ECODEVELOPMENT PLANNING AT INDIA'S GREAT HIMALAYAN NATIONAL PARK FOR BIODIVERSITY CONSERVATION AND PARTICIPATORY RURAL DEVELOPMENT

SANJEEVA PANDEY
WILDLIFE INSTITUTE OF INDIA
CHANDRABANI, POST BOX 18
DEHRADUN-248001 INDIA

AND

MICHAEL P. WELLS
TUNNELVEIEN 3
3400 LIER
NORWAY

Summary: The existing network of Protected Areas (PAs) in India is the major effort aimed at biodiversity conservation at the national level. The sustainability of PAs is heavily influenced by local people who are largely dependent on natural resources (fuel, fodder, minor forest products) for their livelihood. While all PAs are surrounded by historically resource-dependent communities, several of them have villages within their core areas too. This has necessitated an alternative approach to natural resource management which aims to integrate the interests of conservation with those of the nearby resource dependent communities. The case of the Great Himalayan National Park illustrates and incorporates the lessons from Integrated Conservation and Development Projects (ICDPs) implemented elsewhere in the world.

Introduction

Efforts to conserve forests and wildlife have gradually begun to shift away from law enforcement and use restrictions during the last two decades, and towards more participatory approaches emphasizing equitable and sustainable use of natural resources by local people (McNeely & Miller 1984). This change in approach is particularly important in remote rural areas of developing countries where biodiversity is concentrated, where poverty tends to be pervasive, and where the reach of government development programs is often limited (Wells 1992; 1994). This has meant a new emphasis on finding ways of deriving new economic opportunities from biological resources which do not lead to further losses of biodiversity (McNeely 1988). Beyond the economic principles involved increasingly it is recognized as neither politically feasible nor ethically justifiable to attempt to deny the poor the use of natural resources without providing them with alternative means of livelihood (Wells & Brandon 1992). Enlisting the cooperation and support of local people has thus emerged as a major priority of biodiversity conservation in protected areas (McNeely *et al*. 1990; WRI, IUCN & UNEP 1992).

An increasing number of pilot or demonstration projects have been launched in developing countries with the goal of linking biodiversity conservation with improvements in human welfare (McNeely 1988; West & Brechin 1991; Western *et al*. 1994). These projects have often been based on innovative land use strategies, including biosphere reserves, multiple-use conservation areas, buffer zones adjacent to protected areas, extractive reserves, social forestry, and a variety of other approaches. Such approaches to linking biodiversity conservation with local social and economic development have been referred to as integrated conservation development projects (ICDPs) (Brandon & Wells 1992; Wells & Brandon 1992).

In India, efforts to link protected area management with local social and economic development programs are referred to as ecodevelopment (Panwar 1992). Although the concept of ecodevelopment has been under discussion in India for more than a decade, practical steps towards developing and testing workable approaches in the field have begun only recently. Various definitions have been proposed, including: (1) "a site-specific package of measures, developed through people's participation, with the objective of promoting sustainable use of land and other resources, as well as farm and off-farm income generating activities which are not deleterious to protected area values" (Panwar 1992); and (2) "limited rural development, designed with the participation of local people, for the purpose of reconciling genuine human needs with the specific aims of protected area management" (Pabla *et al*. 1995).

India has a large protected area network representative of its biological diversity (Rodgers & Panwar 1988). But some essential steps in protected area establishment have met strong resistance, notably the completion of legal formalities and regulations covering resource use by local people (Panwar 1992). Relations between villagers and park authorities often have been poor, and hostile clashes are not uncommon. Two problems recur frequently. First, national parks and sanctuaries usually prohibit local people's access to forest resources on which they had previously depended for grazing their cattle and for collecting both fuelwood and construction timber. Second, there has been a dramatic and sustained increase in the severity of crop damage, livestock losses and sometimes human fatalities inflicted by protected wildlife in villages close to park boundaries, with minimal compensation available (Kothari *et al*. 1989). The stage is thus set for new approaches to protected area management in India which give considerably more attention to relations with local

communities.

