

**UNITED NATIONS DEVELOPMENT PROGRAMME
GLOBAL ENVIRONMENT FACILITY
Proposal for PDF B Grant**

Country	India
Focal Area	Biodiversity
Operational Programme	OP's 1, 3, 4: Arid, Semi-arid, Forest and Mountain Ecosystem
Project Title	Demonstration project for the conservation and sustainable utilization of medicinal plant biodiversity
Funding requested (PDF B)	\$ 345,000 GEF <u>\$ 25000 FRLHT</u> /Government of India in-kind contribution \$ 370,000 Total
Anticipated Project	\$ 6.0 Million - GEF \$ 0.5 Million - UNDP \$ 4.0 Million – other donors <u>\$ 1.0 Million - Government</u> \$ 11.5 Million - Total
Requesting Agency	Foundation for Revitalization of Local Health Traditions (FRLHT) 50, MSH Layout, Anandanagar Bangalore 560 024, India.
Executing Agency	Ministry of Environment & Forests [MOEF]
Block A Grant Awarded	Not requested
Duration	PDF B 12 months (2000–2001); Full Project 5 years
Council Submission	March 2001

SUMMARY

1. The objective of the full project to be developed under this PDF B will focus on the conservation of globally important medicinal plant bio-diversity in four key regions of India: Northeast, Northwest, and Central India. These regions have been selected because they are: (a) rich in globally significant medicinal plant resources and these resources are under threat, (b) they are areas which harbour endemic species, (c) they represent the major forest types of the country and the demonstration of successful projects in these regions will provide the confidence for wider extension of the project to other states and regions of the country, (d) they complement the work initiated to conserve medicinal plants in the Western Ghats in Southern India.
2. The general reasons for threats to medicinal plants in these regions are: (i) over-harvesting of economically valuable species and (ii) rapid loss and degradation of forest habitats due to anthropogenic pressures. Conservation of medicinal plants in the Indian context requires a three-pronged approach, involving the establishment and management of three types of management units:
 - a) Conservation reserves, where the focus is on conservation of medicinal plant species;
 - b) Sustainable use reserves, where the focus is one both conservation and sustainable extraction
 - c) Production areas, where the focus is one sustainable cultivation of medicinal plant species.
3. While an appropriate policy environment already exists in India to permit the necessary interventions to conserve medicinal plant species, there are several barriers preventing the effective application and use of existing policies and regulations. These barriers include:

- The lack of adequate information on distribution of medicinal plant species, which is needed to identify the best locations for reserves and cultivation areas (biodiversity overlay);
- The lack of effective management guidelines for different types of reserve;
- The lack of high quality propagation materials to allow cultivation of medicinal plants, and the lack of capacity to raise and cultivate many species; and
- The lack of access to markets.

The GEF Full Project will serve to overcome these barriers by building on the institutional commitment within the selected State governments to establish and manage a reserve system to conserve medicinal plants. The proposed PDF B will assist in undertaking the necessary preparatory work, which will lay the foundation for the implementation of the Full GEF project.

1. BACKGROUND AND CONTEXT

4. Medicinal plants play an important role in supporting health care in India. According to the World Health Organization (WHO), 80% of the rural population in developing countries utilize locally available medicinal plants for their primary health care needs. According to All-India Ethno-Biological survey carried out by the Ministry of Environment and Forests, Government of India (GOI), in 1996, 8000 species of medicinal plants are in current use by local communities all over India.

5. About 90% of the country's medicinal plants occur in forest habitats. Only 10% of the medicinal plants are distributed in other landscape elements like open grasslands, agricultural pastures and in and around fresh water bodies, etc. Although the average rate of deforestation for India as a whole is modest (0.5%/year for 1990-1995), locally the rates can be much higher. There is consequently an urgent need to conserve the wild populations of India's medicinal plant diversity in prioritized forest regions of India.

6. It may be noted that India is one amongst those nations, which possesses a historical track record of having made significant global contribution by virtue of its traditional knowledge of the properties of plants. The global contribution of Indian spice plants marked a turning point in contemporary world history. It was the search for the 'black gold' from India in the 15th century that led to the discovery of the Americas and opened trade routes to the East. In the 21st century, given the global resurgence of the consumer interest in natural products, India's rich medicinal plants heritage of 8000 species and an estimated 40,000 herbal formulations, if conserved and sustainably utilized, certainly has global relevance. For India's own health needs, conservation of her medicinal plants will contribute to self-reliance of millions with primary health care.

