United Nations Development Programme
GLOBAL ENVIRONMENT FACILITY (GEF)

Date: 27 January 1999

To: Mr. Lars Vidaeus
Executive Coordinator
GEF Coordination Office

Copy:
Mr. Kenneth King, Assistant CEO, GEFSEC
Mr. Admed Djoghlaf, Executive Coordinator, GEF/UNEP

File: World Bank
Yemen/Gen

From: Rafael Asenjo,
Executive Coordinator
GEF-UNDP

Subject: World Bank MSP proposal: Yemen – Protected Areas Management

I refer to your fax of 26 January 1999 on the above mentioned MSP project.

The project brief clearly identifies the project area of intervention to the proposed protected areas of Jebel Bura'a and Hawf, both of which are known areas with unique stands and habitats.

UNDP is aware and informed of this project, which forms a priority for EPC in their biodiversity programme. We support the project and urge its approval.

However, in view of our operational experiences in Yemen, we would like to highlight some aspects which will need particular attention in the design phase.

- The main challenge, which will face the project in the implementation phase, pertains to institutional capacity of counterpart agencies, esp. the EPC in implementation.
- The second most significant issue facing the project concerns the long-term commitment and sustainability of biodiversity interventions in Yemen, in view of the prevailing priorities and budgetary issues. Even with a strong anchoring in grassroots actions, the issue of national support and involvement, - in the longer term – remains of high priority.

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- While Jebel Bura'a is relatively close to Sana'a, the long distance and extreme isolation of Hawf is problematic unless a functioning project implementation unit – based in Hawf and funded by the project, can be established in Hawf. From our experience, it is unrealistic to expect the Government (EPC) to fund project offices and operations in extremely remote locations.
- The brief correctly points to the poverty of people, esp. in the Hawf area, but also in Jebel Bura'a. It will be key, for the success of the project, to have secure resources as part of the baseline, which will be clearly earmarked for poverty alleviation activities, focusing on primary health, secure water supply, and income generation. With out such resources working in direct parallel at the actual project sites, the GEF MSP project teams will be under tremendous pressures from communities to address these community priorities.

Best regards.

THE WORLD BANK/IFC/M.I.G.A.

OFFICE MEMORANDUM

DATE: January 26, 1999

TO: Mr. Kenneth King, Assistant CEO,
GEF PROGRAM COORDINATION

FROM: Lars Vidaeus, GEF Executive Coordinator

EXTENSION: 3-4188

SUBJECT: ***Yemen: Protected Areas Management***
GEF Medium-Sized Project (MSP)

1. Please find attached the Project Brief for the above-mentioned Medium-Sized Grant. The project has been endorsed by the GEF national operational focal point (see letter, also attached).

2. In accordance with operational guidance for approval of Medium-Sized Projects, we are submitting this project brief to the GEF Secretariat for action by the Chief Executive Officer (CEO). We are simultaneously circulating copies to UNDP/GEF, UNEP/GEF, STAP, and the CBD Secretariat for comments within 15 working days, or by February 16, 1999.

3. We look forward to receiving the GEF Secretariat's guidance on the next processing steps for this Medium Size Project by March 2, 1999 (if not before). Thank you and best regards.

Copies:
R. Asenjo, UNDP (Fax:212-906-6998)
A. Djoghlaf, UNEP (Nairobi) (Fax: 254-2-624-041)
R. Khanna, UNEP (Washington) (Fax: 202-331-4225)
M. Gadgil, STAP (Fax: 91-80-334-1683 or 91-80-331-5428)
M. Griffith, STAP Secretariat (Nairobi) (fax 254-2-623-140)
H. Zedan, CBD Secretariat (Fax: 1514-288-6588)

cc: Messrs./Mmes. Sinha, Bromhead, Arif (MNSRE), Bossard, Towsey (ENV); ENVGC ISC;

PROJECT SUMMARY

PROJECT IDENTIFIERS	
1. Project name: **Protected Areas Management (PAM)**	1. GEF Implementing Agency: The World Bank
3. Country or countries in which the project is being implemented: The Republic of Yemen	4. Country eligibility: Yemen ratified the Convention on Biological Diversity on February 21, 1996 and meets all other eligibility requirements
5. GEF focal area(s): Biodiversity	6. Operational program/Short-term measure: This proposal falls within three Operational Programs: Arid and semi-arid ecosystems (OP#1), Forest ecosystems (OP#3), Mountain ecosystems (OP#4).
7. Project linkage to national priorities, action plans, and programs: The project is based on the environmental priorities identified in the National Environmental Action Plan and corresponds to government programs to save Biodiversity resources as these are being outlined in the draft National Biodiversity Strategy, in particular with regard to unique forest ecosystems located in arid and semi-arid, mountainous areas. The proposal constitute a first pilot initiative to address these priorities and will also serve as an enabling framework for Biodiversity Conservation in Yemen.	
8. GEF national operational focal point and date of country endorsement: H.E. Mohsen Al-Hamdani, Chairman, Environmental Protection Council, Sana'a, Yemen - Letter of endorsement from: H.E. Mohsen Al-Hamdani dated 10 December, 1998	
PROJECT OBJECTIVES AND ACTIVITIES	
9. Project rationale and objectives: The Project seeks to conserve Biodiversity of global significance in Yemen through the protection, maintenance and enhancement of forest ecosystems in arid and semi-arid mountainous areas by promoting sustainable, community-based management of two selected forest ecosystems and by developing replicable systems for preserving Biodiversity in Yemen. Yemen is a country where severe environmental degradation has taken place and only very limited part of the original forest cover remains under natural conditions. Still few conservation initiatives are on going based on limited National capacity and community participation. Therefore, the establishment, supported by a strong local dialogue, of the first two	Indicators: (a) Two Protected Areas declared and official adoption of executive legislation pertaining to community based protected area management (b) Effective community based approaches to conservation of forest Biodiversity in threatened sites (c) Policies for sustainable conservation of threatened species and forest cover

