of the NBSAP.

Table 1: UNDP/GEF Syria biodiversity project and the NBSAP

NBSAP Focal area	Objective	GEF project activities specifically called for by NBSAP
Conservation and management of 'natural' biodiversity	1- To conserve and manage terrestrial biodiversity	Control harvesting of wood for charcoal production, control forest fires, prevent illegal hunting, limit road construction
	4 – To conserve and manage a system of protected areas	Systemic strengthening; Boundary surveys, ecological monitoring, management planning, awareness raising among officials and local people, enforce ban on hunting in PAs
	5- Benefits from wildlife	Survey wild plants, generating income from wild plants
Conservation and sustainable use of agricultural biodiversity	7- Conserve and sustainably use agricultural biodiversity	Rehabilitation of marginal and desertified lands using local plant species, integrated pest management
	9 – Conserve and sustainably use newly forested areas	Continue an (improved) afforestation program, involve farmer organizations in establishment and management of forests and afforested areas
	10 – Protect valuable plant and animal genetic resources	Implement laws that protect local varieties of cultivated trees, cooperate with international organizations to conserve plant genetic resources
Miscellaneous	11 – Environmental legislation and implementation of strategy	Create and / or update legislation related to wild flora, fauna and habitats, genetic resources
	12 – Achieve sustainable socio-economic development	Studies on the costs of environmental degradation and the economic benefits of conservation
	15 – Biodiversity education and public awareness	Awareness raising through outdoor activities, media
	16 – Arab, regional and international cooperation	Promote Arab, regional and international cooperation for exchange of experience, financial assistance and wider recognition of the conservation efforts in Syria

2. The project also provides timely support to the implementation of Syria's newly approved environment law, which came into affect on 8 July 2002 (see below, under 'Policy, legal and institutional context').

[1] Ministry of State for Environmental Affairs, Syrian Arab Republic. 15 February 2000. *National Biodiversity Strategy and Action Plan*. Damascus. Mimeo.

PROJECT CONTEXT

A. Environmental context

3. Syria is considered one of the most biologically diverse countries in the Mediterranean, distinguished by its rich and unique assemblages of globally significant biodiversity. It represents a transition zone between two regional centers of endemism, the Mediterranean and the Irano-Turanian. With a wide range of climatic, topographic and geomorphological characteristics, Syria supports remarkable habitat diversity ranging from evergreen oak forests in the northwest to sand dune deserts in the southeast. The precipitation gradient is notably varied between the high altitudes in the west and northwest (over 1,200 mm annually) and the southeastern plains and *badia* (less than 100 mm), leading to various phyto-geographical regions and habitats. These habitats include the Mediterranean coastal zone, levantine uplands, Irano-Turanian steppe, badia, north Syrian plateau, inland water and wetland ecosystems, and the Al-Asi depression, or *Ghota*. The overall rate of biodiversity endemism in Syria is estimated at 20%, which is considered high by dryland standards.

4. Syria represents a critical resting and wintering stop for migratory birds passing along the Western Paleartic flyway. Of some 352 bird species recorded in Syria, 155 are migratory.[2] Sixteen species are included in IUCN's Red List of Threatened Species, including the critically endangered Northern Bald Ibis, a colony of which was recently discovered breeding in the Al Badia region.[3] Syria holds a significant number of species whose world populations are wholly or largely restricted to the Middle East, e.g., the Syrian serin *Serinus syriacus*, Little bustard *Tetrax tetrax*, and the Black vulture *Aegypius monachus*. Twenty two sites across the country, totaling 630,000 ha., have been identified by BirdLife International as Important Bird Areas.[4]

5. As far as mammals are concerned, Syria supports several species included in IUCN's Red List, e.g., *Panthera pardus tulliana* - panther, *Equus hemippus* - the Syrian wild ass and the *Gazella subgutturosa* - Al-Reim). Out of the 125 mammals recorded in Syria, about 35 species are considered threatened or endangered at the national level (e.g. *Cervus elphus*, *Gazella dorcas*, *Gazella subgutturosa*, *Capra hircus* (Shami goat), *Bovis domasceena* (Syrian bovine), and five others (cheetah, lion, Capreolus [yahmour], dama-ayl, and castor) have been extirpated at the national level.

6. In addition to birds and mammals, Syria supports at least 143 species of reptiles and amphibians, and about 500 fish species. The actual figures are likely to be substantially higher given the paucity of data on Syria's reptiles and amphibians, and marine biota.

7. In terms of floristic biodiversity, Syria is considered one of the most biologically diverse countries in the Mediterranean Basin. It has over 3,500 plant species, of which about 700 species are considered threatened, and 300 species are endemic. The natural forest cover and rangeland habitats account for over 10 million ha, which is approximately 60% of the total land area.

B. Policy, legal and institutional context

8. At the global level, the Government of Syria has recognized the importance of conserving its nationally and globally significant biodiversity. It has ratified, *inter alia*, the Biodiversity Convention, the World Heritage Convention, the Ramsar Convention, and the protocol

[2] Baumgart, Wolfgang. 1995. *Die Vögel Syriens*. Heidelberg: Max Kasparek Verlag.
[3] See www.cnf.ca/media/july_10_02.html
[4] See www.birdlife.net/sites/index.cfm

concerning Mediterranean Specially Protected Areas. In 2002, it joined the African-Eurasian Migratory Waterbird Agreement (AEWA).

9. At the national level, a number of steps have been taken towards establishing a policy, legal and institutional framework for conservation of biological diversity. The Ministry of State for Environmental Affairs (MSEA) was created in 1991 and given broad responsibilities to define rules and regulations in the area of environmental protection.[5] In 1996, MSEA established a National Biodiversity Unit (NBU). One of the NBU's first tasks was the preparation of a National Country Study on Biological Diversity, which was published in 2000.[6] The NBU has also acted as the national executing agency for the preparation of the NBSAP.

10. Legal, policy and institutional steps towards the establishment of an effective system of protected areas (PAs) have taken longer to develop, despite their critical importance as a tool for conserving biodiversity. By the end of 1993, only two PAs (total appx. 35,000 ha) had been established in Syria: Al Talila (1991) and Jebel Abdul Aziz (1993).[7]

11. The 1994 Forestry Law gave MAAR the right to establish three specific types of protected areas:

- **Nature protected areas (NPAs)** are created for the protection of a forest or an ecosystem because of its biodiversity. Grazing, cutting and agricultural practices are prohibited in nature protected areas.
- **Restoration protected areas (RePAs)** are created in areas affected with soil erosion or sand dune invasion, or any other kind or degradation which makes it necessary to stop all agricultural activities in the area. In many cases these areas are planted with trees.
- **Rangeland protected areas (RaPAs)** are created in the steppe, or *Badia*, to protect the pasture for sheep grazing. These protected areas are planted partly with *Atriplex* or *Slasola* shrubs to increase their carrying capacity for grazing. Reseeding methods are also used to rehabilitate degraded parts of the protected area. RaPAs are open for periodic controlled grazing during the dry season and in dry years. They constitute a feed reserve for sheep and demonstration sites for herders.[8]

12. From 1994 to 1997, MAAR gazetted only one NPA (1,350 ha), the cedar and fir protected area in Slenfe. Meanwhile, two wetland PAs (total appx. 1,600 ha) were established during this period by the Ministry of Irrigation. From 1998 to 2002, eight new NPAs (total appx. 80,000 ha), all within forested or degraded forest ecosystems, were gazetted by MAAR, along with a significant extension to the area of the Jebel Abdul Aziz NPA.[9] Also, in 2000, a Marine Protected Area (MPA) was established by the Directorate of Ports at Um al Toyour.

13. Thus, as of December 2002, the extent of Syria's protected area management system could be summarized as follows:

- One protected area for rangeland (30,000 ha), established and managed by the Al Badia Department of MAAR;

[5] Law No. 11, 22 August 1991.
[6] Ministry of State for Environmental Affairs and United Nations Environment Programme. 2000. *National Country Study of Biological Diversity in Syrian Arab Republic*. Damascus.
[7] Al Talila was established by Decree No. 140 under Al Badia Protection Law. Jebel Abdul Aziz was originally established as a protected area of 4,240 ha.
[8] Personal communication with Prof. Youssef Barkoudah, 5 December 1993. See also Barkoudah, Youssef. 15 August 2001. "Institutional Analysis of Biodiversity Conservation and PA Management." Report prepared under the PDF-B phase of the UNDP/GEF project for Biodiverity Conservation and Protected Area Management in Syria. Mimeo.
[9] Decision 27/t of 15 November 2002.

- Ten NPAs (total appx. 125,000 ha), all in naturally forested, degraded and/or afforested areas, established by the Forestry Department of MAAR under the 1994 Forestry Law and managed by that department.[10]
- Two wetland protected areas (total appx. 1,600 ha) established and managed by the Ministry of Irrigation.
- One marine protected area established and managed by the Directorate of Ports.

14. MAAR's approach to PA management has thus far placed little emphasis on the need to conserve biodiversity at these sites. As a result, and with the increasing recognition that Syria's PAs are not yet providing effective protection of the country's biodiversity, new institutional approaches have been developed. One such approach has been to strengthen the role of MSEA, and the NBU in particular, in developing the system of PAs. Thus, according to the NBSAP, "[T]he NBU is expected to play an important role in the development of a comprehensive system of protected areas in Syria."[11]

15. The newly enacted Environment Law No. 50 (2002) represents significant progress towards defining MSEA's role in PA management. This Law gives MSEA the rights and responsibilities to: (i) define the conditions for the establishment of protected areas and national parks, and; (ii) monitor these protected areas, each according to its components and characteristics. The new law also calls for the establishment of an Environmental Fund which will be utilized for various environmental projects, including support for the establishment and effective management of PAs.[12]

16. MAAR, for its part, has taken steps aimed at improving the effectiveness of its management efforts. In particular, the Ministry has recently established a department for biodiversity, with a specific division for protected areas.[13] A separate decision has established another new department within MAAR, this one for grazing, protected areas and biodiversity conservation in the Al Badia region.[14]

17. Both MAAR and MSEA extend beyond Damascus with staff and operations at provincial level. In the case of MAAR, provincial-level Forestry Departments are responsible for day-to-day management of nature reserves and other forest areas. These are well staffed and fairly well equipped. MSEA has a more limited representation at provincial level, with small units operating from provincial capitals with little on-the-ground operational capacity. To date, these units have played no role in protected area management and indeed sorely lack capacity to do so.

18. In addition to MSEA and MAAR, several other Governmental bodies having roles related to protected area management should be mentioned:

- *The Higher Council for Environmental Safety (HCES)*: The HCES was established by Decree #11 of 1991. Headed by the Prime Minister, it is the highest-level decision-making body on environmental matters, with the power to adopt environmental policies, regulations and standards. As noted above, HCES was responsible for adopting the NBSAP.
- *The High Commission for Afforestation (HCA)*: The HCA was established by Presidential Decision No. 108 of 1977 with a mandate to promote the planting of both forest and fruit trees, with the eventual goal of reaching 15% forest cover. Five

[10] One of these, the coastal and marine reserve of Um Al-Touyur, has been established together with the Directorate of Ports, which is responsible for the marine portion of the reserve.
[11] Op. cit., note 1.
[12] See Environment Law No. 50, Chapter 2, paragraphs 10, 18 and 19.
[13] Decision No. 55/t of 2 October 2002.
[14] Decision No. 57 of 2 October 2002.

ministries as well as five popular organizations participated in the HCA. Annual targets aimed at planting up to 30 million forest trees and 12 million fruit trees on 24,000 ha. Afforestation efforts led by the HCA were implemented by MAAR. In 2002, the HCA was dissolved, with MAAR taking over additional responsibility for planning, as well as implementing, afforestation programs.