The Great Himalayan National Park (GHNP) has recently become one of the first national parks in India to receive international development assistance for ecodevelopment. Starting in late 1994, GHNP will receive approximately US $2.5 million over five years for ecodevelopment. This amount is being financed as a component of a much larger World Bank forestry sector loan to the Government of India. The ecodevelopment program at GHNP is to be based on an `indicative' plan by the Indian Institute of Public Administration (Mehta *et al*. 1993). International development assistance for ecodevelopment is being sought for additional protected area sites in India, mainly through the Global Environment Facility. But GHNP is likely to receive particularly close scrutiny as one of the pioneers. This paper looks at the early ecodevelopment planning effort at GHNP and explores the emerging issues.

The National Park and the Ecodevelopment Project Area

The Great Himalayan National Park (GHNP) is in the Kulu district of Himachal Pradesh (between 31^0 38'28"N and 31^0 54'58"N, and 77^0 20'11"E and 77^0 45'00"E) and lies between 2000m and 5500m above mean sea level (Singh *et al*. 1990). The northern and eastern boundaries of the Park are under permanent snow, while the southern boundary is along a high ridge and almost impassable. There are no roads to the Park, and the western boundary is approachable only along bridle paths through rugged terrain along the Parbati, Jiwa, Sainj and Tirthan rivers.

The Himachal Wildlife Project (HWP) comprising of scientists from U.S.A., U.K. and India surveyed the upper Beas region in 1980, in association with the Himachal Pradesh Department of Forest Farming and Conservation (DFFC) (Gaston *et al.* 1981). As a result, an area comprising the catchments of Jiwa, Sainj and Tirthan rivulets was considered for constituting the GHNP in the Kulu district of Himachal Pradesh. The initial notification was issued in 1984 under the Wildlife (Protection) Act of India, 1972. According to the provisions of this Act, the final notification of the creation of the Park can be issued only after the existing claims in the proposed National Park area have been disposed of by the State government. However, in case of a Wildlife Sanctuary (WLS) a considered level of biotic interference can be allowed.

Since start of the Conservation of Biodiversity (CoB) project in 1994, the legal status of the park has undergone change. In 1994 the 90 sq kms area in the central portion of Sainj valley has been notified as a WLS. There are two villages of Shakti and Marore with a human population of 66 in this sanctuary. Due to 1994 notification, these two villages although technically `outside' the National Park, are physically located between two parts of the GHNP. In addition to it, an area of 235 sq kms of the upper portion of Parbati valley has been added to the Park (Figure 1). Thus, the total National Park area at the moment is 765 sq kms. Another major change is notification of GHNP Ecodevelopment Project Area (EPA) extending upto 5 kms. on the western boundary. This is an area of 255 sq. kms. covering about 113 small villages, comprising 1600 households with a population of 11000 people (Mehta *et al.* 1993). In addition, the Tirthan WLS of 61 sq kms on the western periphery of the park exists since 1976 (Singh S. *et al.* 1990). Thus the

total area under the GHNP conservation unit is 1,171 sq. kms.

Biotic Characteristics and Significance of the Area

The local climate is typical of the western Himalaya. Precipitation is generally moderate (1,100-1,500mm), becoming abundant during the monsoon season. Snow falls throughout the Park in winter, and persists above 3,000 m (Gaston and Garson 1992). The flora and fauna of the park reflects centuries of human impacts, perhaps the most obvious of which are due to grazing by domestic livestock, which has heavily degraded some areas. Some alpine plant communities have been substantially modified by the collection of medicinal herbs. The populations of large ungulates, pheasants, and presumably their dependent carnivores, have all been depressed by poaching (Gaston and Garson 1992).