Protected Areas concerning Forest Ecosystems through a Medium Sized Grant has become an urgent priority and is expected to reinforce the capacities and to pave the way for additional and broader prospects with regard to Biodiversity Conservation in the Country.	
10. Project outcomes include: (a) Detailed PAM plans for protection of threatened ecosystems in two pilot areas based on a strong community participation. (b) Enhancement of supporting policy institutional, legal and regulatory framework for PAM. (c) Enhancement of the assessment of the numbers, scale and extent of biological resources in the two pilot zones, including a mechanism for long-term monitoring of Biodiversity. (d) Implementation of priority actions including priority community development actions packaged for and submitted to the existing IDA-funded Social Fund and/or the Public Works Fund.	Indicators: (a) Community awareness to protect Biodiversity. (b) PAM plans for two pilot areas and replicable models for PAM elsewhere in Yemen. (c) Inventory of the biological resources of the pilot areas completed. (d) Mechanism for long term Biodiversity monitoring in place. (e) Community development actions underway and external pressures decreased. (f) Capabilities of government (EPC), local communities, and NGOs strengthened to better plan, manage, and conserve Yemen's Biodiversity and land resources.
11. Project activities to achieve outcomes (including GEF cost in US$): (a) Development of community based Protected Areas Management Plans for two pilot sites (Jebel Bura'a and Hawf) (GEF 360,000). (b) Implementation of priority actions in the two pilot sites (GEF 420,000). (c) Awareness and enhancement of the institutional, legal and regulatory framework for protected area management in the two sites (GEF 120,000).	Indicators: (a) Two community approved PAM plans; Zoning, mapping and targeted Biodiversity studies completed; Biodiversity monitoring mechanism in place. (b) Community consultation committees, which involves key stakeholders, operational and priority actions discussed and agreed ; Extent to which communities feel involved in P.A management at different levels; Priority investments financed (Core protected areas and buffer zones); Protection and

	control enforced; Biodiversity monitoring mechanism operational; Change of land uses compatible with Biodiversity conservation in the monitoring areas; Change in number of people harvesting threatened forest species. (c) Change in level of understanding of Biodiversity concepts and conservation objectives; Change in average performance of staff in particular in understanding of co-management principles by government agencies (EPC and Ministry of Agriculture) staff; Number of awareness programs undertaken; Change in the legal and regulatory framework at the national level and in the status of the two pilot protected areas including definition of boundaries and gazettement.

12. Estimated budget (in US$):

PDF: US$ 25,000 (Block A)
GEF: US$ 740,000
Co-financing: US$ 170,000 (Government contribution in kind)
Co-financing: US$ 510,000 (Other Donors)

TOTAL: US$ 1,420,000

INFORMATION ON INSTITUTION SUBMITTING PROJECT BRIEF

13. Information on project proposer:

Environmental Protection Council, Sana'a; Yemen's national environmental agency.

14. Information on proposed executing agency (if different from above):

Same as above.

15. Date of initial submission of project concept: February 1998

INFORMATION TO BE COMPLETED BY IMPLEMENTING AGENCY:

16. Project identification number:

17. Implementing Agency contact person: Christophe CREPIN - ENVGC - Ext. 202 473 9727.

18. **Project linkage to Implementing Agency program(s): Project is consistent with** World Bank country strategy for Yemen which identifies community based sustainable use of natural resources and conservation of natural habitats as issues of major importance

for the country. Currently, the World Bank has an important ongoing Land and Water conservation project with a substantial natural forest management component and is about to identify follow up initiatives.

12/98

PROJECT DESCRIPTION

Project rationale and objectives

1. The project is designed to contribute to the conservation of globally significant forest biodiversity, in particular in threatened sites in semi-arid, mountainous areas of Yemen. The specific objectives of the project are to promote sustainable, community-based protected area management (PAM) in two pilot areas, **Jebel Bura'a** and **Hawf** and to develop enabling conditions for preserving biodiversity based on PAM processes. The project is a major first and pilot step to protect natural habitat through the establishment of an effective community based protected area management program and will build on lessons learned. The two pilot sites are extremely important bio-climatically and ecologically, and are coming under threat by an increasing population requiring grazing and firewood resources combined with an absence of suitable protection and management measures.

2. The flora and fauna of the Republic of Yemen are extremely species rich. As regards the flora, this is largely because of its position at the Arabian Peninsula, where a mixture can be found of the tropical African, Sudanian plant geographical region and the extra-tropical Saharo-Arabian plant geographical region. The Yemeni plant species fall within the so-called Eritreo-Arabian plant geographical region. The large species diversity is also the result of the considerable climatic changes which have taken place over time. This has enabled different species to survive in the large variety of habitats offered by Yemen and characterized by some steep mountains dissected by narrow wadis thus creating some highly isolated habitats that favor the formation of endemic species. The same is largely true for the fauna of Yemen, which shows elements of the Afrotropical region and the Arabian extratropical region. The large diversity is also the result of the large climatic variation found within Yemen, varying from desert conditions to sub-humid tropical conditions.

3. Part of northern Yemen, particularly the Montane Plains, has known a long history of relatively high population densities, since conditions for human land-use are relatively favorable (Arabia Felix). As a result, there have been major impacts on the environmental resources and changes of the natural ecosystems. Very efficient and ingenious resource-use systems have been developed that have sustained relatively high population densities during centuries (e.g. terrace lands and irrigation systems). However, this situation has left little room for pristine or relatively intact ecosystems, and it has lead to a reduction of biodiversity. One area that still harbors a vegetation and fauna that is relatively intact as well as highly diverse is **Jebel Bura'a**. This has been selected as one site for pilot PAM activities involving the local communities. The complexity of its present land-use and management by multiple actors is quite representative for Yemen.

However, throughout the majority of southern Yemen population density has been relatively low, and consequently the changes of the natural environment have been much less. This is first of all due to the predominance of arid climatic conditions. One local exception to this situation is found in the extreme south-eastern part of Yemen. Here, due to monsoon moisture the vegetation is extremely dense and diverse, while population density has remained relatively low during the past centuries. As a result, the ecosystem is still relatively intact. The **Hawf** pilot area, located in

Mahrah Governorate right at the border of Oman has therefore been selected as the other site for pilot PAM activities involving local communities.

Jebel Bura'a pilot area

Jebel Bura'a, a woodland covering approximately 4,100 ha, is located in a mountain valley near the Tihama plains along the west coast of the Red Sea near Hodeidah. It is a rich natural reserve of plant species, housing more than 22 vegetation types, representing 11 families and 12 species, some of which are endemic.
The Jebel Bura'a pilot area represents a unique combination of ecological conditions favoring a rich ecosystem with great biodiversity (due to its high precipitation), and human management factors that have so far avoided massive destruction as characteristic for the region (the religious property land ownership of Waqf). Within the northern Yemen it is probably the largest area with relatively dense vegetation. The plant and animal diversity have been relatively well studied and show very high biodiversity values, among which a number of endemic and threatened species. The insects and bats of Jebel Bura'a have not yet been studied in detail. This area with high biodiversity plays a central role as a center of genetic diversity within the entire mountain zone of Yemen.