- *Higher Committee for Protected Areas*: This was a recommendation from the NBSAP that requires government endorsement.
- *The Ministry of Irrigation* currently manages two wetland-protected areas. One of these was short-listed as a potential demonstration site for the present project.
- *The Directorate of Ports* has established one marine protected area, at Um al Toyour.

19. The adequacy and implications of the above legal, policy and institutional framework will be assessed in the following section on "Baseline Assessment."

C. Socio-economic context

20. According to UNDP's 2002 Human Development Report, Syria ranks number 108 out of 173 countries studied. Life expectancy at birth is relatively high at 71.2 years, while adult literacy stands at 74.4% and GDP per capita is estimated at US$3,556.[15] Population growth rates are high, with an estimated 3.1 percent rate of population growth from 1975-2000. Nearly half of the population (48.6%) resides outside of urban areas.[16]

21. The recent establishment of a number of NPAs in Syria has had the effect of restricting access by local populations and others such as transhumants to resources, including land, water, timber, wildlife and wild plants (both for livestock grazing and collection), which had previously been utilized by these communities. Indeed, some communities have seen their villages become 'islands' within newly established NPAs. This situation has created livelihood issues as well as no little amount of conflict, particularly between local villagers and forestry department officials.

22. Recent awareness concerning the importance of input by local stakeholders has led to growth in the number of local groups involved in one way or another in environmental protection activities. These include recent campaigns by MSEA and MAAR, as well as by NGOs, on issues such as water conservation and reforestation.

23. The socio-economic context within project demonstration sites and their peripheries is described in the following section on "Baseline Assessment."

D. Technical co-operation context

24. One of the protected areas administered by MAAR – the Arz/El-Shouh protected area near Slenfe – was selected in 1998 as the site for a World Bank/GEF Medium-sized Project (MSP). The $1.4 million project, with $750,000 in support from GEF, has the twin aims of protecting biodiversity at the pilot PA, while also strengthening the Government's overall capacity to protect and manage biodiversity. Planned outputs include: (i) development of enabling legislation; (ii) institutional strengthening of MSEA and MAAR; (iii) extension and legal designation of the pilot PA; (iv) development and implementation of a management plan, and; (v) public awareness program.

25. The Arz/El Shouh MSP project has been carefully monitored during the course of developing the present project brief. As a result, the design of the present project reflects a

[15] United Nations Development Programme. 2002. *Human Development Report 2002*. New York: Oxford University Press. The GDP figure used is adjusted to reflect purchasing power parity (PPP).
[16] Ibid.

deliberate effort to avoid the numerous implementation difficulties faced by the Arz/El Shouh project. In addition, the latter was one of fifteen projects selected for the pilot phase of Secretariat-Managed Project Reviews (SMPR) in 2002. The SMPR took place in October/November 2002, and its findings have been carefully reviewed and taken into account during the final stage of designing the present project (see below, sub-section on Lessons Learned from Previous Projects –also para. 121).

26. Other recent and ongoing technical co-operation projects of relevance include the following:

- From 1998 to 2001, the MSEA's National Biodiversity Unit implemented a Biodiversity Strategy and Action Plan project valued at $194,000. The project was designed to build on recommendations put forward in the Syrian Country Study on Biological Diversity.
- A UNDP-GEF Regional project "Conservation and Sustainable Use of Dryland Agro-biodiversity in Jordan, Lebanon, Syria and the Palestinian Authority" has been underway since 1997. The project deals with the conservation of important relatives and land races of 13 agricultural species. MAAR is the executing agency for the Syrian national component of the project and will therefore be responsible for ensuring co-ordination. The project managers of the above two projects are observing members of the current project steering committee and have attended most of the PDF-b consultation workshops.
- Within the framework of the Mediterranean Action Plan, the European Union is providing support for preparation of a marine biological survey and management plan for a recently established PA at Oum al Toyour.
- AN IFAD/AFESD project for the central and coastal regions of Syria is being implemented by MAAR. It covers around 511 villages in the northern part of Lattakia and Tartous Governorates, as well as Homs and Ham and has a total budget of US$117.2 million. Relevant project activities include: land reclamation, development of livestock production and modernization of irrigation.

BASELINE ASSESSMENT

27. The present project proposal was prepared with the support of a PDF-B grant from the GEF. The PDF-B process included a careful process of site selection.[17] A quantitative and qualitative methodology was developed for this purpose – including a total of 12 criteria for national and global significance – and was used to rank 13 candidate sites. From this analysis, a short-list of five sites emerged. An inter-disciplinary team of national and international experts visited short-listed sites and made recommendations on the final site selection; final site selection was the responsibility of a Project Steering Committee. Emerging from this process is a set of three sites that are both globally significant in their own right as well as representative of the critical issues facing biodiversity in Syria and thus amenable to replication and achievement of further global biodiversity gains.

28. Following selection of the demonstration sites, each chosen site was the subject of detailed investigations and reporting by a team of national experts in the following fields of study: agronomy, fauna, flora, socio-economy, ecotourism and sociology.[18] These studies were then synthesized into site profiles for each site.[19] The following summary descriptions of the sites, their baseline activities and threats have been derived from these expert reports and in-depth site profiles.

[17] Details of the site selection process are presented in Annex K.
[18] Individual sectoral studies for each site are available through the UNDP office in Damascus.
[19] Site profiles are available from the UNDP Syria office.

A. Baseline description and assessment at demonstration sites

I. AL FRONLOQ (4,500 HA.)

29. Physical and biological overview: The Al Fronloq protected area (see **Annex E, Map 1**) is located in the Al-Bayer sub-district of the governorate of Lattakia in northwestern Syria, about 47 kilometers north of Lattakia city. The Lattakia-Kassab road forms the western border of the protected area, while the Syrian-Turkish border forms its northern border. From the East, a 50-100m strip bounds the site to the east of nahr Al Kabier Al shamali. Agricultural lands of Al-saraf, Zahie, Al-kabier, Biet shardaq and Kantara villages form the southern borders. The size of the project site is 4,500 hectares.[20]

30. Parent materials at the site are composed of ultra basic green rocks of an igneous nature, which are quite unique in Syria and in the Eastern Mediterranean. These include peridotites, pyroxenes, gabbros, serpentine and amphibolites. Peridotites and pyroxenes, have a high content of Mg and are low in SiO_2 with very low sodium and potash content. These rocks are impermeable to water and plant roots and have low water-holding capacity. With few exceptions, soils formed on these rocks are shallow – less than 20 cm in most cases – and not well developed.[21] On the other hand, gabbros and amphibolites contain more balanced nutrients and have a greater capacity for holding water than the other types of rocks mentioned.

31. Climatically, the area falls within the cool variant of the sub-humid to humid bio-climatic zone of the Mediterranean climate. Average rainfall is approximately 1,160 mm, with the highest rainfall levels typically occurring in winter.[22]

32. In ecological terms, the protected area falls within the Eu-Mediterranean to the Upper Mediterranean vegetation zones. Along with the micro-climatic features of the protected area, topography and soil properties play an important role in determining species associations and species occurrences. Thus, all of these factors have contributed to the appearance of the polyclimax vegetation in the area, where various forest assemblages can be seen.[23] The area contains two ecosystems which make a gradual transition from one to the other. Deciduous trees are concentrated in the middle of the protected area with penetration into surrounding Brutia pine forests.

33. The core area of the Fronloq site is composed of pure deciduous trees of *Quercus cerris* subsp. *pseudocerris*, which dominates the forest. However, this situation is limited to a few locations. These include humid western, northern and eastern slopes and sites where the soil is deep and holds enough water to support lush vegetation. Deciduous species are also found along watercourses and depressions. The site also contains several ecotypes of Brutia pine as well as wild relatives of fruit trees. Brutia pine ecotypes are distinguished from each other by several characteristics such as drought and cold tolerance, tolerance to soil nutrient imbalance, etc.[24]

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[20] This figure includes approximately 3,000 ha that were recommended for gazetting by the project team during a site visit. This proposal remains under consideration by MAAR

[21] See Chalabi, M.N. 1980. *Analyse phytosociologique, phytoecologique, dendrometrique et dendroclimatologique des forets de Quercus cerris subsp. Pseudocerris et contribution a l'etude taxonomique du genre Quercus en Syrie.* These de doctorat en sciences, Universite d'Aix – Marseille III, France

[22] See ACSAD. 1998. Climatic Data Base. Damascus – Syria: ACSAD; Nahal, I. (1981). "The Mediterranean Climate from a Biological Viewpoint." In: DI Castri, F., Dw. Goodall and RL. Specht (eds.), *Ecosystems of the World, vol.11. Mediterranean-Type Shrublands*. Elsevier, Amsterdam, pp.63-86.

[23] See Nahal, I. 1974. "Reflexions et recherches sur la notion de climax de la vegetation sous le climat Mediterranean oriental." *Ann. Univ. Provence, Biol. Ecol. Mediterr.*, 1(1):1-10.

[24] Nahal, I. 1982. Pinus brutia Ten. *and its Forests in Syria and Eastern Mediterranean Countries* (in Arabic). Aleppo: Aleppo University Publications.

34. The Fronloq ecosystem is quite distinctive for Syria as it represents the climax vegetation in the area. The ecosystem itself is composed of an ecotone of unique assemblages of species of European origin, which are remnants of the ancient climate reign in Syria, mingled with Mediterranean and Irano-Turanian species. The ecosystem is considered fragile and sensitive to pressures.

35. The site contains about 325 vascular plant species, which belongs to 232 genus and 73 families. Nearly 50 percent of these species are of Mediterranean origin and 40% of them are endemic to the Eastern Mediterranean region (Lebanon, Syria and Turkey). The site also contains at least nine endemic species.[25] The number of endemic species on the green rocks north of Lattakia and across the border with Turkey reaches 26. More than 40 species are rare or endangered in the site as well as in Syria as a whole. Nearly 30 species belong to Euro-Siberian vegetation, which was present in Syria as long ago as the 8th millennium BC, and is now absent except remnants found at the site.

36. Due to its geographic location, the Fronloq site constitutes a bridge between southern Europe and Asia Minor for migratory wildlife species that cross the area. Furthermore, the site is one of the stopover points for various globally threatened and migratory birds, including Black vulture (*Aegypius monachus*), Golden eagle (*Aquile chrysaetos homeyeri*) and the Common Crane (*Grus grus*).[26] A number of globally endemic and endangered species in Syria in particular and the Middle East in general have been recorded at the site.

37. In addition to the above-mentioned migratory species, important resident bird species recorded at the site include: Syrian serin (*Serinus syriacus*), Syrian woodpecker (*Dendrocopus syriacus*), European roller (*Corracias* garrulous), Finsch's wheatear (*Oenanthe finschii*) and masked shrike (*Lanius nubicus*). Recorded mammals, some of which have rarely been seen in recent years, include the wolf (*Canis lupus*), Roe deer (*Capreolus capreolus*), red fox (*Vulpes vulpes*), striped hyaena (*Hyaena hyaena*) and fallow deer (*Gazella dama*).

38. Site management and policy: Al-Fronloq was declared an NPA by MAAR Ministerial decision 17/T of 18 May 1999. Originally the total area targeted by this decision was 1,500 ha, which includes the core area of the pure *Quercus pseudocerris* assemblage within the site. However, the initial survey by the team member of national and international consultants envisaged the extension of the protected area to 4,500 ha to include the surrounding Brutia pine assemblages and other habitats. This proposal remains under consideration by MAAR.