The vegetation of the Park shows distinct altitudinal zonation, and the plant communities are representative of temperate and alpine regions. Gaston *et al*. (1981) documented five broad forest types in the area. Of these, the undisturbed oak forests at low and middle altitudes are now rare outside the Park. The Park's forests contain numerous artificial clearings or grazing areas known locally as *thach*. These are used by domestic livestock, and as camping areas for the graziers. The alpine meadows above 3,800 m have a high diversity of herbaceous species, many of which have economic value as a result of their medicinal or aromatic properties. These include *Aconitum violaceum, Salvia moorcroftiana, Viola serpens, Jurinea macrocephala, Rheum emodi, Berginia ciliata, Picrorhiza kurroo, Saussurea graminifolia*, etc. (Rastogi 1992). Dhupe (*Jurinea dolomiae*) is the most heavily exploited plant in the Park. The usable part of the plant is its tap root, which is dried and converted to incense. Extraction from the alpine areas disturbs the ground extensively. In addition, the herbs *Aconitum heterophyllum, Dactylorhiza hatagirea* and *Valeriana jatamansi* are dug out and sold at a comparatively high price (Table 1).

The park supports a very diverse wildlife population. Notable mammals found in the Park include Serow (*Capricornis sumatraensis*), Himalayan Tahr (*Hemitragus jemlahicus*), Goral (*Nemorhaedus goral*), Blue Sheep (*Pseudois nayaur*), Himalayan Black Bear (*Selenarctos thibetanus*), Himalayan Brown Bear (*Ursus arctos*), Himalayan Red Fox (*Vulpes vulpes*) and the vulnerable Musk Deer (*Moschus moschiferus*) listed in Red Data Book (IUCN 1974; Green 1986). The biological diversity of the Park is enhanced by a variety of small mammals (Table 1).

The avifauna of GHNP has been reported only recently. The Park falls within one of the globally important Endemic Bird Areas (D02: Western Himalaya) identified by the ICBP Biodiversity Project (ICBP 1992). 183 bird species including 132 passerines and 51 non-passerines have been recorded from the Park which is comparable with 71 non-passerines and 150 passerines recorded throughout the hilly regions of Himachal Pradesh above 1,500 m altitude. This also suggests that the Park supports a substantial proportion of all the species occuring within its altitudinal range in the western Himalaya (Gaston *et al.* 1994).

The Park receives at least 50 species which are summer visitors. They include Eurasian Woodcock (*Scolopax rusticola*), cuckoos (*Cuculus*), Oriental Turtle Dove (*Streptopelia orientalis*), swifts, Grey Nightjar (*Caprimulgus indicus*), drongos (*Dicrurus*), swallows, flycatchers, warblers, chats and thrushes. Among raptors, species such as Black Eagle *Ictinaetus malayensis* and Booted Eagle (*Hieraaetus pennatus*) were recorded only a few times. Peregrine Falcon (*Falco peregrinus*)

appears to have become quite rare in western Himalaya and could not be recorded from the Park. Passerines are abundantly represented in the Park by babblers (Garrulacinae and Sylviinae: Timaliini, 14 species), flycatchers (Muscicapinae: Muscicapini, 11 species), chats (Muscicapinae: Saxicolini, 11 species), warblers (Acrocephalinae, 14 species), and thrushes (Turdinae, 12 species). Special mention can be made of three species, White-browed Shortwing (*Brachypteryx montana*), Little Pied Flycatcher (*Ficedula westermanni*), and Rufous-vented Tit (*Parus rubidiventris*) which have extended their range to the north-west (Gaston *et al.* 1994).

Galliforms in GHNP constitute a very important and spectacular component of biodiversity. The GHNP is one of only two National Parks in the world with a population of the endangered Western Tragopan (*Tragopan melanocephalus*) (Collar and Andrew 1988). Another endangered pheasant, the Chir (*Catreus wallichii*) is present on the steep, south-facing grassy slopes. Monal (*Lophophorus impegenus*), and Koklas (*Pucrasia macrolopha*), are abundant in the temperate forest zone while Kaleej (*Lophura leucomelana*) occurs in small numbers below 2,000 m (Pandey 1993). The sightings of Snow Partridge (*Lerwa lerwa*), Hill Partridge (*Arborophila torqueola*) and Himalayan Snowcock (*Tetragallus himalayensis*) are very few.