The Jebel Bura'a pilot area is surrounded by several villages, both of the lowland Tihama people (the Tihamis) and the highland mountain people (the highlanders) which make its location specific in the intermediate zone between two different culture zones. Both make use of the pilot area, but the Tihamis make most intensive use of the woody plant and grazing resources.
Given the biodiversity features, the severe threats, and the relative level of poverty of the lowland populations depending upon the area, GEF funding to establish a management plan for this pilot area seems fully justified. The emphasis will have to be on the negotiation and agreement on a management plan between all stakeholders involved, and on control and monitoring during its implementation. There are good perspectives for sustainability of such investments, provided local agreement can be achieved and local management responsibilities can be secured and supported through adequate institutional and legislative arrangements.

Hawf pilot area

Hawf is a 30,000 ha mountainous area, with a maximum elevation of 1400 m, running parallel with the Gulf of Aden coast and extending for about 60 km from Ras Fartek in the west of Yemen to the border with Oman. Due to it's unique, orographic-induced climate, the area is covered by a lush, monsoon forest, and is surrounded by an arid ecosystem in the rain shadow. It is the only forest of its type in Yemen. It is also, along with the contiguous area beyond the Omani border, the only forest of this type in the region. It is the habitat for a number of unique and threatened species of plants and animals.

The area as a whole including Dhofar region in Oman and Hawf region in Yemen has been described as a center of plant diversity, and as a 'fog oasis' in the Arabian Peninsula which is predominantly arid. Even if at the Omani side protection measures would be undertaken, particular protection of the Hawf pilot area would be justified from an international point of view because of the supposedly local ecological variation and lower land pressure at the Yemeni side. Overall low population densities in southern Yemen, concentration of population in urban areas,

and the poor accessibility, have so far spared the natural environment in Hawf pilot area from the radical adaptation and biodiversity decline typical for many parts of Arabia and Yemen as a whole.

Within Yemen, the Hawf pilot area constitutes the second largest area with a high tree cover and a high plant and animal diversity. It has so far been remarkably little studied. It is not unlikely that additional endemic species exist in Hawf region, given the specific site conditions (e.g. at Wadi Marara). Current threats mainly result from rapid population increase in the area and the absence of alternative income opportunities other than expansion and intensification of agriculture and pastoralism in the area itself.
Given the remoteness of the area, the relative level of poverty of the local communities, and the inexperience of the Yemeni Government on designing management plans for protected areas, GEF funding to establish a management plan for this pilot area seems also fully justified. Basic requirements such as detailed ecological inventories will still need to be undertaken. There are good perspectives for sustainability of such investments, given the level of awareness and insight among local communities and the local NGO, and the absence of severe threats from outside the area.

4. At these two PAM pilot areas, major conservation and management efforts are justified as follows:

- their major biodiversity values from both an international and national point of view;
- their major landscape diversity (escarpment, wadi's, rock outcrops, high mountaintops) and its major plant and animal diversity (including over a hundred resident and migratory birds), some of which is still relatively unknown (in particular in Hawf);
- Jebel Bura'a's location in the intermediate zone between two different cultural zones (Tihamis and highlanders) and Hawf's unique system of `transhumance` agropastoralism;
- their important production functions for the life support system of the local communities (forest products and grazing lands), as well as regulation functions (water balance, soil stabilization) and information functions (eco-tourism, research, training and education).

5. The two areas are quite different and to a large extent complementary. The Hawf pilot area constitutes part of the largest area with intact dense vegetation in Southern Arabia, which has been very little studied at the Yemeni side. The Jebel Bura'a pilot area is smaller and probably the only relatively intact remnant of the forests of the western Yemeni mountains. Both areas are of major biodiversity significance. While the Hawf pilot area is not severely threatened and agreement and implementation of a proposed management plan will probably be relatively simple, the Jebel Bura'a pilot area is under higher pressures. The Jebel Bura'a site is more representative for the majority of Yemen. The institutional and legislative issues that will be resolved on the basis of this project experience are essential and will serve as a replicable model for the development of a more ambitious PAM program development elsewhere in Yemen. In addition to the on going UNDP/GEF project in the Socotra Archipelago, the proposed MSP is indeed a major complementary step for the government to develop its national protected area program;

6. The project is consistent with three GEF Operational Programs: Arid and semi-arid ecosystems (OP#1), Forest ecosystems (OP#3), and Mountain ecosystems (OP#$). It responds

to the first two objectives of the Convention on Biological Diversity (CBD), in particular it addresses Art. 8, in-situ conservation of Biodiversity resources, and COP guidance on sustainable use of ecosystems and species.

Current situation

The two identified pilot areas do not have yet any specific protection status and are currently under threats; There are however opportunities to tackle these threats, if management arrangements can be agreed upon with the local stakeholders.

1. Jebel Bura'a

There are major threats to Biodiversity in Jebel Bura'a pilot area; Poverty and lack of alternative sources of income, in combination with the construction of a new road through the area, have lead to higher pressures within the pilot area. The main threats appear to come from lowland people who enter the area for grazing with their animals and for wood cutting.
Men come in to cut large poles and sticks for selling and women enter to collect firewood for wedding occasions. It is important to realize that all these uses are executed by lowland people, except for fuelwood collection which also takes place from the villages on the mountains. The lowland people depend partly upon additional incomes from the Jebel Bura'a area;
There are at least two structural causes of increasing pressure on the Jebel Bura'a forest: increasing populations and increasing poverty among several communities, mainly in the lowlands. In addition, recent change, such as the construction of the road through the area, improving accessibility to the forest by people and livestock, has contributed to an increase of grazing and forest exploitation:
The land ownership situation is also not clear. Part of the Jebel Bura'a pilot area is waqf land, which implies that it has been donated by the local Sheikh to be used by the poor. It is unclear which are the boundaries. Whatever the legal side of this land ownership, the land is communally utilized (grazed and wood exploitation). For the rest of the pilot area, villages claim their rights (from mountain tops down to the wadi, or from lowland villages up to the wadi). Whatever it may be, there are user rights which are claimed as ownership rights throughout the area, and which will have to be clarified; Proper long term management of natural resources by the local people cannot be expected unless the rights to the land and to the resources are clarified and agreed upon;
The Jebel Bura area is however likely to benefit from an important project financed by IFAD, the Tihama environment protection project for which the Tihama development agency (TDA) is the executing agency; This project will focus on land conservation and water resources management activities as well as rural development and institutional strengthening. This project offers some good opportunities to contribute to address some root causes of biodiversity loss in the area.