39. MAAR's Forestry Department manages the site through its office in Lattakia. The two relevant sub-districts' offices of forestry in Qastal Mouaf and Al-Rabeeha manage the site at ground level. There are two fire lookout posts in the protected area, along with one forest ranger station. The fire lookout posts are manned 24 hours most of the year (9 months). They are part of a series of posts built up by MAAR to combat forest fires. A number of forest guards, some of whom are motorized, are on daily duty at the site. During the fire season (mostly summer and fall), firefighting teams are on alert along major roads in nearby forest areas and at the site itself.

40. Socio-economic context: The total population living in and immediately surrounding the protected area is estimated at 1,500 persons, distributed amongst the following villages: Al-Aterah (300), Al-Kabier (400), Al-Khadra (550), and Al-Kantara (250). Most of these villages are centered on water sources and natural springs. The population of the area is of varying ethnic origins. For instance, Al-Khadra is about 10 percent Arab and 90 percent Turkmen.

[25] Mouterde, P. 1966, 1970, 1983. *Nouvelle Flore du Liban et de Syrie*. Tome I, II, III. Dar el-Machreq, Beyrouth, Liban.
[26] UNEP/MSEA, 2000; Baumgart, 1995.

41. Nearly 6 percent of the population of the above villages migrates to urban areas (mainly Lattakia), while about 2 percent migrate to Lebanon as workers. Major reasons reported for out-migration include small size of land holdings, land fragmentation, population pressures and low income levels.

42. There are several population centers nearby the protected area, including the town of Kassab (6 km from the site), the village of Qastal Mouaf (5 Km west), and the town of Rabeeha (8 Km to the southeast). The main urban center connected with the site is the city of Lattakia (50 Km). No nomadic groups or transhumants are present in the site area.

43. Major socio-economic activities at the site include the following:

- Agriculture: The above villages rely mainly on agriculture for their incomes. Cultivation of wheat and barley, and raising of fruit trees (particularly apples) are important.
- Livestock-raising: Surrounding villages maintain some 1,000 head of livestock, including goats, cattle and sheep. Bee-keeping is also widely practiced.
- Hunting: It is estimated that 150 wild pigs were hunted annually on average during the 1990s. Currently, some pig poaching continues to take place.
- Tourism: While accurate figures are not available, several thousand visitors annually come to the site (see below, under "Ongoing Threats.") However, local people do not at present benefit significantly from this visitation.

44. Ongoing threats and baseline scenario: The following are the main threats facing globally significant biodiversity at the site:

- *Fire:* Brutia pine forests are vulnerable to fires due to the effects of drought and human activities. The outermost southern and western borders of the protected area have experienced several fires. In 1989 around 150 ha of forest lands on the western slope of the Qwameeh mountain (western border) was burned. The same year, a large fire (400 ha) broke out on Al kabier mountain. [27] The majority of fires take place in the summer and fall. Fire used to be set for land acquisition. However, after forestlands were demarcated and the forest law was revised, more fires seem to be set unintentionally as a result of burning crop residues. Some deliberate forest fires have also taken place due to animosity between residents and government officials.

- *Tourism*: As a unique forest type in a dry country, Fronloq attracts tourists from all over the country. Tourism activities take place in an unorganized, haphazard way, and pose a significant threat to the protected area. In summer, as many as 1,000 tourists per day may enter the area. The main affected spots are areas along the main road crossing the site. Unplanned and unorganized tourism, together with unrestricted movement of people in the area and an absence of sanitary facilities, make the protected area prone to various kinds of threats. People wandering outside trails cause soil compaction and destroys herbaceous vegetation. Water pollution of streams and springs is also possible. Most importantly, the irresponsible behavior of individuals may cause forest fires, thus jeopardizing the whole forest and its components.

- *Encroachment and land conversion:* Currently, forest clearing is not widely practiced. However, vegetation clearing along the peripheries of agricultural tracts is obvious. People clear vegetation to lessen the effects of shadowing and competition of forest

[27] Abido, M. (2000). *Forest Ecology*. (In Arabic). Damascus University publication. Damascus, Syria; Nahal 1982.

trees with agricultural crops. It should be noted that this phenomenon is localized and practiced on a small scale. Patrols by forest rangers help limit this problem.

- *Roads*: The site contains several openings and roads. The roads function as fire lines (fire breaks). The site had no paved roads at all until 1942 when the Kassab-Lattakia road (western border) was paved. In 1970, the Fronloq-Al-Rabeeha road was paved too. The northern border road was paved in 1988. It should be noted that roads in general affect biodiversity by fragmenting habitats, creating edge effects and through road kills of fauna. Within the site, several unpaved roads have been opened within the last ten years, partly to function as firebreaks. Of course, these roads also increase human access to the core area, with resulting negative impacts on biodiversity.

II. JEBEL ABDUL AZIZ (49,000 HA.)

45. Physical and biological overview: Jebel Abdul Aziz mountain lies in the northeastern corner of Syria (see **Annex E, Map 2**). The site is located within Al-Hasakeh province about 35 km from the provincial capital. The mountain covers 84,050 hectares and has a roughly rectangular shape approximately 85km long and 8-15 km wide. The area is composed of a series of hills and wadis with elevations ranging from 400 to 920 m. The north side is rather steep, and is more heavily eroded than the southern side. There is a plateau in its central part.

46. The climate of Jebel Abdul Aziz is arid Mediterranean of cool variant with a continental dominance. Annual rainfall ranges from 250-300 mm/yr with an average of 279 mm. Extreme cold and frost are quite common. Great daily and seasonal differences in temperature exist in the site.

47. Jebel Abdul Aziz supports remnant forest/steppe associations which represent the nearest living examples to Neolithic sites along the Euphrates some 160 kms to the west where these species were once common. The ecosystem of the site is composed of steppe vegetation with dominance of scattered woody elements. Trees form the upper story of the plant community while other herbaceous species form lower strata. A number of annuals are present too. Herbaceous vegetation grows mainly in springtime due to extreme high temperature in summer and extreme minimum temperature in the winter.

48. Key tree species of global importance include the following:

- *Pistacia khinjuk:* Although isolated populations of *Pistacia khinjuk* may remain in northern Iraq and southeast Turkey, Jebel Abdul Aziz supports a particularly well-conserved and viable population of the species.
- *Pistacia atlantica* is the dominant species in *Pistacietum atlanticae,* which is well developed only in the northern Syrian Desert, where a considerable and viable climax population exists. *P. atlantica* here has wider leaves which may represent a transitional form to *P. mutica.*

49. Some 200 additional floral species are found at the site, seven of which are endemic to Syria. These include *Allium karyateini* Post, *Astragalus chlorostegius* Boiss. et Hausskn., *Astragalus megaloceras* Sam., *Echinops descendens* Hand.-Mazz., *Onobrychis pinnata* (Bertol.) Hand.-Mazz., *Satureia pallaryi* Thieb., *Scutellaria cretacea* Boiss. et Hausskn.

50. The NPA's broader biodiversity significance includes the following aspects of economic importance:

- genetic resources of various fruit trees;

- protein-rich forage species that can be used for rehabilitation of degraded ecosystems elsewhere in Syria and the region;
- medicinal plants, which are present in important populations, and;
- ornamental species adapted to dry zones.

51. Finally, at least 25 species of mammals and 51 species of birds have been recorded at Jebel Abdul Aziz. These include globally threatened species such as the black vulture (*Aegypius monachus*), striped hyaena (*Hyanea hyanea*), goitred gazelle (*Gazella sub-gutturosa*), Houbara bustard (*Chlamydotis undulate*) and little bustard (*Tetrax tetrax)*. These species have been substantially reduced in number.

52. Site management and policy: MAAR's Decision No. 20 of 1993 declared 4,220 ha of the site as an NPA where a viable population of *Pistacia* species is to be found. On 15 November 2002, in the context of the PDF-B preparatory process, the declared area of the NPA was increased over ten-fold to 49,000 ha.[28]

53. The Forestry Department manages the site through its forestry office in Hasakeh. Around 95% of Hasakeh office forest activities are carried out in the mountain. Current site management activities include rehabilitation projects such as protection and reforestation of the main species of pistachios. Afforestation with pine trees is carried out on the periphery of the core area. The site is patrolled to prevent unauthorized grazing. A number of forest guards, some of whom are motorized, are constantly present at the site. A total of approximately 400 workers are employed in nursery, afforestation, patrolling and silvicultural activities on the mountain.

54. Socio-economic context: The estimated total population living in the site area of Jebel Abdul Aziz varies from 12-14,000 depending on the status of the Bedouin migration, which itself is dictated by the latter's need for pasture, rangeland and water, and social and economic circumstances. The mountain and its surroundings host 50 villages, of which 20 are located on the mountain itself. The total population of these villages is estimated at 7,460. Average family size in the mountain area is estimated at 10 persons.

55. The majority of Bedouin families settling in the site belong to the "Bakkara Tribe." This tribe has been living in the mountain area for more than 400 years, and it is distributed in 18 villages within the protected area. Other groups known "Bani Sabaa" belong to the Taye Tribe and are settled in Om Talil village (100 people), and some households belonging to the "Noaem Tribe" are settled in Al-Sayed Hassan village (120 people).

56. The nearest urban center is the city of Hasakeh with a total population of 100,000 people. Tal Tamer town is the other nearby major population center located about 22 Km from the mountain, with a total population of 40,000 people working mainly in agriculture.

57. About 40 percent of the total labor force in the mountain area is involved in livestock production, 20 percent in agriculture production and 20 percent in off-farm activities. Males from 10 to 15 years of age are mainly involved in shepherding, while those between 15 and 55 work in both agriculture and sheep-raising. Women constitute about 60 percent of on-farm labor. It is estimated that the average working period varies between 6 and 9 months per year for men and 8.5 to 11 months for women.

58. Off-farm work includes agricultural and non-agricultural activities. Forestry officials estimate that about 60 percent of the families have had off-farm activities in the last four years to support their incomes. Of that percentage, 50 percent worked only on agricultural activities, while 10 percent had both agricultural and non-agricultural activities (government

[28] MAAR Decision 27/t of 15 November 2002.

employment). Off-farm agricultural activities differ between genders. Women work seasonally in cotton planting and harvesting. Men work mainly in agricultural machinery services in the Khabour River district and its surrounding villages (north of the mountain area).

59. The afforestation project launched by MAAR in 1988 created significant job opportunities in the project area where nearly 400 local workers were employed. Consequently, the rate of unemployment has declined recently to 30 percent. Out of the unemployed people, 70 percent are women and 30 percent are men.

60. MAAR's Law No. 20 has prohibited woodcutting in the mountain site area since 1993. However, women who participate in the silvicultural program are allowed to collect pruning operation residues. Collection of dead and broken branches is permitted for fuel wood uses. Grazing sheep in the reserve area is only allowed in locations where trees are more than ten years of age; grazing by goats is prohibited.

61. Women mainly collect medicinal herbs on the mountain from April through June. Collected materials are consumed in the form of tea and spices and are used for medical purposes. It is estimated that about 10 percent of the population of each village is involved in medicinal herb collection. The estimated average income generated from marketing the medicinal herbs in Al-Hasakeh city is about 60-70 SP/day (2000 SP/month). Truffles are harvested in certain years during March and April.