Global and local demands for medicinal plants and the threats to these plants

7. India's ecosystems, including forests, drylands and mountains, are justifiably famous for their medicinal plant species. This is related both to the high levels of biological diversity within these ecosystems, as well as to the long cultural history linking human welfare with natural resources. This is why India supplies 12% of the world's requirements of medicinal plants.

8. The demand for medicinal plants is growing. In 1947, the annual turnover of the herbal industry was Rs.2,000 million. The Indian herbal industry's annual turnover is expected to touch Rs.40,000 million by the end of 2000. Today, 90% of the medicinal plants consumed domestically and exported are collected from the wild, and only 70 of around 700 species in trade

are obtained purely from cultivated sources. The threats to conservation of medicinal plant species can be summarized as follows:

a) *Destructive harvesting*

Analysis of parts of plants used for medicine shows that 70% of collection is destructive because parts like roots, bark, stem, heartwood and whole plants are harvested. Many other products are derived from fruit or seeds, the collection of which disrupts the reproductive cycle of the species. While low levels of harvesting usually associated with subsistence needs do not pose a threat to population viability, increased demands for these products have led to increased harvest rates. Thus, commercialization (including globalization) of the medicinal plant trade is an **underlying cause** of this threat.

b) *Loss of habitat*

In many parts of the country, conversion of forests or natural grasslands to agricultural use, as well as losses due to urbanization and infrastructure development pose a threat to the habitat of medicinal plant species. This trend is accentuated by inappropriate agricultural techniques on what are marginal agricultural sites, such that much of the converted land is subsequently abandoned, and more is therefore converted. Thus, this threat is related to the lack of alternative sustainable livelihoods (including sustainable harvesting of medicinal plants) as **an underlying cause**.

c) *Reduction in habitat quality*

Even where the natural habitat survives, unsustainable uses, such as timber extraction and grazing degrade the quality of the ecosystem, thus threatening medicinal plant species. As for loss of habitat, the **underlying cause** of this threat is the lack of alternative sustainable livelihoods.

The relative importance of these threats varies by species and locality. For example, in the North-east, the major threat to species like *Aquilaria malaccensis* is from over-harvesting.

Brief description of Project areas

9. The North-Eastern region of India has been recognized as one of the 18 bio-diversity hotspots of the world. It consists mostly of tropical evergreen and semi evergreen forests. The forest pockets of this region are known to harbor a number of threatened and rare species. The North-Eastern states selected for this project are, Meghalaya, Sikkim and Arunachal Pradesh, which harbor an estimated 1/8th of the known medicinal plants of India, i.e., around 1000 species. Some of the important threatened medicinal plants of this region are *Aquilaria malaccensis*, *Coptis teeta*, *Nardostachys grandiflora*, *Przewalskia tangutica* and *Panax sikkimensis*.

10. In the North-West are the states of Himachal Pradesh, Uttar Pradesh and the Great Tibetan Plateau covering Ladakh, Lahul and Spiti, harboring sub-tropical, temperate and alpine vegetation. There are around 1200 species of medicinal plants here of which many are endemic. These areas constitute important gene pool of medicinal plants used worldwide. A few examples of these are the plant species belonging to the following genera: *Valeriana*, *Viola*, *Podophyllum* and *Orchis*. Species like *Aconitum heterophyllum*, *Picrorhiza kurroa*, *Saussurea costus*, *Aconitum chasmanthum*, *Dactylorhiza hatagirea* and *Arnebia benthamii* are critically endangered in this region.

11. The Bastar region in the state of Madhya Pradesh in Central India has been selected as it harbors the richest biodiversity in Central India, and has the highest concentration of tribal population in India. This region is selected for both its biological and cultural diversity. The

region is reported to have around 900 species of medicinal plants. Major part of this tract consists of dry and moist deciduous forests. The dominant medicinal species here are *Rauvolfia serpentina*, *Celastrus paniculatus*, *Rubia cordifolia*, *Oroxylum indicum*, *Pterocarpus marsupium*, *Boswellia serrata* and *Buchanania lanzan*.