Biogeographically, the location of GHNP at the junction of world's two major faunal realms, i.e. the oriental to the south and palaearctic to the north (MacKinnon *et al.* 1986) makes it an important site. The temperate forest flora-fauna of GHNP represents the western most extention of the Sino-Japanese Region. The high altitude ecosystem of Northwest Himalaya has phytogeographic affinities with the adjecent Western and Central Asiatic region (Mani 1994).

Occurrence of less disturbed temperate and alpine ecosystems in a geographical compact area, and inaccessible and rugged terrain representing the ecological, geomorphological and biological values of the North-west Himalaya make GHNP a viable conservation unit. The boundaries of GHNP are contiguous with the Pin Valley NP in Trans-Himalaya, and Rupi-Bhaba WLS in Sutlej catchment. Another PA adjecent to the GHNP is Kanawar WLS (Figure 2). Together, all these PAs have varied wildlife habitats, and full range of western Himalayan biodiversity, from tropical to alpine and Tibetan. Rodgers and Panwar (1988) identified this area as being of foremost priority for biodiversity conservation in India. The World Conservation Monitoring Centre has identified the western Himalayan as one of the five Centres of Plant Diversity and Endemism in India and in need of urgent protection. Beyond its biological significance, the suitability of this area for conservation is enhanced by its relatively low human population, a very low rate of tourist visitation, in addition to local economy based on traditional undertakings. GHNP's relative inaccessibility also makes it easier to protect than some other areas of comparable ecology.

As in many of the region's protected areas, research in GHNP has so far been limited. Only the Park's birds and large mammals have been studied (Gaston and Garson 1992, Gaston *et al.* 1994, Gaston *et al.*1981). The species diversity of plants, invertebrates, reptiles and amphibians and small mammals has yet to be fully described. The biotic impacts of human pressures on the area's various ecosystems have yet to be scientifically examined.

GHNP and Local Communities

Local people use the Park mainly for grazing their livestock (sheep, goats and some cattle) and collecting herbs and mushrooms. About 35,000 sheep and goats graze in the Park during the summer months (Mehta *et al*. 1993). About 2,500 people collect herbs (August-October) and mushrooms (April-June) each year (Gaston & Garson 1992). Some neighbouring communities depend heavily on the Park during the summer months, while others - where villagers subsist on basket-making, handloom-weaving and horticulture - hardly affect the Park at all. Most villagers using the Park have stated their willingness to give up herb collection or livestock grazing in the Park if other means to generate income were available (Mehta *et al*. 1993; Pandey, pers. comm).

Many people living both inside and outside the Ecodevelopment Project Area claim traditional rights to use the Park's resources. In fact, local people claim rights over the demarcated protected forests which make up more than 75% of GHNP (Sharma, 1987; Singh, S. *et al*. 1990). These rights are complex, ill-defined and are currently subject only to token regulation or management. Until these rights are resolved, the National Park cannot be officially gazetted. Anecdotal evidence strongly suggests that current levels of use of the area's natural resources are unsustainably high. Clarifying these local access rights and developing a sustainable resource management regime in partnership with local communities is therefore likely to be a precondition of an effective Ecodevelopment Project.

Local resource utilization continues to intensify as modern research finds new uses for hitherto unmarketable trees and plants (Gadgil and Guha 1993). For example, it has been estimated that 20-year old tree of *Texus bacata* which occurs in patches in GHNP can yield up to 30 kg of leaves and 5 kg of bark to produce 4 gm of taxol worth US$10,000 (Shukla *et al*. 1994). New finds in the pharmaceutical industry have encouraged the commercialization of medicinal herbs and animal products, providing strong incentives for local harvesting. Some herbs, such as *Aconitum heterophillum, Nardostachys jatamansi, Dactyloirhiza hatagirea* and *Jurinea macrocephala*, found in GHNP have only become commercially valuable during the last two decades. Marketing these herb products is relatively easy, as there are hundreds of commercial herb dealers in India (Mehta *et al*. 1993).