62. *Pistacia atlantica* and *P. khinjuk* seeds are collected during October and November. Other potential uses of *Pistacia atlantica* seeds include the extraction of oil and the extraction of gums from the terebinth. An individual can collect between 15-20 Kg/yr of pistachio seeds. It is estimated that the total production of seeds in the mountain may reach up to 10,000 Kg in good fruiting years.

63. Ongoing threats and baseline scenario: The following factors would continue to threaten globally significant and other biodiversity at the site under the baseline scenario:

- *Overgrazing:* People in and around the protected area depend principally on sheep and goat raising and consequently on mountain resources of trees and rangeland for their sustenance. Over the years, this dependence has been relatively well regulated through a customary management system (Hema), which is nowadays considerably weakened. High grazing pressure, unless properly managed, is an important threatening factor that reduces the natural regeneration of species. The leaves of the species are used as fodder for sheep and goats as supplementary feed in dry season. The land tenure policy and management of rangelands in the site tends to follow ad-hoc strict protection measures, and ignore the importance of viable customary natural resource management systems. This is a vital factor in land degradation. In wet years, the cultivation of grazing land for crop production and expanding sheep population leads to increasing pressure on the site as well as constraining livestock production.
- *Hunting*: Hunting appears to be a relatively minor problem in the area and can easily be controlled since hunters are basically outsiders. However, many individuals are said to come for hunting at the area during certain seasons in spite of its being officially prohibited.
- *Tourism*: Local tourism is minimal in the protected area. However, major recreation sites are down in the plains and particularly nearby the deer fenced area and afforestation sites where people can stay underneath canopies of trees. Forest fires in the plantations and littering are always a problem. Other effects of unregulated tourism include soil compaction and damage to trees.
- *Encroachment and land conversion*: Currently, no land encroachment or conversion is taking place. However, this danger is ever present due to poverty.

III. ABOU-QUBIES (C. 5,000 HA.)

64. Physical and biological overview: The Abou-Qubies protected area is located at the top and eastern slopes of the coastal mountain ridges. The hills and agricultural lands of Abou-Qubies and Hir Al-Musiel bound the site to the east, while in the west the site is bordered by the agricultural lands of Khirbet Al-Sindyane and Btamoush (see **Annex E, Map 3**). The coastal mountains in general have a sub-humid to humid Mediterranean climate with cool to cold variant. The elevation of the site ranges from 540 to nearly 1200m above mean sea level, with elevation decreasing gradually from north to south.

65. The site ecosystem is composed of a mixture of evergreen sclerophyllous forests and deciduous forests. These may be characterized as follows:

- *Evergreen forests*: Basic components of the evergreen forests are *Quercus calliprinos* (umbrella species), along with various secondary woody species such as *Q. infectoria, Arbutus andrachne, Pistacia palaestina, Phillyrea media, Laurus nobilis, Cotinus coggyra,* etc. These forests form a climax community more than 4m in height. They are found on shallow soils and drier sites, mainly on southern and eastern slopes. Once disturbed (grazing, cutting, clearing, etc.), retrogression succession starts and leads to secondary plant communities. These secondary communities are composed of so-called 'maqui' of different degraded stages.
- *Deciduous forests*: Deciduous forests of the site are concentrated on deep soils/rock fissures at elevations greater than 850m on northern and western slopes where moisture supports lush vegetation growth. Basic woody components of these forests include *Quercus cerris* subsp. *pseudocerris, Q. infectoria, Ostrya carpinifolia, Sorbus sp., Pyrus Syriaca* and many others. Evergreen elements are 40% or less by percentage.

66. The protected area contains various elements of Mediterranean flora and some Irano-Turanian elements. Few species occur of the hot variant of Mediterranean bio-climate zones, and most of these are threatened. *Ceratonia siliqua, Olea europea* and *Myrtus communis* are major representatives of this category. Species found in the Eu-Mediterranean zone are: *Pistacia palaestina (= P. Mutica), Quercus calliprinos, Laurus nobilis, Spartium junceum, Acer syriacum* and *Juniperus oxycedrus.*

67. Major tree species found in the mountain bio-climatic zone of the site are: *Quercus calliprinos, Carpinus orientalis, Fraxinus ornus, Q. pseudocerris.* Natural and man-made Brutia pine stands are also present in the site.

68. The importance of Abou Qubies protected area comes from its geological, geo-morphological and biological structures. The ecosystem in the area is considered unique in its assemblages of species, which create habitats sheltering various forms of fauna. Due to its micro-climatic conditions and favorable climate, the site is rich in species. The number of flora species in the protected area is estimated at 350 with perhaps six endemic species. The site may support as many as 25 rare or endangered species, though these figures are somewhat uncertain (see **Annex H**).

69. Important resident bird species recorded at the site include: Syrian serin (*Serinus syriacus*), black vulture (*Aegypius monachus*), Hamerkop (*Scopus umbretta*), black francolin (*Francolinus francolinus*), golden eagle (*Aquila chrysaetos*), lesser kestrel *(Falco naumanni*) and Hoopoe (*Upupa epos*). Recorded mammals, some of which have rarely been seen in recent years, include the red fox (*Vulpes vulpes syriacus*), wild cat (*Felis catus*), wild boar *(Sus scrofa*), and striped hyaena (*Hyaena hyaena*).

70. Site management and policy: Abou-Qubies was declared a forest protected area by MAAR Ministerial decision 17/T of 18 May 1999. The initial total area targeted by this decision was 11,000 ha. However, the national team survey concluded that the area actually designated is only 5,000 ha. The previous decision did not specify the type of the protected area. However, it clearly banned all activities including trespassing over the site and imposed heavy penalties for violations.

71. MAAR's central forestry bureau manages the site through its forestry office in Al-Ghab province. In addition, the site's northwestern and southwestern borders are administered and monitored by Lattakia Office of Forestry. There are no fire towers in the protected area; however, the site is monitored from outside fire towers and through on-foot patrolling. There is one forest ranger station (Tamazeh forest ranger station) near the northern border as well as a central forest fire station nearby servicing all the forests of Al-Ghab. A number of forest guards, some of whom are motorized, are on daily duty at the site. No management practices are currently carried out at the site except patrolling.

72. Socio-economic context: The total population living in and around the site is estimated at 5,100. These are divided amongst nine villages: three are entirely located within the site boundaries, three border the site and three are located on the periphery, yet outside of the site. In addition, there are six towns located within fifteen kilometers or so of the site, with a combined population of some 45,000 people. Finally, three main urban centers – Hama, Tartous and Lattakia – are all found within 55-85 kilometers distance.

73. Nearly 50-60 percent of the households living in the above nine villages have benefited from land reform in the nearby Ghab plain. Therefore, seasonal migration takes place from all of the villages to the Ghab plain where wheat, barley, cotton, sugar beets and maize are grown. About 10 percent of the population of each village appears to migrate to urban centers, mainly Damascus, compared to about 7 percent who migrate to Lebanon as workers. Major reasons reported for out-migration include small size of land holdings, land fragmentation and its remoteness, population increases and low incomes.

74. Nearly 95 percent of the total labor force in the site area are involved in on-farm activities, of which 80 percent are working in plant production mainly horticulture, and 20 percent in livestock husbandry, mainly goat raising. Boys mainly herd goats, and in a few cases the families hire labor for shepherding the flocks.

75. Households generate their incomes from on-farm (70%) and off farm activities (30%). Horticulture production generates the highest contribution of on-farm income, which accounts for 65 percent compared to about 5 percent from cereal production and about 30 percent from livestock production. The estimated annual average income ranges from 75-100,000 Syrian Pounds. Five percent of the total labor force is involved in off-farm activities, e.g., forest guards, rangers, drivers, forestry fireman, etc.

76. Off-farm income generates about 30 percent of the total family income. Off-farm work include agricultural and non-agricultural activities. Government employees generate an average annual income of 36,000 SP, while landless workers generate about 40,000 SP per year to support their families. Unemployment rate is 30 percent and is considered relatively high in the site, out of which 10 percent for men and 20 percent for women.

77. Ongoing threats and baseline scenario: These include the following:

- *Overgrazing*: People in the protected area depend principally on goat raising and consequently on forest resources for their sustenance. Forest tracts are used primarily as rangelands and as a source of fuelwood. Goat grazing is considered a serious threat to the protected area since goats are raised with uncontrolled grazing practices. In

addition, fodder species are cut and hauled out of the area to feed yard-raised sheep and cows. Overgrazing threatens various plant communities, especially medicinal herbs and fodder species.

- *Woodcutting and charcoal making*: Woodcutting and charcoal making is second to grazing as a threat. Selective woodcutting of certain species – mainly oaks – destroys niches and habitats for lower strata and disturbs the ecological balance within soil micro-flora. The site has not yet been affected on a large scale by these activities; however, they remain a risk for the future unless existing laws are enforced and alternatives are found. Charcoal making is popular and represents an important main or supplemental source of income.
- *Hunting*: Illegal hunting (e.g., illicit baby deer collecting) is widely practiced in the area. Quills, wild pigs and other carnivores like wolves are illicitly hunted.
- *Fire*: Wildfires and use of fire to burn agricultural residues at the end of summer is causing considerable loss of biodiversity and destruction of forest ecosystems.
- *Encroachment and land conversion*: The area has a rough topography with extensive rock outcrops and shallow soils. This in turn make water scarce (despite heavy rainfall and snow) and people have to depend on some type of water collecting system so they can use it domestically and for watering their livestock and tobacco fields. Agricultural tracts are found basically on dolines and in depressions where water is stored in relatively deep soil profiles. These spots have been farmed and utilized in cereal production (mainly wheat) for hundreds of years. Some of them are currently abandoned for economic reasons. Abandoned areas were invaded once again with natural vegetation. Apparently there are no new land encroachments since forest demarcation was done a few years ago. However, one cannot rule out forest clearings in the vicinity of villages and on the peripheries of agricultural lands.

B. Overview assessment

78. The following matrix summarizes the main threats facing the project sites, together with an indication of the degree of severity:

Table 2: Threats summary

Site Nature of threat	Al Fronloq	Jebel Abdul Aziz	Abu Qbais
Fire	***		
Unplanned tourism	***	*	
Hunting		*	***
Encroachment / land conversion	*	*	**
Woodcutting and charcoal making			**
Overgrazing		***	***
Roads	***		

Note - * indicates the degree of severity, with three stars *** being the most severe. No * indicates the threat is not present in any significant way at the site.

79. A problem tree presented in **Annex F** provides a generalized picture of the threats and causes relationships facing biodiversity within and around protected areas in Syria. Taken as a whole, the circumstances at the project sites exemplify an overall baseline situation wherein Syria's globally and nationally significant biodiversity is not being adequately conserved through a well-functioning system of protected areas. A wide range of direct threats – including hunting, forest fires, overgrazing, poorly conceived afforestation programs, unplanned tourism, uncontrolled removal of firewood, uncontrolled harvesting of medicinal plants and misuse of agro-chemicals – are continuing to have a substantial impact on areas which are only nominally 'protected.'