2. Hawf

Both in the Omani Dhofar region and in the Yemeni Hawf region area the flora and fauna have been and are being affected by human land-use. The population has increased from about 7,000 in 1973 to about 25,000 in 1997. Pastoral land-use prevails as a result of the relatively poor conditions for cropping, while tree cutting for timber is increasing. Forest resources are being used for construction of houses, construction of fences around croplands, and as fuelwood. The constructions should be maintained annually which requires wood every time. Unless certain tree

species are used in a very selective manner for these use purposes, pressure on forest resources are beginning to exceed sustained yield levels. Hunting of animal species seems to be rare, people coming to exploit the forest do not carry guns. Where the vegetation is predominated by increaser species and areas with bare soil appear, there are major threats to biodiversity if livestock numbers continue to increase, as preferred species might disappear. It has been suggested recently that at the Omani side (Dhofar region) of the described vegetation type, land-use has been more intensive during recent years than at the Yemeni side, through increased access and the use of four-wheel drive vehicles and over-grazing. At the Yemeni side, the region has remained relatively inaccessible due to the poor road that leads to Hawf from Al Rhaydah. This justify from an international point of view particular protection measures for Hawf pilot area but also the promotion of a regional dialogue with the Omani side to ensure that protection measures would also be undertaken in Oman as it seems likely to be from preparation work. At the Omani side of the border, initiatives seem already to be undertaken for establishment of a national park, which will constitute an additional justification to create a similar protected area at the Yemeni side, thus together constituting one major protected area within southern Arabia.
The intensity of use seems to decline from the north-western entrance to Wadi Riqaf towards the south-east. This would correspond with the observation that human pressures originate from the lowlands mainly. There are few traces of erosion, probably due to the high degree of rockiness.
Expansion of cropland use could also constitutes a major threat to Biodiversity in Hawf area, but expansion of cropland use will always remain limited by the limited availability of arable land.
A potential threat to the pilot area is the construction of a new road that will open up the area for people coming from outside to exploit natural resources. The road has been planned from the Omani border to Hawf village, but any westward extension is unclear. In Hawf pilot area, recently a number of small roads have been constructed by the local communities themselves, but this does not seem to constitute a threat to Biodiversity. But any major improvements of these local roads should be based on firm agreements to reduce risks of over-exploitation of wood resources.
There are opportunities to resolve these current issues at a local level, most important of which are existing awareness of current and potential problems, initiatives to improve the management of natural resources, potentials to improve existing agricultural and pastoral systems, and the existence of a well organized and committed NGO, the "Hawf Coorporation Society". Existing threats to Biodiversity in the area are not due to illegal exploitation by people from outside the area which might be difficult to control. On the other hand, local communities appear to be well aware of the current risks for their own livelihoods and willing to undertake improved management measures.

Expected project outcomes

The most appropriate approach for conservation and management of the two pilot areas is that of a multiple-use protected area, with different levels of protection and use to different places, by use of a Protected Area Management (PAM) zoning system. This approach ensures that traditional users and other stakeholders retain some access to their areas, be it farming, grazing or other activities. The project will develop plans for PAM pilot areas that are agreed upon by the stakeholders involved. Stakeholders will participate in the planning process, through consultation and interviews, and release of draft PAM plans for review.

The project will be carried out over a period of three years to allow sufficient time for community organization and consensus building. At the end of the period the following outcomes are expected :
(i) Detailed PAM plans for protection of threatened species in two pilot areas and community-based plans for buffer zones (ii) Enhancement of local awareness and of supporting policy institutional, legal and regulatory framework for PAM (iii) Enhancement of the assessment of the numbers, scale and extent of biological resources in the two pilot zones, including a mechanism for long-term monitoring of Biodiversity (iv) Implementation of priority actions including priority community development actions packaged for and submitted to the existing IDA-funded Social Fund and/or the Public Works Fund.

Although the establishment of realistic management plans and their implementation will not be a simple task for these pilot areas, and will require support by institutional and legislative arrangements at local (and national) levels, the situations in the pilot sites are fairly representative for Yemen as a whole; The project is, thus, expected to pave the way for the development and implementation of a broader PAM Program in the country.

Activities and financial inputs

The project will be implemented over a three years period and will come in addition to baseline activities, some of them, conducted under the IDA Land and Water Conservation Project. It will establish appropriate coordination within the concerned pilot areas. In order to achieve the project objectives and outcomes, the following activities will be implemented:

(A) Development of community based Protected Area Management plans, including:

(i) A consensus building effort through negotiation and extensive local consultation to ensure acceptance of viable PAM plans. Some of the technical activities to be considered in PAM planning of the pilot areas are summarized below in Figure 1. Some regional consultation with Oman will be required for Hawf. Both PAM pilot areas have unique Biodiversity features that require protection but are presently being more or less utilized by local communities. Thus, the most appropriate approach for management of the pilot areas seems to be one of multiple zoning, with the allocation of different levels of importance to protection of the ecological Biodiversity values to different areas. Multiple-use zoning is a major tool for the management of natural and semi-natural ecosystems. It should include:

1. a core protected area - with protection measures to ensure minimum human influences,
2. a buffer zone - with protection measures to ensure limited human influences that do not affect major ecological processes,
3. a peripheral zone - where development oriented measures are undertaken to reduce pressure on the buffer zone and protected zone.

To obtain the proposed zonation for the pilot areas (See also Annex 1), the following criteria are expected to be used:

- no change which would be difficult to realize (if possible at all) but clarification of existing land ownership;
- emphasis of the protected zone on locations with highest Biodiversity values;

establishment of maximum connectivity and linkages, to safeguard estimated minimum areas for viable plant and animal populations;

- minimum change of existing resource-use systems;
  maximum use of existing opportunities and requirements to tackle identified threats. There are opportunities such as eco-tourism in the area, which can generate economic benefits for effective protection.

(ii) Mapping, targeted studies (such as a detailed vegetation survey of the area to establish a reference for vegetation monitoring in Jebel Bura'a , a detailed vegetation survey in Hawf for identification of differences in terms of plant composition and species as compared to the Dhofar region and a study focussed on natural regeneration of various tree species, particularly Anogeissus dhofarica and Tamarindus indica of which the absence of natural regeneration has been reported) and set-up of a long term environmental monitoring system, including a baseline survey and well defined indicators, to judge future changes upon which management decisions might be adjusted.

The Jebel Bura area is by now known among national and international ecologists who occasionally visit the area and undertake additional surveys. The area has great potential to serve as a site for research and education purposes of Yemeni institutions as it is located not far from major urban centers and can be reached fairly easy. Coordination of all research, training and education activities should be part of the management plan.