2. BASELINE SITUATION

12. The State governments in the selected states are committed to establishing a suitable framework for conservation and sustainable utilization of medicinal plants through baseline activities like

- a) establishing a network of *in situ* Medicinal Plant Conservation Areas (MPCAs), wherein the management regime will have a strong focus on conservation of medicinal plant species;
- b) identifying forest sites for sustainable use reserves, wherein sustainable harvesting of NTFP plant products will be promoted; and
- c) earmarking pockets of degraded forests suitable for cultivation of native medicinal plants.

13. Downstream activities for the production of medicinal plant propagules by stakeholders drawing on planting material supplied by the conservation network will also be undertaken by local agencies with domestic funds. In addition to the Ministries of the Environment and Forests, activities of various other government departments, like the Department of Bio-Technology, Ministry of Agriculture, Department of Science & Technology, Council for Scientific & Industrial Research (CSIR), and the Department for Indian Systems of Medicine are relevant to the conservation and cultivation of medicinal plant species.

Relationship with other on-going projects and institutional arrangements

14. DANIDA and the UNDP Sub-Programme have already initiated pilot projects for conservation of medicinal plants in the southern States of Kerala, Karnataka, Tamil Nadu, Andhra Pradesh and Maharashtra. This is a distinct bio-geographic region and complements the GEF project. Lessons learned from the WB/GEF medicinal plant project in Sri Lanka will also be reviewed in relation to their applicability in India.

15. The pilot project in South India has attempted to conserve a fraction of the country's medicinal plants, which are found in the Western Ghats. This project, because of its regional focus and the limited range of forest types it covers does not demonstrate the full range of ecological and social conditions under which medicinal plants need to be conserved in India. The project in South India has already indicated the need to:

- introduce the medicinal plants conservation concern into the training activities of the forest staff at all levels, from the forest guards to the senior levels like the District Forest Officers and Conservator; and
- add medicinal plants conservation research activities into the forest departments' regular research agenda.

16. The Indian State Governments in the project States identified in the GEF project will support infrastructural aspects of the conservation programme by dedicating forest lands for establishing: (a) *in situ* reserves, (b) NTFP sustainable collection programmes related to medicinal plants that are harvested from the wild, and (c) medicinal plant cultivation sites on degraded forests.

3. PROJECT RATIONALE AND OBJECTIVES

17. The present GEF proposal will build upon the experience from the Southern India pilot project. It is looking at other regions of rich bio-diversity where urgent action needs to be taken. It will serve as a model to show how *in situ* conservation of medicinal plants can also support and sustain *ex situ* programmes for cultivation of medicinal plants. It will also demonstrate the significance of traditional knowledge of plants and community participation in conserving a globally significant resource.

18. The objectives of this proposal address the conservation, health and economic dimensions of medicinal plants. The specific objectives of the full GEF project are visualized to be:

- *In situ* conservation of medicinal plants diversity in 4-8 sites in priority States in North-East, North-West and Central India, including a number of small reserves within each site, together with associated activities outside the reserves.
- Demonstrating viable models of sustainable harvest of wild medicinal plants (NWFP) from selected forest habitats, where NTFP collections are presently permitted (but not being collected sustainably) with long-term involvement of local communities.
- Providing access to medicinal plant raw materials to user via a joint forest management (JFM) system that will regenerate the degraded areas and encourage sustainable cultivation by local communities. Propagules will be provided through nurseries set up in the vicinity of the cultivation areas, which in turn, will be supported by community seed banks. This component will be funded through sources of co-financing.
- Strengthening capacities within the State Forest Departments, NGOs, local communities and Research Institutes to undertake medicinal plant conservation and sustainable utilization activities.
- Incorporation of medicinal plant conservation as an important component in the JFM policies and regulations.
- Building a computerized inventory of the medicinal plants of India as a whole with a special focus on globally significant plants and red-listed species, including their distribution. This component will be funded through sources of co-financing.
- The activities in the sustainable extraction reserves, community seed banks, nurseries, and cultivation areas will be supported through a site-based Medicinal Plants Consortium, based on public-private partnership. The project will establish micro-financing systems to support these community-based enterprises.