The underlying causes of these threats, and associated barriers, have been grouped into the following categories:

- *Existing policy, legal and institutional structures, particularly those related to protected areas management, do not generate effective support for biodiversity conservation or sustainable use management*: MAAR management policy for PAs has been based directly on its responsibilities arising out of the 1994 Forestry Law as well as guidance and funding provided through Syria's Higher Council on Afforestation. However, the Law was not written, and the Council did not operate, in a manner that took biodiversity considerations into account. Evidence of this is found in various actions undertaken in the PAs, such as excessive road construction and mono-cultural afforestation, as well as in the near total absence of other, potentially beneficial types of actions, such as the preparation of management plans, environmental monitoring, etc. Indeed, the focus of the approach seems largely to have been on planting trees, with the broader ecosystem given scant attention. This failure seems due in large part to very limited awareness and capacities within Syria for dealing with biodiversity conservation issues, particularly in 1994 when the Forestry Law was drafted. A second set of causes has to do with inter-ministerial competition for authority and resources between MAAR and MSEA. Thus, MSEA, with its biodiversity concerns, has rightly or wrongly been perceived as trying to wrest responsibility for MPAs away from MAAR. MAAR's reaction has been to try to push MSEA away, yet without taking on board the concepts being promoted by MSEA. Indeed, development of a constructive relationship between these two ministries in the area of PA management has been a key challenge of the PDF-B phase and one for which a good deal of progress may be reported.
- *Protected area management systems at individual PAs are poorly structured. PA managers have limited capacity to plan and implement systems and actions based on principles of sustainable use or biodiversity conservation, including those related to the concerns and priorities of local people*: The actual degree of protection at existing PAs is not high, nor has biodiversity conservation been an explicit or recognized management goal. None of the sites have well developed set of systems, structures, policies, legal status or actions to support biodiversity conservation and protected area management. Management efforts at the nature reserves have been administered by MAAR's Forest and Afforestation Directorate and have consisted mainly of afforestation programs. These involve mono-specific plantation of *Pinus halepensis*, *Pinus pineae*, and various varieties of almonds, olives and oaks, with little or no consideration given to biodiversity conservation. MAAR has over 3,000 permanent staff members who are posted mostly in the Governorates. However, none of these staff has had the minimum training or experience in PA management or biodiversity conservation.
- *Local people living in and around PAs have few alternatives to unsustainable resource use and an adversarial relationship with PA managers*: Surveys conducted by a team of national consultants working during the PDF-B stage made frequent contact with local people living within and immediately surrounding the three demonstration sites. The findings of these surveys indicated varying levels of tension – from moderate to severe – between forest department personnel and local villagers. Villagers in general did not feel themselves to have been adequately consulted or involved in decisions related to resources that in some cases they had enjoyed access to for generations. Thus, Syria lacks good examples of sustainable alternatives supporting the livelihoods of people and communities living within, or in the buffer zone of, protected areas. Under the baseline scenario, gradual improvement might have been expected in these relationships, as communities became accustomed to recently enacted restrictions on access to resources, although increasing population pressures in project site areas would have partially mitigated these positive impacts.

ALTERNATIVE COURSE OF ACTION

80. Project strategy: The **development objective**, to which this project contributes, is to ensure that Syria's globally and nationally significant biodiversity is sustainably used by, and provides benefits to, its current generation while being conserved for the benefit of present and future generations worldwide.

81. The **project objective**, which the project is committed to achieving fully, is to demonstrate practical methods of protected area management that effectively conserve biodiversity and protect the interests of local communities, while supporting the consolidation of an enabling environment that will facilitate replication and effective PA management throughout the country.

82. In order to achieve the above objective, the project will produce three closely related outcomes, which are described below, together with the Activity Areas (AAs), which constitute them. The overall strategy of these outcomes, or the project's basic integrating logic, may be summarized as follows:

i. With co-ordinating support from MAAR's Department of Biodiversity and Protected Area Management (MAAR-DBPAM), monitoring from MSEA's Directorate of Biodiversity and Protected Areas (MSEA-DBPA) (capacities of both units strengthened under Outcome 1), and direct implementation support from provincial and local Forestry Department units (capacities strengthened under Outcome 2), PA management techniques will be developed and implemented at three demonstration sites (Outcome 2). The development of broader national-level processes (Outcome 1) will move in parallel to, while being informed by, this site-specific work.
ii. With co-financing from UNDP, co-ordinating support from MAAR-DBPAM and direct implementation support from provincial and local units of the Forestry Department, model approaches to alternative sustainable livelihoods and community resource management will be developed and implemented (Outcome 3).
iii. Methodologies and processes developed and tested at the three demonstration sites (Outcomes 2 & 3) will be assessed and lessons learned will be derived (Outcome 1). These will feed back into and help to refine the operating procedures of the relevant central and regional-level co-ordinating and operational units. This process will facilitate the replication of site-based results by helping to rationalize the basic PA-related administrative and managerial processes followed by governmental units responsible for PA management throughout the country.

83. Outcome 1 - Policies and institutional systems allow for the wise selection and effective operation of protected areas to conserve globally significant biodiversity (GEF - $1.6 million; Others - $0.5 million): The baseline assessment presented in the previous section has demonstrated that Syria has yet to develop a well-functioning and integrated system for PA management. Activities grouped under this outcome are designed to facilitate the creation of such a system. The capacities of two key institutional actors, MAAR and MSEA, to implement existing and possibly new PA-related functional responsibilities under Syrian law will be substantially increased. Importantly, specific and detailed processes of inter-sectoral co-operation will be developed in an area which heretofore has served mainly as a source of inter-sectoral conflict. These processes will range across all phases of the PA management process, from identification and selection of PAs to management and monitoring. Finally, capacities will be strengthened to ensure linkages between the PA management system and processes of biodiversity management in the broader landscape, thus ensuring that PAs not only function well individually, but also contribute to national-level objectives for biodiversity conservation.

84. A key underlying objective of Outcome 1 is to facilitate the extension of support to, and/or oversight of, individual PAs throughout Syria. It is after all at site level that tangible biodiversity benefits will accrue. Thus, this outcome will remain closely linked to Outcomes 2 and 3, which will operate at the level of demonstration sites.

85. Activity areas designed to achieve the above outcome include the following:

AA-1.1: INSTITUTIONAL CAPACITY BUILDING FOR PA MANAGEMENT: Within the context of the PDF-B, Government has taken important steps towards establishing and consolidating national-level units for PA management and biodiversity conservation. These include MAAR's newly created Department of Biodiversity and Protected Area Management (MAAR-DBPAM) and MSEA's Directorate of Biodiversity and Protected Areas (MSEA-DBPA). GEF institutional support will complement ongoing Government efforts to ensure the effective functioning of these units. This AA will ensure the rationalization of unit job descriptions within and between the key ministries, ensuring a minimum of either overlaps or gaps among the different units. This process will also involve reviewing the relationships and lines of authority within each ministry, e.g., between MAAR-DBPAM and the provincial-level forestry offices and between MSEA-DBPA and its provincial offices. The goal is a set of streamlined, yet effective, national institutional arrangements for PA management. Once agreed, these arrangements should be codified formally, for example in a Memorandum of Understanding among relevant agencies or perhaps another formal policy agreement on institutional set-up. Operational processes such as planning and financial management will be supported through mechanisms such as training (see AA-1.2), support from national and international experts and provision of necessary equipment.

AA-1.2: HUMAN RESOURCE DEVELOPMENT: A critical barrier identified during the PDF-B process is the limited knowledge and skills related to biodiversity among managers and officials within national-level institutions responsible for PA management. This is a particularly urgent issue within MAAR which, despite having responsibility for managing numerous PAs, has few personnel with even limited training in biodiversity conservation. This AA will remove this barrier beginning with an effort to improve job descriptions and job profiling for staff positions within these units—the units themselves having already had their responsibilities clarified under AA-1.1. This step will include the development and implementation of a training programme to upgrade biodiversity- and PA-management skills among relevant staff. Together, Activity Areas 1.1 and 1.2 will ensure that required tasks for PA management at national level are properly allocated, first among relevant agencies and units, and second among individual, qualified professional and support staff, who in turn will have received the necessary skills upgrading needed to accomplish their tasks.

AA-1.3 SUPPORT FOR CARRYING OUT PA-RELATED CO-ORDINATION RESPONSIBILITIES—MAAR: This AA involves the provision of technical support to agreed PA-related co-ordination responsibilities of MAAR. Pilot implementation within many of the identified areas will be undertaken at the project's demonstration sites (see Outcomes 2 & 3 below). Specific responsibilities and tasks are expected to include the following:

i. Data and information: Develop and implement methodologies and guidelines for baseline biodiversity information gathering, assessments and ongoing monitoring / inspection of PAs, including monitoring of socio-economic aspects.
ii. Investment planning: Improve capacities for investment planning related to PAs.
iii. New PA identification/management to enhance PA coverage in Syria: Develop mechanisms for replicating project success at new PAs and extend protected area coverage by identifying and prioritizing potential new protected areas. These will

require a high level of awareness and advocacy for PAs, and will include ecological surveys and social impact assessments to be undertaken prior to PA establishment.

iv. Development of alternatives to mono-species afforestation: The Forestry Department has recognized the problems created by earlier afforestation programs. This activity will focus on developing more biodiversity-friendly remediation efforts and will include development and dissemination of a training manual on afforestation.

v. Development of new propagation techniques: The will include extension of techniques for threatened plant species not commonly propagated in the past.

vi. Wildlife conservation and management: Develop and implement mechanisms to ensure that national-level wildlife conservation objectives are incorporated into site management planning.

vii. Flora conservation: Develop and implement national-level and site-specific strategies for conservation and regeneration of rare and threatened forest and rangelands species.

viii. Reporting: Standardize reporting by provincial-level Forest Departments concerning PAs within their jurisdiction. Prepare and disseminate a single Annual Report covering MAAR-operated PAs.

AA-1.4 SUPPORT FOR CARRYING OUT PA-RELATED CO-ORDINATION RESPONSIBILITIES—MSEA: Syria's network of protected areas can and should play an integral part in a 'bio-regional approach' to biodiversity management. Such an approach would consider factors such as the role and adequacy of existing PAs in achieving national-level conservation objectives, the importance of corridors between PAs and the need for conservation actions within the broader landscape. A macro-level overview of this type is within the mandate of MSEA and increasing capacities in this area will form an element of the co-operation taking place under this AA, which involves the provision of technical support to agreed PA-related co-ordination responsibilities of MSEA. Pilot implementation within many of the areas identified will be undertaken at the project's demonstration sites (see Outcome 2 below). Specific responsibilities and tasks are expected to include the following:

i. Inter-sectoral co-ordination: Strengthen implementation of all legally mandated inter-sectoral co-ordination responsibilities related to PAs. These will include, *inter alia*, co-ordination of national-level process of PA identification and selection.

ii. Monitoring / Data and information management: Ensure that data and information flows from MAAR-managed and other PAs flow into a centralized data management system capable of monitoring biodiversity change within both PAs and the broader landscape, particularly within corridors between PAs. These should include both ecological information as well as information on threats and threat reduction, particularly at demonstration sites.

iii. Policy & programme analysis: Based on information and data collected at PA and landscape levels, produce periodic assessments of the efficacy of the national system for PA management and proposals for its improvement. These will constitute lessons learned, beginning with experience at demonstration sites.

iv. Environmental impact assessment: Assess the existing system for Environmental Impact Assessment (EIA) as it relates to PAs and propose necessary revisions.

v. New PA identification: Develop rules and requirements for establishing and monitoring PAs, including financial and budgetary, ecological assessments (studies) as a tool for prioritization, (re)-definition of objective process for identifying, nominating and approving, social impact assessment prior to establishment.

vi. Public awareness: Raise public awareness concerning the role of protected areas in biodiversity conservation in Syria. This should include preparation and wide dissemination of awareness materials including brochures, posters, a 'user-friendly' annual report, etc.