(iii) Production of two detailed management plans including an ecotourism strategy and action plans. Research into the potentials for eco-tourism, necessary investments and involvement of the private sector will be conducted;

Figure 1 Some proposed activities

Zone type	Activities
Jebel Bura'a pilot area	- adequate mapping and vegetation survey of the pilot area, establishment of a baseline survey for reference during monitoring; - assessment of past and present land ownership; - insights into past and present forest and pastoral management systems with a particular emphasis on grazing management and forest protection; - assessment of possibilities for alternative employment opportunities, particularly for Tihamis depending upon the exploitation of forest resources in the pilot area, with emphasis on women; - research into the potentials to promote eco-tourism, including involvement of the private sector and the training of tourist guides among local people.
Hawf pilot area	- mapping and vegetation survey, establishment of a baseline for monitoring; - assessment of existing pastoral 'transhumance' systems, including the lopping of trees, grazing management, exchange with other areas etc., including agreements on improved grazing and tree protection; - research in minimum areas for viable animal populations of critical species (e.g. birds of prey, Arabian wolf...);

(B) Implementation of priority actions in the two pilot sites, including:

This component will (i) bring support to the local consultation process in particular through the local community consultation committee in order to achieve the PAM plans objectives (ii) finance priority investments in the core and in the buffer zone to enhance protection , control enforcement, sites delimitation, protected area infrastructure, sustainable use of Biodiversity by the local communities...(iii) finance development and promote alternative livelihoods in the peripheral zone that would seek to address the major root causes of Biodiversity loss. They are different opportunities in **Jebel Bura'a** area, most of which require further investigation before they can be realized;

Jebel Bura'a represents a combination of unique features within a relatively small area that make it a potential site for eco-tourism. Provided proper training and management arrangements, local villagers might benefit from the development of such tourist potentials. The main features are:

- its accessibility and location not far from the main road Hodeidah - Sana'a (3/4 hour), from Hodeidah (1.5 hours) or from Sana'a (4 hours);
- its high biodiversity, with presence of key species that are almost 100% sure observed such as various birds of prey and baboons;
- its major landscape diversity including an attractive wadi and some major rock outcrops;
- its cultural variety, including the Tihama plains and the mountain villages.

Alternatives for some forest uses should also be further developed by the project in close coordination with the Tihama environment protection project executed by TDA.

Some needs of the **Hawf** communities have been expressed during project preparation and can constitute a starting point for the project to undertake a number of development activities accompanying protection measures and to compensate for possible reduced access to protection areas

In Hawf pilot area there also appear to be so far unexploited potentials for bee keeping (honey production) and for collection and trade of medicinal products. Virtually nothing is known of the current use of medicinal products, but given the large diversity of plant species, among which many with known traditional medicinal use (see Plants of Dhofar), this area may constitute some good potentials.

(C) **Awareness and enhancement of the institutional, legal and regulatory framework for PAM in the two pilot sites,** including:

This component will promote awareness campaigns at sites and regions levels to support PAM and change in the level of understanding of Biodiversity conservation concepts and objectives.

Activities are also designed to support the Environment Protection Council together with the Ministry of Agriculture and Irrigation to enhance the institutional, regulatory and legal framework of PAM at the national and local level. For the pilot sites, a protected area status will be defined and is expected to be gazetted by the end of the project.

Sustainability analysis and risk assessment

Project activities are designed to ensure long-term sustainability of forest resource biodiversity conservation management through: (1) designing PAM plans that are community based, (2) linking conservation activities with priority development needs of local communities (3) training of local people in project identification and management (4) support to local staff to ensure

technical sustainability, (5) enhancement of the institutional, legal and regulatory framework of PAM, and (6) development of alternative livelioods.

However, there are risk factors in development of protected area at Jebel Bura'a and at Hawf. The project is designed to minimize these risks. In Jebel Bura'a, the main risk is that a local consensus on implementation and management of the PAM pilot area can not be reached. Therefore, emphasis will be on the negotiation and agreement on a management plan between all stakeholders involved, and on control and monitoring during its implementation. Local agreements can be achieved and local management responsibilities can be secured and supported through adequate institutional and legislative arrangements. The willingness demonstrated by the population in initial workshops indicates good perspectives for sustainability of project investments.

With regard to the Hawf pilot area, its remoteness and the relative level of poverty of the local communities are a risk to plan and implement protected area management initiatives. However, there are good perspectives for sustainability of establishing a Biodiversity management plan for this area, given the level of awareness and insight among local communities, the presence of an active local NGO, and the absence of severe interference from outside the area.

Stakeholder involvement and social assessment.

Preparation funding from the GEF Block A has been used for the conduct of local workshops with representatives of all stakeholders.
The project supports the development of strong community participation in the design, implementation, and surveillance of new models for natural resource conservation and monitoring and complementary development projects. Whether this type of public participation is successful will be determined by the villagers' and civil servants' ability to see real benefits in the form of improved awareness, living standards and/or income. For this reason a critical first step in the design of Protected Area Management plans was to conduct a "Community Awareness" exercise during project preparation that (a) raised local awareness about management concepts, (b) assessed local people interest in participating in the project, and (c) solicited local inputs into the proposed models for local participation and natural resource management. The Community Awareness workshops identified a wide range of stakeholders that includes high level government officials based in the capital and major district centers, other government employees (school teachers, local ministry officials and technicians) that reside in the villages and small towns affected by the plan; and local farmers and herders. Of particular interest to attain project objectives is the presence of The Tihama Development Authority in the Jebel Bura'a area and an active NGO in the Hawf area: The Hawf Cooperation Society. The local communities appear to be well aware of the current risks for their own livelihoods due to increasing population and livestock pressures. As a result, several initiatives appear to have been undertaken to regulate and control exploitation of forest and water resources. One such initiative was undertaken 5 years ago (a written agreement is available) on the restriction of the cutting of live trees within the majority of the pilot area (between Jebel Al Thur and Jebel Ghabaren). As a result of a recent infraction upon this agreement, a new agreement has just been established. It is not clear whether such agreements include any limitations to cropland expansion. The local

community involved in this agreement has requested for support to enforce such agreements and for training on management issues.

INCREMENTAL COST ASSESSMENT

The Government is about to complete its National Biodiversity Strategy, including the identification of priority sites for conservation. Full scale implementation of the national Biodiversity program is critical, but it needs to be accelerated to avoid loss of threatened habitats in two already agreed top priority sites as well as to strengthen national capacity in order to pave the way to a broader PAM initiative.

The total costs of implementing the medium size project are estimated to be US$ 1.420 million. Counterparts in Yemen and international donors will contribute about US$ 680,000 representing baseline investments and program management costs. GEF support will cover the incremental costs of the proposed project which are estimated at US$740,000. The Government and local communities will contribute staffing and support services during project implementation and afterwards to ensure sustainability. The project seeks to maximize global environmental benefits by emphasizing a catalytic role and leverage additional resources from the Social Fund and/or the Public Works Fund to implement community approved development/conservation initiatives. GEF-supported activities will also come in addition to the IDA-financed Land and Conservation Project under which contributions are being made to the preparation of the management plan for Jebel Bura'a as well as to strengthen institutional capacity within the Department of Forest. UNDP under its capacity building program as well as with the support of GEF ('Biodiversity Enabling Capacity project' and 'Conservation of the Biodiversity of Socotra Archipelago') will ensure capacity building at the National level as well as an important part of the institutional and regulatory support on which will be built the status of the two pilot protected area.