4. PROJECT COMPONENTS AND ACTIVITIES

19. The project will achieve these objectives through activities in the following themes:

a) Linking in situ conservation with sustainable harvesting and ex situ cultivation

Conservation of medicinal plant species at the selected sites will be based on the establishment and management of three types of management units, namely: conservation reserves, sustainable extraction reserves, and cultivation areas. The State governments will create a network of *in situ* reserves, or **conservation reserves**. The GEF project will assist this process by undertaking a biodiversity overlay so as to ensure that the location and size of these reserves is appropriate, at a landscape scale, for the long-term viability of medicinal plant populations within functioning ecosystems.

Sustainable use will be promoted in other forest reserves within the selected sites. Guidelines prepared during the PDF-B will be applied so as to regulate harvesting of medicinal plants. In addition, these **sustainable extraction reserves** will serve as a source of propagules for the cultivation of the medicinal plant species.

Ex situ cultivation of medicinal plants will be promoted on degraded areas, which have been previously cleared for agriculture and subsequently abandoned. Non-commercial nurseries will be established in the immediate vicinity of the **cultivation areas**. Propagules to be used in the nurseries will be collected from nearby sustainable use reserves, based on guidelines established during the PDF-B.

b) Promoting community ownership and management of the reserves and cultivation areas

Local community participation and benefit-sharing related to sustainable utilization of medicinal plants with a special focus on women will be a critical element of the operational strategy and will be incorporated into the implementation of all the three management units described above. Benefit-sharing will include activities related to protection and rewards for community knowledge of plants as per the provisions of the Convention on Biodiversity (CBD).

To permit the development of sustainable harvesting as an alternative to unsustainable harvesting, and of sustainable production of medicinal plant products as an alternative to other forms of unsustainable livelihoods, the project will promote the establishment of Medicinal Plant Consortia within each site, with access to micro-finance mechanisms to facilitate start-up of the various productive activities. The need for other forms of alternative sustainable livelihoods, and options for their creation will be explored during the PDF-B.

c) Support the implementation of co-management regulations through capacity building

While a favourable regulatory environment exists, there is little experience, either within government departments, or among the local communities in applying policies and regulations promoting community-based management. The project will undertake capacity building initiatives at all levels to facilitate and operationalize the community-based management. Particular attention will be given to strengthening capacities and reforming policies in the State Forest Departments and the Joint Forest Management Programmes, to incorporate conservation of medicinal plants as a part of their work programme and conservation strategy.

d) Research in support of management, rehabilitation and uses of medicinal plants

Best practices will be applied in designing management guidelines for conservation and sustainable extraction reserves and cultivation areas. However, an active programme of research, with a strong participatory nature, will be stimulated through the project to refine and improve

such guidelines based on increasing scientific knowledge and practical experience. The promotion of traditional medicine within the constraint of sustainable harvest levels will also be a focus of this programme of research.

20. The full size GEF project can catalyze the development of a National strategy for conservation and regeneration of globally significant medicinal plants and ensure increased access to health resources to the rural poor and create jobs and sustainable livelihoods. It has a special scope to involve women and thus promote gender equity. It will also serve to internalize "Medicinal Plants Conservation" into the institutional agenda of the Indian Forest Service and activities of local communities and grass-root NGOs and research institutes.

Responsible Institutions

21. The project will be executed by the Ministry of Environment & Forests, Government of India and a national NGO, Foundation for Revitalization of Local Health Traditions (FRLHT), Bangalore will act as the local implementing agency (Annex 1).

22. FRLHT has six years of experience in coordinating a medicinal plant project in 5 States of Southern India. It was awarded in 1998 the Norman Borlaug Award for its contribution to 'Conservation of Medicinal Plants'. In parallel to the GEF project, FRLHT will provide training and technical services to State Forest Departments, NGOs and Research Institutes in the project States.

23. The State Forest Departments will establish Medicinal Plants Conservation Areas (MPCAs) in project sites as part of state-wide network of MPCA. They will also establish sites for the regeneration of native medicinal plants on degraded forest lands to be managed under Joint Forest Management (JFM) and identify sites for demonstrating sustainable collection of NTFP will local community participation. NGOs, Research Institutes and local communities will be actively involved in implementation at each of the conservation sites. All the stake-holders including industry and representatives of the traditional medical community will also be involved in National and State-level Steering Committees which will monitor the projects implementation.