86. Outcome 2 – Effective techniques for PA management and biodiversity conservation have been demonstrated and are available for replication (GEF - $1.6 million; Others - $1.6 million): Activities being planned under Outcome 2 will complement Outcome 1 efforts by directly addressing site-level management practices at the three project demonstration sites. Outcome 2 will provide an on-the-ground demonstration of the PA system's functioning at these three critical sites and in so doing will create practical models of PA management and operations. This will include the introduction of common PA management techniques such as zoning, management planning, community relations, etc. It will also involve a restructuring of planned baseline activities, e.g., afforestation, to better reflect biodiversity conservation objectives.

87. Outcome 2 will be important both for the tangible conservation benefits that it provides at the three sites as well as for the demonstration effects for the overall PA system. Careful ecological and process monitoring, followed by programme analysis and awareness-raising (see Outcome 1), will ensure that the benefits of more effective management at the sites are identified and disseminated.

88. Activity areas designed to achieve the above outcome include the following:

AA 2.1 - TRAINING OF LOCAL CADRES AND MANAGERS IN ECOSYSTEM PLANNING AND MANAGEMENT: The baseline assessment has pointed to an important barrier in the form of provincial and local-level staff and managers with little if any knowledge of ecosystem-based planning and management. Thus, like Outcome 1, Outcome 2 will begin with training and human resource development. Target groups for training among MAAR's more than 3,000 employees will include provincial- and district-level managers and staff responsible for demonstration PAs. These will include key staff within Forestry Department offices in Al-Hasakeh (for Jebel Abdul Aziz), in Lattakia and at sub-district offices in Qastal Mouaf and Al-Rabeeha (for Al-Fronloq), and in Al-Ghab (for Abou-Qubies). Training will include site-based team-building exercises covering a broad range of staff as well as across-site modules appropriate for different classifications of staff (forest rangers, supervisors, etc.). In addition to ecosystem management, staff will receive training in such areas as management planning, data collection / management and approaches to community relations and outreach.

AA 2.2 - IMPLEMENT BIODIVERSITY MONITORING PROGRAMMES: Monitoring of biodiversity and of natural resources in general is an important – yet thus far largely ignored within the Syrian context – component of PA management. This AA will build on work undertaken during the PDF-B in order to produce baseline assessments of floral and faunal diversity and abundance, along with a follow-up monitoring programme. Site-based officials will work closely with MAAR/DBPAM staff to tailor general monitoring guidelines (see AA 1.3.i) to the specific needs of each site. The monitoring programmes will have the following objectives:

i. providing managers with an improved, geo-referenced picture of biologically critical, or core, areas within each of the PAs, which will become a necessary element for zoning arrangements (see 2.3 below).
ii. providing a useful baseline from which subsequent ecological changes can be monitored.
iii. linking into a national-level database and GIS system for consolidating site-specific data and providing feedback to site managers (see AA 1.3.i).
iv. providing a more detailed sense of the intensity and location of threats facing biodiversity within the PAs, which will be essential for formulating

threat-reduction strategies to be incorporated into the site management plans (see AA 2.3) and strategies for community outreach (see Outcome 3).

AA 2.3- DEVELOP SITE MANAGEMENT PLANS: In addition to strengthened human resources and enhanced data and information flows, improved management at demonstration sites will require effective systems for integrated management planning. Site managers, with support from Damascus-based experts, need to develop medium–term plans for their sites, encompassing biodiversity conservation and remediation goals, and practical strategies for achieving these. This process will begin with a review and assessment of current management practices and planning at project sites, including policies of restoration using heavy vehicles, afforestation, etc., to assess the suitability and impacts on biodiversity of these measures. This will be followed by development of 5-year management plans for each site, to include issues such as threat removal, sustainable use protocols, development of functional zoning schemes, revisions to job profiles and management structures, proposals for pilot ecological rehabilitation measures and investment plans. It will be important to ensure the consultation and participation of a broad range of stakeholders within this planning process.

AA 2.4- IMPLEMENTATION OF SITE MANAGEMENT PLANS: Under this AA, concrete measures will be taken for the mitigation and where possible removal, of remaining threats to biodiversity, all based on an agreed management plan (see AA 2.3), as well as the further strengthening of PA management capacities.

89. Outcome 3 - Sustainable use of natural resources in and around protected areas has been demonstrated (GEF-$0.10 million; Others-$1.3 million): The baseline assessment has identified various local communities living in and around protected areas as a key target group for the project. Their proximity to the PAs (indeed, two of the demonstration sites have villages located as 'islands' within their boundaries) is one reason for their significance. Their intimate knowledge of the forests, where they have grazed herds, collected forest products and hunted, sometimes for generations, is another. Both of these factors have frequently brought local people into conflict with local Forest Department officials in the past. The goal of the present planned outcome is a transformation of the role of local communities from sources of threat to partners in conservation.

90. Activity areas designed to achieve the above outcome are as follows:

AA 3.1- ASSESSMENT OF LOCAL COMMUNITY RELATIONSHIPS WITH DEMONSTRATION SITES AND SITE RESOURCES: Work undertaken during the PDF-B phase has helped to increase knowledge concerning local community – PA interactions. Legal and illegal uses such hunting, grazing, wood collecting, etc., have been preliminarily assessed. Under the present full project, a comprehensive, participatory socio-economic assessment will be made of each site area. This will include assessing the extent and nature of local community dependence on site resources, both directly (fuel, water, food, medicinal or income-generating resources) and indirectly (existence values, environmental values including watershed and soil stability, etc.). These assessments will also seek to quantify and prioritize various anthropogenic threats to the sites, e.g., grazing, agriculture and agrochemical use, hunting, wood-chopping, charcoal-making, etc. They will also estimate the extent to which these anthropogenic threats affect biodiversity in, and sustainable use of, the sites and the degree to which these threats need to be reduced or eliminated to achieve sustainability. Finally, local knowledge of resources, e.g, medicinal plant properties, will be catalogued through these assessments.

AA 3.2- SITE MANAGEMENT PLANS AND OPERATIONAL ACTIONS ADDRESS THREATS ARISING FROM LOCAL COMMUNITY ACTIVITIES IN AND AROUND SITE AREAS: Information collected under AA 3.1 will subsequently be incorporated into site management information (GIS) systems and integrated management plans so that they may be treated as integral factors in the decision-making process. This AA, together with AA 3.1, will be co-ordinated and supported for all sites by MAAR-DBPAM (see AA 1.3.i).

AA 3.3- ALTERNATIVE LIVELIHOOD ACTIVITIES AND OPPORTUNITIES ARE IDENTIFIED AND MADE AVAILABLE TO LOCAL COMMUNITIES WHERE REQUIRED: This AA will be closely linked to the results and conclusions of AA 3.1. It will also build on proposals developed through a participatory consultation process undertaken during the PDF-B (see **Annex G**), which identified a number of possible sustainable and/or alternative livelihoods both within and outside of the traditional livestock/agricultural sector – e.g., techniques for sustainable use of PA resources, handicrafts production, etc. During the full project, a series of briefings and discussions will be held with local communities to explain how their activities affect the sustainability of the sites, and the need to find alternative sustainable livelihood activities to substitute for existing unsustainable activities. Based on these discussions, potential alternative livelihood activities will be further identified/tuned. This process of identification should closely involve local communities, and identified alternatives should constitute acceptable substitutes for existing income and resource sources. Potential alternatives should be researched and pilot-tested to identify those sustainable livelihood activities that are most suitable for local socio-economic and ecological conditions. Finally, once suitable alternative livelihood activities have been identified and accepted by local communities, the AA will provide technical and financial support for the implementation of these alternatives in all affected communities. The latter will be supported through co-financing support from UNDP Syria.

91. End of project situation: At the end of this project, the following changes are expected:

- Local cadres are trained and qualified in sustainable planning and management of ecosystems to ensure conservation of significant biodiversity resources.
- Managers and decision-makers are provided with sufficient information on the natural systems at project sites to ensure informed decision-making and policy-setting.
- Management of project sites is being undertaken according to comprehensive, institutionalized management plans incorporating site zoning, institutional structures and proactive management of threats.
- Project sites are provided with improved infrastructure and facilities to ensure effective management.
- Biodiversity conservation and sustainable use priorities are incorporated into Government developmental planning and operational decision-making, through the review and improvement of existing legal and regulatory structures.
- Site managers at protected areas fully understand and take into account local community relationships with and dependence on the natural resources of the sites.
- Anthropogenic threats arising from local community resource use in site areas is fully understood and addressed in site management plans and operational guidelines.
- Anthropogenic threats to project sites are eliminated or reduced to sustainable levels through the provision of alternative livelihood resources and income-generating activities.

92. Project beneficiaries:

Key stakeholders who will benefit from the project directly or indirectly are:

Local communities and local-level village institutions:

- Local communities will be empowered to develop sustainable livelihood resources and resource use patterns that provide improved incomes and standards of living, while ensuring the sustainable management and long-term conservation of Protected Area resources in their areas.
- Nomadic tribes and communities will be assisted to develop sustainable fodder resources for their livestock herds, while reducing grazing impacts on the Protected Areas to sustainable levels.
- Women, youth and other minority voices in village communities will be empowered through training and capacity-building activities to develop and diversify income and livelihood sources, and to achieve a more participatory voice in village leadership and decision-making.

Government staff and agencies:

- Staff of DBPAM-MAAR and MSEA-DBPA will benefit from intensive training and capacity-building as well as improved resources to undertake sustainable management of Protected Areas according to prevailing global best-practices.
- Policy- and decision-makers will benefit from capacity-building, and from improvements to institutional and legislative structures which will facilitate more effective and efficient decision-making and policy-setting in pursuit of sustainable management goals.

The General Public, Scientific and other institutions:

- The general public will benefit from awareness-raising and public education activities, which will result in greater understanding of, and appreciation for, the importance of conserving biodiversity through PAs.
- Scientific and academic bodies will benefit from consulting and training opportunities, as well as enhanced exchanges with the global biodiversity conservation community.

93. Eligibility for GEF financing: The Government of Syria ratified the Convention on Biological Diversity on 10 December 1995 and notified the GEF of its participation in the restructured GEF. The project also fulfils the objectives of the Convention on Biological Diversity by supporting *in situ* conservation (Article 18), ensuring the equitable distribution of benefits derived from biodiversity management (Articles 10, 16 and 18), monitoring (Article 7), awareness raising (Article 13), and institutional reinforcement (Article 12).

94. The project is fully consistent with the provisions of Operational Programme 1, Arid and Semi-arid ecosystems. Its focus is on conservation and sustainable use of forest and dryland ecosystems. Major outputs include threat removal, sectoral integration, sustainable use and institutional strengthening. Activities undertaken by the project include many of those described as 'typical' by the OP. Finally, public involvement has been, and will continue to be, a hallmark of the approach taken by the project.

95. While the GEF is still in the process of defining its emerging directions in biodiversity under GEF-3, the project has been designed with the latest draft report on this subject in mind. In particular, the Strategic Priority I will be supported, by **Catalysing sustainability for protected areas.** The project may be described as having a dual purpose in this respect. First, it focuses on strengthening conservation at what have been determined to be the three most globally significant PAs in Syria. At this level, *local communities and community-based*

organizations will play an important role in project implementation, as well as benefiting from the development of alternative sustainable livelihoods. Second, and perhaps more importantly, the project takes a programmatic approach to developing the long-term capacity and sustainability of the national PA system, with emphasis on institutional and individual capacities. This dual approach has been considered the most effective one under present circumstances.