In addition, the project will leverage resources from the Tihama Environment Protection Project (Total amount of US$ 30 million and end in July 2002).

A PDF Block A grant was approved to provide assistance in preparing this request. Total GEF support for the project would total US$ 765, 000 (PDF + project grant).

Figure 2

	BASELINE SCENARIO US$000					PROPOSED ALTERNATIVE US$000	INCREMENT US$000
	Social Fund/ Public Works (IDA)	Land and Water Conservation (IDA)	UNDP	Government / Beneficiaries	TOTAL	TOTAL	GEF
Preparation							
Block A						25	**25**
Implementation							
(A) Development of community based PAM		120		40	160	360	**200**
(B) Implementation of priority actions	300			90	390	810	**420**
[illegible] areness and institutional, legal and regulatory framework			90	40	130	250	**120**
TOTAL (including PDF grant)	**300**	**120**	**90**	**170**	**680**	**1,445**	**765**

BUDGET

Estimated project costs are included in a budget table per line item expenditures (in US$) in Figure 3 below.

Figure 3

Project Budget in US $

		Civil Works	Equipment	TA, Training, Incremental Operations Costs	Total
A	**Jebel Bura Area**				
1	Definition of community based PAM		10,000	40,000	50,000
2	Implementation of priority actions	110,000	40,000	110,000	260,000
3	Awareness promotion			15,000	15,000
	Subtotal	110,000	50,000	165,000	325,000
B	**Hawf Area**				
1	Definition of		25,000	125,000	150,000
2	Implementation of priority actions	70,000	30,000	60,000	160,000
3	Awareness promotion			15,000	15,000
	Subtotal	70,000	55,000	200,000	325,000
C	**Institutional Support**				
1	Legal, regulatory & Enforcement			50,000	50,000
2	Monitoring & Evaluation		5,000	35,000	40,000
	Subtotal	0	5,000	85,000	90,000
	Total	180,000	110,000	450,000	740,000

IMPLEMENTATION PLAN

The project will be executed by EPC with support from national and international consultants . However, given the community participation nature of the project, it is expected that field implementation will be decentralized and done by offices (based on a Memorandum of understanding signed with EPC) near the pilot sites. The Tihama Development Authority (decentralized regional development authority of the Ministry of Agriculture and Irrigation) will be in charge of field activities in Jebel Bura'a and a well-organized, influential and committed local NGO called "Hawf Charity Society or Al-Mahrah Citizens" operating mainly in Hawf pilot area will be in charge of those in Hawf. This NGO appears to be very well informed about the local situation (needs, demands and local initiatives) and should be capable of undertaking specific activities by themselves.
Coordination will be done by a National Level Steering Committee which will meet every six months and will include all relevant Governmental Organizations and NGOs.
Regional coordination committees will also be formed and will meet once every quarter. At the field level, there will be a community consultation committee, which will meet every month.
The project implementation plan below indicates the duration of the project and outlines the expected progress of the various project activities.

Figure 4

Project Implementation Plan

DURATION OF PROJECT (IN MONTHS):						
ACTIVITIES	PROJECT-MONTHS					
Completion of project activities	6	12	18	24	30	36
1. Development of community based PAM plans	———					
2. Implementation of priority actions			———	———	———	———
3. Awareness and enhancement of the institutional, legal and regulatory framework	———	———	———	———	———	

PUBLIC INVOLVEMENT PLAN

- **Stakeholder identification**;

Key stakeholders have been identified in the preparatory surveys. The villagers in the Jebel Bura'a region can be divided into two major social groups: (a) the highlanders on the top of the mountain, who have relatively high income from planting coffee and quat, the most profitable cash crops in the area; and (b) the Tihamians on the wadi, most of whom live below the poverty line.

Another relevant partner is the Tihama Development Authority. At Hawf, three economic groups are most likely to be affected by the proposed project actions: farmers, herders and fishermen.

- **Information dissemination**

The different levels of steering committee will ensure a comprehensive dissemination of the information, lessons learned and progress made during the project. At the local level, the awareness campaigns and the consultation process will be adequate vehicles to disseminate information to the very beneficiaries.

At Hawf, the physical difficulties of transportation to the Hawf area might restrict the amount of local communication about the project and will emphasize the need for regular awareness workshops.

- **Stakeholder participation**

In Jebel Bura'a the villagers agreed on the necessity of having a joint committee that represents all the local communities in the area, local leaders and representatives of the major stakeholder groups. At Hawf, at this stage the most important function of the project is to facilitate the creation of a development process that can permit biodiversity conservation to take place; not preordain the final product. This process will require strong social science leadership to collaborate with the ecological scientists.

- **Social and participation issues.**

In Jebel Bura'a careful social monitoring will be needed to provide project planners with the information that they need to insure and equitable distribution of benefits across the different ethnic and employment groups. Care must also be taken to solicit the active input of political and religious leaders. At present the women in the Hawf District have the right to work and study, and work equally in the farms and household chores. Care must be taken to involve women in the project by reinforcing this active participation.

For project outputs to be achieved, the project needs to sponsor two priority public involvement activities: (1) Social Consultation Needs and (2) Capacity building.

Social Consultation activities include (1) *Community Awareness Workshops and Needs Assessment Survey,* (2) *Community Development Plans*, and (3) *Social Monitoring*. Capacity building activities include (4) *Social Scientist Support on the Core PAM Team, and (*5) *Local-level capacity building.*

MONITORING AND EVALUATION PLAN

Monitoring of the project will be undertaken by EPC with the support of external consultant. US $40,000 has been allocated for project evaluation. It will include data on performance indicators, a mid-term review, an analysis of stakeholder participation in the PAM planning process, and recommendations to adjust the implementation of the project, if required, and proposals for replicating project results throughout Yemen.

Annex 1 : Site descriptions.
Annex 2 : Map.
Annex 3 : Letter of endorsement.