Sustainability

24. The forestry sector is expected to sustain the GEF project. The PDF activities will result in signing MOUs with the state forest department of the project states, wherein a commitment will be given by the concerned forest departments that they will establish, manage and maintain the 100 odd *in situ* medicinal plant reserves, the degraded forest sites selected for *in situ* regeneration activities and the selected NTFP collection forest sites from their own budget lines during (partially) and after (completely) the GEF project.

4. DESCRIPTION OF THE PROPOSED PDF B ACTIVITIES AND OUTPUTS:

25. The PDF-B phase will lead to the formulation of a project to conserve India's globally significant bio-diversity of medicinal plants in selected sites in the North-East, North-West, and Central India. This will be done by focusing on *in situ* conservation with linkage to regeneration programmes and efforts to promote sustainable cultivation. Such a project can be designed only by involving local communities, with a special focus on women and on equitable sharing of benefits arising out of the sustainable utilization of medicinal plants. The PDF B activities are designed to result in the formulation of Full size GEF project at the end of 12 months. A description of the PDF B activities is given below:

a) Stakeholder consultations (GEF: \$115,000)

- i. Organize State level workshops in the selected States with State Forest Departments, grass-root NGOs, representatives of local community, representatives of traditional medical community and Research Institutes, to prepare the “framework” of a State level action plan to conserve the State’s medicinal plants diversity and select specific project sites.
- ii. Support the State Forest Departments to set up a small Task Force for the selected sites within each State, including representation from all stake-holder groups, to prepare an ‘action plan’ for *in situ* conservation and sustainable utilization of medicinal plants on the selected sites.
- iii. Conduct CAMP workshops in each of the selected States in collaboration with local field botanists, foresters, NGOs and naturalists to identify threatened medicinal plants species and undertake analysis of specific reasons for medicinal plants being threatened in the region which can serve as an input for the ‘action-plan’ referred to above. The plan will include design of a nursery and seed banks network to supply quality planting materials for downstream cultivation activities.

Deliverables: Finalization of site selection, and identification of specific ecosystems and medicinal plant species to be targeted by the full project; social participation plan

b) Data collection and analysis (GEF: \$90,000)

- i. Prepare, in collaboration with research institutes, site-level inventories of medicinal plants in the selected States and identify species of conservation concern in each site. Extensive literature search and previous studies, inventories and ethno-botanical reports will be consulted.
- ii. Carry out a socio-economic study across selected sites across the selected States at proposed conservation sites to record - existing JFM, NWFP community participation arrangements, current patterns of medicinal plants trade from forest habitats and socio-economic profiles of local communities in proposed medicinal plants conservation sites. Requirements for planting materials will also be identified.
- iii. Investigation of location-specific threats to medicinal plant species and reasons for degradation and loss of habitats.

Deliverables: Reports on socio-economic status of local communities; site level inventories of medicinal plant species of conservation concern, and threats to medicinal plant species habitats.

c) Strategy formulation (GEF: \$80,000)

- i. Plans for the establishment of nurseries and seedbanks will be developed to support the cultivation areas to be established in the Full Project. To avoid the possibility of inadvertent outcrossing depression due to mixing of genetically distinct populations, strict guidelines will be formulated governing the origin of propagules to be used at each nursery. Inevitably, due to natural variation in seed production, availability of propagules for any given species will vary from year to year, and in some years there will be a shortfall for some species. The propagation guidelines will emphasize that, while seedlings to be established in cultivation areas may be obtained from other nurseries in the event of a shortfall, nurseries may not obtain propagules from forest reserves other than those defined in the guidelines. Commercial nurseries, due to the

pressures of profitability, are likely to abrogate guidelines in the event of a shortfall. For this reason, the nurseries will be non-commercial and community-managed.

ii. Capacity building needs identified by the stakeholder consultations and data collection activities will be used to formulate an appropriate approach to capacity building.

Deliverables: Guidelines for management of each type of reserve and cultivation areas; identification of research requirements; capacity building strategy.

d) *GEF full project brief preparation (GEF: \$60,000; Government: \$25,000)*

i. Consolidate the action plans of the State Forest Departments, results of CAMP workshops and field surveys and socio-economic studies to work out incremental and baseline activities, and collate the information into a project brief as per the GEF guidelines.

Deliverables: A full project brief including: (a) identification of specific project sites, and the locations of strict reserves, sustainable use reserves and cultivation areas, and (b) institutional arrangements to empower local communities to sustainably manage reserves, cultivation areas and nurseries, including plans for training, as required. The brief will also include an incremental costs analysis, which will identify required levels of co-financing. Sources of the required co-financing will also be identified.