96. Complementarity and co-ordination with other projects within the region: The present project has been designed to work in a complementary manner with other relevant GEF projects. Two projects in particular bear mentioning:

- The World Bank-GEF MSP project at Arz/El Shouh protected area near Slenfe (see also paras. 24-25 and 121) has demonstrated a clear challenge to be overcome related to institutional co-ordination between MAAR and MSEA. However, in addition to learning from the problems faced by that project, it is important to work together with the project, which has recently been extended until 30 September 2004. Planned co-operation aimed at benefiting both projects will include direct exchange of information between the respective NPDs and planning for possible joint training exercises, etc.[29] In addition, each NPD should be given observer status on the other project's Project Steering Committee (PSC).
- UNDP-GEF's regional project for Conservation and Sustainable Use of Dryland Agro-Biodiversity of the Fertile Crescent was approved in October 1998. The project has promoted conservation of agro-biodiversity through increased use of wild fruit trees in reforestation, while providing a variety of training and public awareness-raising activities. Some work has also been done in the area of policy formulation. The present project has already begun co-ordination during the PDF-B phase, with the Agro-biodiversity project's CTA having participated in the PDF-B's Project Development Workshop. Ties between the projects will be re-invigorated early on through a mission by the National Project Director and National Project Managers to the Agro-biodiversity project's PCU.

97. In addition to the above GEF projects, the project will maintain contact with the UNDP/UNEP-supported Biodiversity Planning Support Programme for the Arab States and its database on biodiversity expertise in the Arab States region.

98. Link to UNDP CCF: The first Country Cooperation Framework (CCF) for Syria was approved by the Executive Board at its third regular session 1997 for four years from 1 January 1997 to 31 December 2000. UNDP is assisting the Government of Syria to meet its international commitments under the various international environmental conventions through technical assistance in the form of Enabling Activities. The UNDP office in Damascus also supports the Government of Syria's efforts to engineer the active participation of civil society in the design, execution, and evaluation of environmental programs. This project incorporates both aforementioned support elements, and UNDP will play a key role in brokering agreements between stakeholders, and ensuring that institutional agreements are honoured.

99. Implementation and execution arrangements: Project implementation will follow national execution arrangements and will be undertaken by the two main participating government ministries, MSEA and MAAR, with the support of a Project Co-ordination Unit (PCU) under

[29] Training and capacity building under the UNDP-GEF project will build on and complement support being provided through the WB/GEF project. However, as a full-size project with a larger training component, it will provide greater depth and breadth of support than that being provided under the WB-GEF project. At local and provincial levels, training will benefit MSEA and MAAR officials who were not involved with the WB-GEF project, which did not work in their provinces. At national level, the UNDP-GEF project will further build capacity among officials who may have already received some support from WB-GEF. Careful co-ordination between the projects will ensure that there is no overlap in areas covered by the two projects' training components

the overall guidance-oversight of UNDP. Prior to the project inception mission, each ministry will appoint its National Project Manager (NPM), who will be responsible for co-ordinating the implementation of project activities within his/her Ministry. Each NPM will also be responsible to ensure effective co-ordination and co-operation with the counterpart NPM/Ministry, as well as with the PCU. It is preferable that the NPM either be the individual in charge of the main implementing unit within each Ministry (i.e., NBPAM and NBPA) or that individual's direct supervisor.

100. The PCU will be led by a National Project Director (NPD), who will be selected by a panel established for this purpose, with participation by MAAR, MSEA and UNDP Syria. Each party will have veto power within this panel, meaning that the NPD, to be selected, must have the support of both Ministries and UNDP. Once selected, the NPD, with the technical and contract-issuing support of UNDP, will recruit PCU staff members, including a Deputy NPD (who should be someone of unquestioned technical abilities) along with two support staff.

101. Responsibilities of the PCU will include the following:[30]

- to provide overall project co-ordination, while acting as an independent and unbiased guarantor of co-operation and information exchange between the ministries;
- to convene quarterly Project Implementation Meetings (PIMs), involving the NPMs, NBPAM and NBPA directors, together with PCU staff. These meetings will review progress in implementing project workplans and will attempt to resolve any ongoing difficulties in inter-ministerial co-operation;
- to ensure, together with the executing agency and UNDP, that specified tasks undertaken at the project sites are outsourced to suitable consultants and/or sub-contractors through competitive bidding processes. This would include, for example, development of bidding documents and terms of reference, in co-operation with MAAR and/or MSEA, as necessary;
- to organize project-level meetings and workshops, e.g., inception workshop, Project Steering Committee (PSC) meetings (see para. 112 below), etc.;
- working closely with UNDP Syria, to co-ordinate all missions by international consultants, including preparation of terms of reference;
- to develop, in co-operation with MAAR and/or MSEA, as relevant, details of equipment procurement; and
- to prepare overall project reporting.

102. It is worth recalling that the PCU is by definition the single non-sustainable component of the project. In other words, its existence is required only for the purposes of the project's operation; it should be expected to dissolve at the time of project completion, leaving the inter-sectoral co-ordination of protected area management to be achieved by the relevant Government agencies. This temporary character of the PCU should be widely understood so that parties may begin fully to assume these co-ordination responsibilities prior to the project's completion.

103. The PCU will receive periodic support from an international Project Implementation and Monitoring Expert (PIME), who will carefully monitor and support the implementation of all project components. This expert will undertake periodic visits to the PCU and to the project sites in order to review the progress of project implementation as compared with the defined baseline and with respect to the benchmark indicators highlighted in the Logical Framework Analysis Matrix (see Annex B). The PIME will represent one vehicle for

[30] A complete TOR for the PCU, as well as for the NPD, NPMs and PIME (see below, para. 102), will be appended to the UNDP project document.

introducing international best practices to the project sites. PIME mission reports will follow an agreed format and will represent an important technical source for keeping the UNDP Syria desk officer, UNDP-GEF Regional Co-ordinator and UNDP-GEF Regional Manager apprised concerning developments in project implementation. Support from the PIME will gradually decline over the course of project implementation, e.g., from four months in Year One to one month in Year Seven.

104. UNDP will provide both technical and administrative backstopping to ensure results-oriented management, proper administration of funds, maintain project accounts, facilitate staff recruitment and procurement processes, monitor resource mobilization of baseline and co-finance as contemplated in project document. Financial transactions will be subject to annual audits undertaken by internationally certified auditors.

105. A Project Steering Committee (PSC) will meet on an annual basis with the role of overseeing project planning, implementation and performance. It will consist of representatives from UNDP, MSEA, MAAR, the national executing agency and each of the participating provinces. The PSC will be responsible, *inter alia*, for adopting annual work programmes prepared by the PCU.

106. Stakeholder consultations during project design: The project formulation process, and in particular the definition of problems and solutions—the latter encompassing objectives, outputs and activities—has involved a wide and lengthy process of stakeholder consultation. Initial consultations with MSEA and MAAR laid the foundation for the PDF-B process and made clear early on that the project would adopt a different approach from that taken by the WB-GEF project. Following the selection of sites, site visits took place that widened the circle of participation in two ways. First, provincial and district-level officials were consulted and provided with initial introductions to the project's purpose and methodology. Consultations were held with officials ranging from the Provincial Governors to the Provincial offices of MSEA to the Provincial and District-level Departments of Forestry. Second, initial consultations were held with local people living in and around project sites, many of whom had quite distinct, and not always positive, views of the PAs.

107. Consultations with these two types of stakeholders – official and local – continued throughout the PDF-B preparation process. Officials were brought together twice at national level, first for a Project Development Workshop utilizing the LFA methodology and second for a Project Endorsement Workshop. These discussions, along with bilateral discussions involving the Minister of MSEA and Deputy Minister of MAAR, were critical in ironing out a foundation for co-operation between the ministries, as well as for detailing the nature of GEF support.

108. Site-level forestry department officials and local inhabitants were again consulted, this time at length, during the preparation of site profiles. During this process, a team of eight national consultants spent several weeks at the sites, gathering information for their sectoral reports. These consultations were essential for gaining a better view of what was happening at each site.

109. Stakeholder participation during project implementation: Stakeholder participation during project implementation will be ensured through a number of mechanisms. The project will establish two main vehicles for participation in the decision-making process. These are outlined below.

110. ADVISORY COMMITTEES OF DIRECT RESOURCE USERS*:* As other experiences suggest, long-term resource use and biodiversity conservation have a better chance of success if genuine avenues are available for the participation of local stakeholders in the management of biodiversity resources. Consultations undertaken during the PDF-B stage strongly suggested

that resource users whose livelihoods would be most directly affected by the GEF alternative need to have a formal structure for participation and a direct communication link with the local and international experts involved in the management of the project. This formal and direct participation is even more important when resource users appear particularly vulnerable, as has been observed in several project sites. These committees will provide independent inputs into the definition, implementation and evaluation of project activities. As the name indicates, their role would be of an advisory nature and their recommendations would not be binding. However, their recommendations would constitute formal annexes of the project annual review and formal annexes to the minutes of the project sub-steering committee meetings. This should ensure that the opinions and interests of those most vulnerable enter the project's decision-making process.

111. Representative from farmers' and herders' associations are good candidates for the above committees. Other likely members include representatives from groups engaged in educational or social / organizational activities such as the party youth groups (*Shabibah*) and the womens' union. Their role can be of particular importance where raising public awareness is an issue both within the stakeholder community and among the general public as a whole.

112. Certain key stakeholders from within the community should also be considered as candidates. Often, the latter group is not organized by means of association or other similar structures. The project will have to undertake an effort either to foster the creation of associations or help the group in selecting candidates that fully represent their interests in the project's decision-making process. The committees might also include representatives from the tourism sector since tourism is expected to play an important role in presenting alternative sustainable means of livelihood.

113. SUB-STEERING COMMITTEES: In addition to the above advisory committees, the project will have sub-steering committees at each project site. These will comprise representatives from the formal structures of government, other stakeholders in each site and at least one member of the above "advisory committee of direct resource users". The presence of village leaders within these sub-steering committees would be highly desirable. These committees would provide guidance to project activities, serve as one of the main vehicles for stakeholder input, and review, approve and monitor the annual workplan for each project site. Their maneuverability and degree of freedom would be limited by the boundaries given by the overall framework of activities defined by the project document and the PSC.

114. The objective of having the above two types of committees acting simultaneously is two-fold. The first objective is to ensure the participation of stakeholders in the formal project decision-making process (mainly done through the Sub-steering committees). The sub-steering committees are endowed with formal tools to influence the design and implementation of project activities. The second objective is to provide a backup channel ("advisory committees of direct resource users") that can ensure that the interests of most vulnerable groups are not diluted whenever sub-steering committees comprise relatively big numbers of participants or present significant power asymmetries. Together, these structures are aimed at ensuring that project management units have access to inputs from all relevant stakeholders, that stakeholders have the tools to participate in project activities, and that the most vulnerable groups are heard and not disproportionately affected by any alternative.

115. Finally there is a need to set up a monitoring committee which is able to study and quantify the impact of any program or activity likely to affect stakeholder resources and subsistence. Monitoring results would then act as an indicator as to whether these programs are having a positive or negative impact on the community, which in turn would act as a gauge as to whether the project is succeeding or failing and in which sectors. Members of this committee should be recruited from the national consultants and key decision-makers within

government. Local stakeholders have been purposely excluded from this committee due to the need for objective analysis.

FINANCIAL ARRANGEMENTS

116. A financial plan with timing of disbursements is not applicable as this is not a phased project. The timing of disbursements will be determined at the project implementation phase.

117. Incremental costs: The incremental costs to be financed by the GEF amount to US$3.5 million,[31] complemented by total co-financing of US$3.4 million, for a total alternative project cost of US$6.9 million. The requested GEF grant therefore amounts to 50.7% of the total costs of the GEF Alternative, with the remaining 49.3% contributed by the Government and UNDP Syria. The incremental cost analysis (see **Annex A**) sets out the rationale for the financing of project activities. GEF resources have been targeted towards activities consistent with GEF guidelines for incremental funding.