Annex 1

Site descriptions

(A) JEBEL BURA'A PILOT SITE

1. Figure 1 indicates the location of the entire Jebel Bura'a as one mountainous outcrop and the Jebel Bura'a pilot area. The Jebel Bura'a pilot area is located between 43°24' - 43°28' E latitude and 14°51' - 14°54' N longitude.
The Jebel Bura'a pilot area is located in Al Hodeidah Governorate, within the district of Jebel Bura'a. The limits of the pilot area can be characterized as follows:

- northern: on the upper ridges of the mountain the villages of Bani Baqi, Al-Faesh, Al-Manwib and Bani Sulaiman;
- eastern: the village of Al-Jaylan;
- southern: the lower footslopes of Jebel Bura'a before coming to Wadi Al Aswad and the village of Haz Al Shama;
- western: in the lower plains before the entrance of Wadi Riqaf, the villages of Mahal Al Hirab, Al Khaiah, Mhala Al Shat and Al Rafee.

2. A total number of trees (32) and shrubs (33) species has been recorded by various observers in addition to additional observations during the rapid ecological assessment. Annual plants (herbs and grasses) have not been recorded systematically. During the rapid ecological assessment, an initial attempt was made to classify the densely vegetated part of Jebel Bura'a pilot area into a number of plant communities. It shows that at lower altitudes mainly there is predominance of increaser species due to the pressures of grazing and wood cutting;
As regards the fauna, several surveys by individuals have been carried out;
It shows a total of 3 amphibia and 12 reptiles, but it is likely that more species will occur if more systematic surveys were undertaken. Part of wildlife is concentrated around the water supply of this wadi. No systematic surveys have been undertaken of insects or bats. Surveys of birds have been most numerous, and show a total of 51 resident and 41 migratory birds.

3. The proposed Jebel Bura'a pilot area requires protection because of:

- its major biodiversity values from both an international and national point of view;
- its major landscape diversity (escarpment, wadi's, rock outcrops, high mountaintops) and its major plant and animal diversity (including over a hundred resident and migratory birds), some of which is still relatively unknown;
- its location in the intermediate zone between two different cultural zones (Tihamis and highlanders);

- its important production functions for the life support system of the local communities (forest products and grazing lands), as well as regulation functions (water balance, soil stabilization) and information functions (eco-tourism, research, training and education).

4. Suggested zonation and objectives for Jebel Bura'a pilot area

Zone type	**Objectives**	**Location**
Core protected area	- protection (and if possible increase) of existing biodiversity and ecological processes, in particular of the only permanent source of water (wadi Riqaf); - reference situation for climax flora and fauna conditions; - protection against all wood cutting and grazing, no more expansion of existing croplands; - development of research, training and education goals.	Along Wadi Riqaf between western limits of Suq es Sabt until the hamlet south-east of the rock outcrop (Bajili Bayt), including the various smaller tributaries and smaller wadi's from the surrounding slopes (largely inaccessible and not used). Thus, this zone includes all the forest that is still relatively dense.
Buffer zone area	- limited grazing and forest exploitation to protect biodiversity of core area and maintain critical ecological processes; - no cropping or other changes of permanent nature; - maintenance of main ecological gradients within the whole area and minimum areas for viable populations of key species (birds of prey and mammals).	An area around the core zone, including in the north the slopes until cropland terraces, south until croplands near Wadi Al Aswad (including the existing village protected area), in the west Suq es Sabt until the footslopes of Jebel Bura'a (entrance of Wadi Riqaf), in the east through the wadi Riqaf until the first cropland terraces.
Peripheral zone	- human land-use based on principles of sustained use (sustained yields) in order to improve productivity and reduce pressures on buffer zone; - introduction and testing out of new resource-use opportunities that are more sustainable.	The remaining areas of the pilot area, i.e. zones located near to the villages surrounding the pilot area where current exploitation activities are relatively intensive (through grazing and cropping)

(B) HAWF PILOT SITE

1. Figure 1 indicates the location of the entire Hawf region (area with dense vegetation) and the Hawf pilot area. The entire area with dense vegetation is located between 52°42' - 53°04' E latitude and 16°32' - 16°41' N longitude, while the Hawf pilot area is located between 52°55' - 53°04' E latitude and 16°37' - 16°41' N longitude.

The Hawf pilot area is located in Al Mahara Governorate, within Hawf District. The limits of the pilot area can be characterized as follows:

- northern: edge of the escarpment (upper limit before coming to the plateau);
- eastern: Oman border;
- southern: just behind the coastline and the villages (where shrublands of the footslopes start);
- western: Jebel Al Thur (behind Wadi Marara).

2. It has been reported that the middle elevations (at about 500 m elevation) constitute the areas with highest rainfall, and as a result here dense vegetation is found. Based on the description of the vegetation by Bilaidi (1989) and results of the rapid ecological assessment, the following plant associations can be observed:

- Commiphora spp. - Jatropha dhofarica shrubland from sea level to about 500 m;
- Anogeissus dhofarica - Tamarindus indica semi-deciduous forest and open parkland between 500 and 900 m altitude, more dense and developing into an evergreen forest at relatively moist locations;
- Acacia etbaica - Delonix elata drought deciduous woodland between 500 and 900 m altitude, which at relatively dry locations develops into an open woodland;
- Boswellia sacra - Euphorbia spp. deciduous shrubland at drier locations than the above.

The most dense and intact vegetation was observed at the following localities:

- along the Omani border: here, due to the previous presence of a Yemeni army camp, human land-use has been limited to extensive grazing and no clearing for cropping or intensive wood cutting has taken place. Relatively intact vegetation of the Anogeissus - Tamarindus and the Acacia etbaica types can be found along the ecological gradient.
- at steep localities: here, cropping is not possible, while grazing is more difficult; Major parts of the escarpment area would be too steep to climb even for goats;
- in the catchment areas and along the upper streambeds of springs: here, traditional protection measures have probably been undertaken, while on the other hand the very moist conditions also allow for luxurious plant growth. This is most prominently visible in the Wadi Marara area, along the stream bed and in the upper catchment area just under the escarpment.

At these localities, the age composition of trees and shrubs is good, with at least three strata being presented: higher trees (up to 12 m, diameter at breast height up to 45 cm), lower shrubs and young trees, and woody plant seedlings. Total canopy cover of these three strata easily exceeds 100%. Ground cover during the rainy season is almost 100%, except at degraded (over-grazed) locations.

Grazed vegetation is characterized by increaser species that are unpalatable, such as Dodonea angustifolia (at relatively moist locations on fallow lands) and Jatropha dhofarica (at intensively grazed locations at lower elevations), and by the absence of tree seedlings and remaining dried out herbaceous species. These vegetation types are mainly found at the lower footslopes in the vicinity of the two coastal settlements Jadib and Hawf, at middle elevations where conditions are suitable for cropping, and around temporary settlements throughout the area at higher elevations.
A more detailed vegetation survey is of crucial importance, for establishment of a reference situation for vegetation monitoring, and for identification of possible differences in terms of plant composition and plant species as compared to the Dhofar region.