Implementation arrangements

26. A national level steering committee will be formed, chaired by the MOEF, and including representatives of other relevant government agencies, medicinal plant user groups, and UNDP. The function of the national level steering committee will be to oversee delivery of all PDF-B outputs, responsibility for which will largely fall to FRLHT and state-level agencies. Within each of the selected states, a local steering committee will also be formed, consisting of state government agencies and community groups from within the selected sites. The function of these local steering committees will be to take the state-level decisions relating to site selection, community participation plans, and other elements of the full project.

6. ELIGIBILITY

27. This project falls under GEF focal area of biodiversity conservation. India has ratified CBD (18 February 1994) and meets all other eligibility requirements.

7. NATIONAL LEVEL SUPPORT

28. Today there is recognition and concern in the Government of India about the need for promoting medicinal plants conservation. This is reflected in the National Bio-diversity Action Plan (para 5 of Chapter II) as also in the recent policy initiatives of the Planning Commission of India, which has set up a National Task Force on "medicinal plants" conservation in August 1999. Medicinal Plants are also reflected in the National Forestry Action Programme prepared by the Ministry of Environment & Forests (MOEF), United Nations Development Programme (UNDP) and Food & Agricultural Organization (FAO) in June 1999. The document (page 11, point No.14) talks about the economic importance of medicinal plants collected from the forest habitats. Medicinal plant schemes related mostly to *ex situ* activities are also underway with support of various government agencies like the Ministry of Environment & Forests, the Department of Bio-technology, Council for Scientific & Industrial Research, Department of

Science & Technology, Department of Agriculture and Department of Indian Systems of Medicine. Thus medicinal plants conservation is very much on the agenda of the Government of India, Ministry of Environment & Forests. The topic is also a major focus of UNDP's Country Cooperation Framework, through which the pilot project in the Western Ghats has been supported.

29. Medicinal plants as a category are not provided with any particular protection as per the current forest laws. Plant and animal species, which are officially accepted as being 'endangered', are protected under the Wild Life Protection Act. Except for the medicinal plants identified under CITES (11 species), no other medicinal plants are protected by law. The 100 medicinal plant reserves that are proposed to be created would be protected by official notifications of the forest departments as "No Harvest Zones", and the medicinal plant reserves would not be worked upon under normal silvicultural practices of the forest department. They would enjoy long-term protection and be maintained as '*in situ* field gene banks' of medicinal plants of the project States.

8. JUSTIFICATION

30. A PDF Block-B grant is needed to assist over a period of 12 months in the preparation of the "operational" framework of a full size GEF proposal. The Government of India has requested the United Nations Development Programme (UNDP) vide their letter No.3 (2)/01/98-IC-I dated 25.8.99 to assist in the preparation of full size GEF project on medicinal plants conservation.

31. As explained in above, state and national level policy support for conservation of medicinal plants exists, translating the policy level support into an 'operational plan' for a full scale consideration project needs financial support and a coordinating mechanism.

32. The policy support is akin to the availability of a large "fertile field". Fertile fields alone do not automatically result in production of food crops. A cropping plan, network of farmers, financial investment and the development and implementation of a management strategy are also essential to ensure success. In the medicinal plants conservation context, the barrier to the implementation of effective programmes for conservation is lack of administrative initiative based on a well conceived, coordinated national action plan. The PDF-B grant will kick-start the process of preparing this plan.

33. The PDF Block B grant will help select project sites, including locating strict reserves, sustainable use reserves, and cultivation areas, complete threat analysis studies and assist in firming up of institutional arrangements for implementation of the full size GEF project. These arrangements will involve key government and non-government agencies. The State Forest Departments, local communities, grass-root NGOs, conservation and agricultural research institutes, herbal industry and the community of traditional physicians are the key agencies who need to get involved in the implementation of the full GEF project. Suitable MOUs and agreements between key actors, for implementation of the project, will be developed in the PDF B phase.

34. The PDF Block B grant envisages a series of State level workshops with all these stakeholders. One brainstorming workshop in every State is visualized at the beginning of the planning process in order to prepare a 'framework' for the plan and another at the end of the PDF B process to present the operational plan to the stakeholders.