118. **Table 3** below presents a Proposed Project Budget and Financing Scheme

Table 3

Project Outcomes	**TOTAL**	**GEF**	**Co-financing**	
	(US$ Million)	**(US$ Million)**	**Source**	**Amount (US$) Million**
Outcome 1: Policies and institutional systems that allow for the wise selection and effective operation of protected areas to conserve globally significant biodiversity	2.736	1.568	Gov't	0.483
Outcome 2: Effective techniques for PA management and biodiversity conservation have been demonstrated and are available for replication	2.971	1.624	Gov't	1.579
Outcome 3: Sustainable use of natural resources in and around protected areas is demonstrated through the development and implementation of a programme for alternative sustainable livelihoods and community resource management	2.162	0.100	UNDP-TRAC Gov't	1.000 0.345
Totals	**6.699**	**3.292**		**3.407**

119. Cost-effectiveness: The future costs of restoring the sites, should they be degraded, would be prohibitive, particularly given the sensitivity of these ecosystems. The loss of biodiversity induced by the current practices would likely be irreversible. This project is based on the assumption that taking a precautionary and fully participatory approach to conservation is the most cost-effective solution. Finally, the project's cost effectiveness will be greatly enhanced by its emphasis on integrating site-level and national-level capacity-

[31] This figure includes $194,000 for the PDF-B.

building activities, which is considered essential to replication and thus to building up the national PA system in the long-term.

SUSTAINABILITY OF PROJECT RESULTS

120. Institutional sustainability: Biodiversity conservation requires sustainable solutions. It is meaningless to conserve species, habitat and genetic diversity for five or ten years, or even longer, only to have it lost subsequently. Thus, the ability to achieve benefits that are sustainable is an essential barometer of project success. The baseline assessment for this project has lead to the conclusion that systemic improvements, in particular ones aimed at strengthening the institutions responsible for PA management, are the key to achieving sustainable conservation benefits. Thus, strengthening the capacities of key MAAR and MSEA departments responsible for PA management, as well as the inter-sectoral co-ordination mechanisms that tie them together, are important goals highlighted by Outcome 1.

121. Another important element of sustainability involves the role of the PCU. Quite often, a PCU can become a substitute, rather than a complement, for the Government agencies that a project is trying to help – a recipe for unsustainable benefits. In this project, the risk pertains especially to the inter-sectoral co-ordination mechanisms being established, since these will initially imply a strong role for the PCU. The project will pay attention to this risk and ensure that a progressive disengagement takes place, whereby the PCU can easily disappear at project closure, leaving sustainable co-ordination mechanisms among permanent national institutions in its place.

122. Technical sustainability: The project does not rely heavily on international experts, but rather places emphasis on building the capacities of local experts. Thus, for example, the main long-term expert will be recruited on a retainer basis to provide part-time support throughout the project duration. This support will diminish over the course of the project, from 4 w/m in Year 1 to 1 w/m in Year 7. It is expected that a critical mass of national-level expertise will be reached during the course of the project, thus substantially reducing the long-term needs for international expertise in PA management techniques.

123. Financial sustainability: The GEF alternative involves a one-time investment to develop the technical, managerial and operational framework for effective management of PAs through an array of capacity-building activities. Government has clearly indicated its willingness to finance the long-term costs of maintaining the PA system. With this in mind, the project will avoid creating high-maintenance operational systems at project sites, but will focus on essential needs for conserving biodiversity. In addition, the project will investigate various mechanisms for sustainable financing, including user fees, etc., as a source of financing support to complement regular budgetary allocations. The potential role of an Environmental Fund recently created by MSEA will also be investigated in this context.

124. Project risks and assumptions**:** Based on the logic of incremental cost matrix (see **Annex A**), achievement of project outcomes will follow from the successful completion of project activities. No other assumptions or risks have been identified at this level of the project.

125. In order for the three project outcomes to jointly achieve the project purpose, certain assumptions need to hold true. These include the following:

- Outcome 1: The Government of Syria guarantees the adoption/implementation of project recommendations, and the project receives the active participation and co-operation of relevant Governmental stakeholders.

- The Government counterparts (MAAR and MSEA) were informed of this risk during preparation of the brief, and as a response the Government assured its full commitment to attain the project objectives (including sustainable use and development objectives) and readiness to implement the project recommendations, and based on this commitment the Government endorsement the brief and provided a co-financing letter.

- The risk of a breakdown in co-operation between the key institutional partners, MAAR and MSEA: Minimizing this risk, which has been highlighted by the difficulties in implementation experienced by the WB/Slenfe project, has been a key objective of project design. Various design features, such as the implementation arrangements involving two project managers, have been incorporated in order to avoid any potential for gridlock in project implementation. Some features, such as the establishment of a strong, neutral PCU, may themselves create additional risks (in this case to sustainability), which have also been identified.

- The risk that other relevant institutional players may not have an adequate interest in participating: The decision to focus the project's limited resources on the two main partners – MAAR and MSEA – has created the risk that other relevant agencies may feel 'left out.' These include agencies with responsibility for protected areas (the Ministry of Irrigation and Directorate of Ports) and other agencies with cross-cutting interests, e.g., Planning, Education, Tourism and Fisheries. This risk will be mitigated by: (i) establishing close ties with the EU project at Um al Toyour (which involves the Ministry of Ports); (ii) by inviting other relevant agencies to participate in a Project Steering Committee, either on a continuous or ad-hoc basis, and; (iii) by including these agencies as targets of the project's awareness, and in some cases of its capacity-building, activities.

- Outcome 2: The main assumption here is that no major external threats or factors outside the systems boundary impact upon sustainable management of the sites. The fact that the sites are all in mountainous areas minimizes this risk, as there is no need to be concerned about 'upstream' impacts, for example on hydrological processes at the sites. However, the possibility of natural factors, such as drought and related impacts, such as fire, cannot be ruled out. The latter can be mitigated against through careful fire control methods, which already exist under the project baseline.

- Outcome 3: The major risk to this outcome involves the assumption that the socio-economic and human development priorities of local communities can be adequately addressed in order to ensure reduced anthropogenic impacts on the sites. General economic conditions may have an important impact, for example, on rural-urban migratory trends, joblessness, etc., and a negative scenario may place renewed pressure on natural resources at the site. The project has mitigated against this risk through what it believes to be adequate co-financing resources.

126. The root causes of threats to biodiversity are shown in the problem tree in **Annex F** and have guided the design of project interventions. Project planners have carefully weighed the likelihood of these fundamentals changing over the course of implementation and assessed the impact on outcomes.

127. Replicability: The project's basic design is meant to encourage replication beyond the three demonstration sites. Replication will thus be achieved through an iterative process linking national- and provincial-level co-ordination mechanisms (Outcome 1) and site-level management actions (Outcomes 2 and 3). As provincial and national-level units and their constituent personnel become involved with work at the demonstration sites and receive direct organizational support and training, their efforts to manage other sites will by definition

improve. More specifically, the project will support the preparation of periodic policy analyses, with participation by MAAR and MSEA, in order to derive lessons learned from experience at project demonstration sites and to develop agreed strategies for applying these lessons at existing and proposed new PAs.[32]

128. As highlighted in the STAP Review of the present project, project results are also expected to be potentially applicable in many areas of the Middle East, North Africa and SW Asia. Lessons learned from restructuring and reinforcing the PA system, as well as from encouraging participation of local communities, will be especially valuable. UNDP Syria and MSEA will co-operate in disseminating project results and lessons learned within the Middle East region and beyond.[33]

LESSONS LEARNED, MONITORING AND EVALUATION

129. Lessons learned from previous projects: As noted above in the sub-section on "Technical Co-operation Context," project design has been informed by the experience of the World Bank-GEF Arz/El Shouh MSP project. **Table 4** highlights the key problems identified by the SMPR for the above project and ways in which this project has learned from these lessons.

Table 4: Lessons learned from the WB-GWF Arz-El Shouh MSP

Issue identified in SMPR	Adjustment made for this project
Implementation modalities and the breakdown of roles and responsibilities between MSEA and MAAR were not defined in a way that was both clear and acceptable to the two ministries. This proved a cause for continuing disagreement and led to substantial and persisting delays in implementation. The recruitment of a project manager was among the issues leading to disagreement.	The PDF-B phase has placed substantial emphasis on developing a clear, unambiguous division of responsibilities for the main project partners. In addition, it has tried to develop implementation modalities that will minimize the possibility of any future inter-ministerial disagreement leading to serious delays or even project 'gridlock.'
Expected co-financing did not materialize, thus compromising certain key outputs, including support to legislative reform and development of sustainable livelihood options.	As per revised GEF procedures, co-financing is now guaranteed in writing from relevant sources. Procedures for closer monitoring of co-financing have also recently been put into place.
Operational difficulties associated with an inability to obtain key exemptions for tax and duty payments.	UNDP projects are tax exempted in accordance with the cooperation agreement between UNDP and the Government of Syria.

130. Project monitoring and evaluation: Monitoring and evaluation (M&E) of the project will follow the UNDP Program Manual and GEF M&E procedures. The project will be subject to tripartite review (TPR) at least once every 12 months, the first such meeting to be held at the end of the 11th month from the start of implementation. UNDP Syria will organize the TPR meetings. A project terminal report will be prepared by the Executing Agency for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently

[32] See Annex 2, Logframe Matrix, Activity Area 1.1.
[33] See Annex 2, Logframe Matrix, Activity Area 1.4.

in advance to allow review and technical clearance by UNDP at least two months prior to the terminal tripartite review.

131. The Executing Agency will be responsible for ensuring the preparation of the harmonized Annual Project Report/Project Implementation Review (APR/PIR). This report is prepared and submitted to each TPR meeting at least one month in advance. Additional reports may be requested, if necessary, during the project lifetime. The APR/PIRs will be reviewed by the Technical Advisory Committee and shared with all project stakeholders. The APR/PIR will be submitted to UNDP Syria which will subsequently forward it to UNDP-GEF Regional Co-ordinating Unit (RCU) in Beirut. In addition, the National Project Director shall prepare and submit the quarterly project progress report to UNDP Syria and the Executing Agency.

132. The project will be subject to a mandatory final evaluation prior to its closure. The mid-term and final evaluations will be organized by the Executing Agency, in consultation with UNDP Syria and UNDP-GEF. Both evaluations will be undertaken by independent evaluation missions with terms of reference and Team Leader(s) approved by UNDP-GEF. Participation by UNDP-GEF or the Executing Agency will be funded from resources external to the project budget. The review mission will, if possible, include representatives from co-funding donors.

133. UNDP-GEF will also monitor project performance, particularly in line with the indicators included in the Logical Framework Matrix, annexed to the Project Brief. UNDP-GEF will participate in TPRs as necessary, depending upon the project implementation progress, issues raised in APRs and PIRs, and/or at the specific request of UNDP Syria. UNDP-GEF will also participate in the mid-term and final evaluations. Finally, financial audits of the project will be conducted annually.

134. Detailed biological and socio-economic surveys will be undertaken to provide a baseline for future monitoring and to provide a basis for adaptive management. In addition, field surveys will be sponsored during the life of the project to ascertain population trends for keystone species. A set of indicators of impact has been selected during project preparation and is provided in the logframe matrix (**Annex B**). Surveys will assess the social and economic impact of the project intervention and appraise social relations and conflicts between different stakeholders and stakeholder perception of the project impact.