3. The proposed Hawf pilot area requires protection because of:

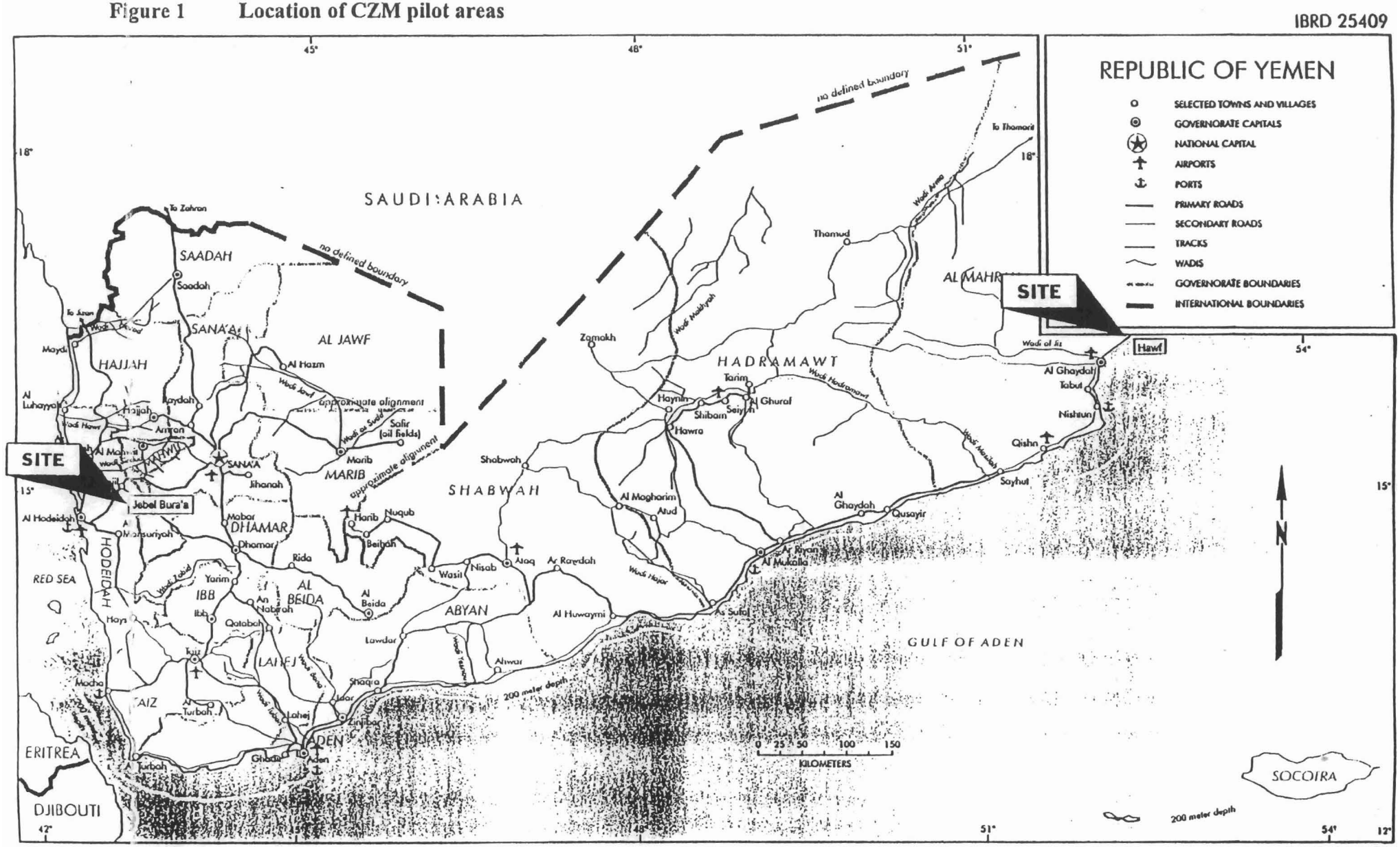
- its major biodiversity values from both an international and national point of view;
- its major landscape diversity (escarpment, wadi's, human influenced parklands and range lands) and its major pant and animal diversity, much of which is still relatively unknown;
- its unique system of 'transhumance' agropastoralism;
- its important production functions for the life support system of the local communities (forest products, rangelands, water supply), as well as regulation functions (drip precipitation, water balance, soil stabilization) and information functions (eco-tourism and research).

4. Proposed zonation and objectives for Hawf pilot area

Zone type	**Objectives**	**Location**
Core protected area	- protection (and if possible increase) of existing biodiversity and ecological processes, in particular of the catchment area of wadi Marara and other springs; - reference situation for climax flora and fauna conditions; - development of research and education goals.	1. north-south transect along Omani border (encompassing the entire ecological gradient) 2. densely vegetated upper part of Wadi Marara catchment area (above the spring)
Buffer zone area	- limited grazing and forest exploitation to protect biodiversity of core areas and critical ecological processes; - no cropping or other permanent changes; - establishment of linkages between different core areas and maintenance of ecological gradients and minimum areas for key species	1. upper parts of the entire pilot area, thus connecting the two core areas 2. lower part of Wadi Marara area, together with core area encompassing the ecological gradient

Peripheral zone	- human land-use based on principles of sustained use (sustained yields) in order to improve productivity and reduce pressures on buffer zone; - introduction and testing out of new resource-use opportunities that are more sustainable.	The remaining areas of the pilot area, i.e. all slopes at middle and lower elevations except along the Omani border and along Wadi Marara.

Figure 1 **Location of CZM pilot areas**



Republic of Yemen
Ministers Council
Environment Protection Council

بسم الله الرحمن الرحيم

الجمهورية اليمنية
رئاسة مجلس الوزراء
مجلس حماية البيئة

Ref. (NB-12) Date 10 / 12 / 1998

المرجع ( ) التاريخ / / ١٩م

Country Director for Yemen
The World Bank
1818 H Street, NW
Washington D.C 20433

Ref : Protected Area Management Project

I wish to refer to the request by the Environment Protection Council (EPC) for funding of the above cited project. In my capacity as Global Environment Facility Focal Point, I hereby endorse the request as submitted.

This letter also serves to confirm our agreement that EPC should be the Coordinating Agency of the GEF Grant for the above cited Medium Size Project.

Mohsen Ali Al-Hamadani
Chairman
Environment Protection Council

صنعاء - ص.ب : (١٩٧١٩) - هاتف : (٢٦٢٣٥٠) - فاكس : (٢٦٤٠٦٢) تلكس : ( )
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