9. WORKPLAN AND BUDGET

Output	Activities	Months
Guidelines for preparing State level action plans for conservation of medicinal plants	Organize State level workshops in selected States with State Forest Departments, grass-root NGOs, representatives of local community, representatives of traditional medical community, herbal industry and Research Institutes, to prepare the framework of a State level action plan to conserve the State's medicinal plants diversity.	1 to 2
A State level action plan for conservation of medicinal plants	Support the State Forest Departments and assist a Task Force in the selected States to prepare an 'action plan' for in situ conservation and sustainable utilization of medicinal plants in the State. Present the draft plan to all the stakeholders for their approval in a state level workshop towards the end of the PDF B process	2 to 3
State level inventories of medicinal plants of the Project States. State-wise threat analysis of medicinal plants with special reference to selected sites	Involve Research Institutes and NGOs in the State to take up the task with technical guidance from FRLHT. Involve Research Institutes / Consultants to undertake threat analysis based on agreed criteria.	3 to 4
State-wise list of threatened species with threat categories assigned on IUCN parameters	Conduct threat analysis and CAMP workshops in each of the selected States in collaboration with local field botanists, foresters, NGOs and naturalists to identify threatened medicinal plants species.	4 to 5
Strategy for involvement of local communities in benefit-sharing schemes for sustainable utilization of medicinal plants including preparing guidelines for protection and rewards for local knowledge of medicinal plants in line with the provisions of CBD.	Apply provisions of the Indian Biodiversity Act with respect to 'MTAs' and 'ITAs'.	5 to 6
Research guidelines for understanding 'species recovery programmes for saving threatened species & for studying sustainable models of collection of plants from the wild'.	Contract researchers familiar with applications of conservation biology to develop guidelines with special reference to conditions prevailing in selected States and sites.	6 to 8
Report on the socio-economic profile of conservation sites in the project States.	Carry out, in collaboration with NGOs, a socio-economic study across samples sites across the selected States to record - * existing JFM, NWFP community participation arrangements, * Current patterns of medicinal plants trade from forest habitats and local community role * socio-economic profile of local communities in	8 to 10

	<p>proposed medicinal plants conservation sites</p> <ul style="list-style-type: none"> • planting material and raw material requirements of user groups. • Location-specific reasons for over-harvesting of medicinal plants and for degradation and loss of forest habitats. 	
The full size GEF proposal	Consolidate the State level action plants and results of CAMP workshops and socio-economic studies to prepare the full size GEF proposal.	10 to 12

PROJECT BUDGET COVERING UNDP/GEF CONTRIBUTION

Budget line	Description of PDF activity	Total		2000		2001		Govt. & other support
		wm	US\$	wm	US\$	wm	US\$	
10	Project personnel							
11	International experts							
11.01	Incremental cost expert (35 days @ US\$400 per day)	1	14,000	1	14,000			
11.02	Medicinal Plants & Public Policy Advisor (35days @ US\$400 per day)	1	14,000	1	14,000			
11.99	Sub total		28,000		28,000			
13	Administrative and support personnel							
13.01	Administrative assistants (Two @US\$ 600 per month)	20	12,000	18	10,800	2	1,200	
13.99	Sub total		12,000		10,800			
15	Duty travel							
15.01	International travel (Four round-trip airfare, @ US\$2500 each. US\$ 200/day, DSA for 60 days)		22,000		22,000			
15.02	Local travel		40,000		30,000		10,000	
15.99	Sub total		62,000		52,000		10,000	
16	Mission costs							
16.01	Monitoring and evaluation		3,500		3,500			
16.99	Sub total		3,500		3,500			
17	National professional project personnel							
17.01	Project Manager (US\$2000 Per month)	10	20,000	9	18,000	1	2000	
17.02	Medicinal plants Conservation Expert (8 months @ US\$1500/Month)	8	12,000	8	12,000			
17.03	Botanist (8 months @ US\$1500/Month)	8	12,000	8	12,000			
17.04	Socio-economic expert (10 months @US\$1500/Month)	10	15,000	9	13,500		1,500	
17.99	Sub total		59,000		55,000		3,500	
19	Component total		164,500		149,800		14,700	
20	Sub contracts							
21.01	GIS support		16,000		16,000			
21.02	Financial sustainability study		12,000		12,000			
21.03	Equipment rental		35,000		35,000			
21.04	Project inception workshop		30,000		30,000			
21.05	Local workshops & consultations		25,000		25,000			
21.06	Final workshop		30,000		30,000			
21.99	Sub total		148,000		148,000			
29	Component total		148,000		148,000			
50	Miscellaneous							

Budget line	Description of PDF activity	Total		2000		2001		Govt. & other support
		wm	US\$	wm	US\$	wm	US\$	
52	Reporting and communication costs		15,000		10,000		5,000	
53	Sundries		7,500		7,000		500	
54	Project support services		35,000		8,000		2,000	25,000*
59	Component total		32,500		25,000		7,500	
90	Total		345,000		322,800		22,200	
99	UNDP/GEF		345,000		322,800		22,200	370,000

- The Ministry of Environment & Forests, Government of India, the State Forest Departments and FRLHT will contribute US\$ 25,000 in kind support in the form of staff, office space, communication and logistical support.

Abbreviations

CAMP	Community Associated Medicinal Plants
CBO	Community Based Organisation
DANIDA	Danish International Development Administration
FRLHT	Foundation of Revitalization of Local Health Traditions
JFM	Joint Forest Management
GOI	Government of India
IUCN	World Conservation Union
ITAs	Information Transfer Agreements
MOEF	Ministry of Environment & Forests
MPCA	Medicinal Plants Conservation Areas
MTAs	Material Transfer Agreements
NGO	Non-Governmental Organization
NWFP	Non-Wood Forest Products

ANNEX 1

Capacity and Achievements of Foundation for Revitalization of Local Health Tradition (FRLHT), Bangalore, India

Foundation for Revitalization of Local Health Tradition (FRLHT), a NGO based in Bangalore, India, has been implementing a pilot medicinal plants conservation project "Strengthening the Medicinal Plants Resource Base in India in the context of Primary Health Care" in three states of Southern India (Karnataka, Tamil Nadu and Kerala) for the past seven years. The project is funded by DANIDA (Danish International Development Agency) with a budget of 11,000,000 USD for a period of eleven years, under a bilateral aid agreement with the Government of India (Ministry of Environment and Forests).

The DANIDA project focused on conservation of medicinal plants both *in situ* and *ex situ*. As part of the *in situ* conservation effort, 30 Medicinal Plant Conservation Areas (MPCAs) were established in the three above-mentioned states (20 in Western Ghats and 10 in the Deccan Plateau), covering all vegetation types of South India, in a land area of 5829 ha, with individual MPCA's between 80-350ha. They have also established 10 Medicinal Plants Development Areas (MPDAs) where in the local community and the forest department would plant and conserve medicinal plants on degraded land and use them sustainably. As a part of the *ex situ* conservation effort, 15 Medicinal Plants Conservation Parks (MPCPs) were established, which functioned both as field gene banks and center for community training programmes with focus on revitalization of medicinal plant use. DANIDA project also has a strong component focusing on education, public awareness and income-generation for local communities.

In the UNDP CCF project in Maharashtra and Andhra Pradesh FRLHT has been responsible in providing technical guidance and training support to Environmental Protection Training and Research Institute (EPTRI), Andhra Pradesh, and Rural Communes in Maharashtra, strengthening the capacities of these institutions.

Established in 1993, FRLHT presently employs about 46 people, (40 of them are botanists, foresters, computer professionals and people with background in agriculture, medicine, ecology, communication, management and administration. It also has a system under which 4/5 senior forest officers' work on deputation with FRLHT for a period of 3-5 years). FRLHT's current role involves close interaction at senior levels with Government of India, State Governments and with Research Institutes, NGO's and local communities. Its staff has been interacting at all these levels effectively and FRLHT has earned a good reputation in the conservation field. This is reflected in the prestigious Norman Borlaug Award given to FRLHT in 1998, in recognition of its contribution to conservation of medicinal plants. Further information on FRLHT is available at <http://ece.iisc.ernet.in/ernet-members/frlht.html>.



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Dear Dr. Monga,

Kindly refer to your letter of 29th Feb, 2000 regarding the PDF-B proposal for Conservation and Sustainable Utilisation of Medicinal Plants Biodiversity. The issue has been examined in the Ministry and we hereby convey our in-principle endorsement to the PDF-B proposal.

With regards,

Yours sincerely,

(Ujjwal Choudhary)

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