The origins of local resource access rights

The remote and relatively-isolated indigenous communities of the Jiwa, Sainj and Tirthan Valleys have each developed distinct traditions and customs (Harcourt, 1871), and each of these communities has their own local faunal and floral taxonomy. Neither this taxonomy nor the local history of natural resource use and conservation practices has been well documented, although limited information has been extracted from edicts (an order sent out by the local rulers), copper plate inscriptions, and reports on land and forest settlement (Gazetteer 1918; Harcourt 1871; Anderson 1886). The penetration of people from Punjab, Tibet and Nepal into the Kulu region in the 19th and 20th century, especially after India's independence in 1947, stimulated a social transformation (Singh 1989). Improved - if still limited - communications and penetration of the market economy has led to an increase in local resource exploitation, especially timber from the forests.

In more modern times, the British Colonial Administration commissioned forest and revenue settlements in the 1880s which recorded the details of the rights awarded to people in the local forests. Forest Settlement reports recorded the names of local forests, local peoples' access rights and the allocation of these rights to specific individuals and households. But local use of the forests could be restricted whenever the Forest Officers considered it necessary to ensure the regeneration of timber/other useful species.

Not surprisingly, conflicts then emerged between the local communities, whose access to and use of resources had become restricted, and the officials enforcing regulations (Tucker 1991). The Forest Settlement Report for Kulu District (hereafter referred to as Anderson's Report) defined local peoples' forest use rights and concessions. Only individuals who owned land and paid land revenue were allowed use rights, and these rights could only be exercised during the life of the right holder. Anderson's Report provided very limited rights of controlled grazing in the forests. But the rights to cut grass, to remove medicinal roots, fruits, flowers, dry fallen wood (except deodar, walnut, box and ash), to cut bamboos, and to take splinters of deodar and kail stump, were allowed in all forests without requiring permission.

Anderson's Report observed that it was impossible to specify who exercised rights in undemarcated forests, as these areas were unspecified. But the Report provided that those proprietors and tenants who had hitherto exercised any such rights could continue to do so. Non-agricultural residents (i.e. those who were neither proprietors nor cultivators of land) were allowed to graze their cattle, sheep and goats, to collect dry fuel and to cut grass in the undemarcated areas. One of the more significant rights was to net and snare wildlife. In the areas now included in GHNP, local people were formerly allowed to catch musk deer after obtaining permission from the forest officer (musk deer hunting is now illegal, although extremely lucrative; cases of musk deer poaching are reported from the Kulu district forests). Anderson's Report also specified the size of the net for catching hawks which was designed so that pheasants considered as game birds were not caught in them. The pheasant was, and remains, of significance in the local culture. Wearing a crest of Monal (a pheasant species) on the cap is considered a sign of chivalry, and many such crests can be seen at local festivals and fairs (Chetwode 1972).

Forest Rights in Contemporary Perspective

Local resource use rights as mentioned in the Anderson's Report are still valid in Himachal Pradesh, except that commercial tree felling is now forbidden throughout the state. Large number of trees are still cut, however, mainly to satisfy the huge demand for timber to construct/repair houses of the right holders. Though the current market timber price of a deodar *Cedrus deodara* tree may be US$1000, the local right holder still gets it for 0.25 US $ as was the rate when Anderson prescribed it in his Forest Settlement record. This practice of granting timber is popularly known as TD (Timber Distribution). The demand for timber increased in 1960s when Kullu valley experienced the huge demand for wooden packing cases required by the apple orchard industry. However, in the western portion of EPA, there has been a restricted development of apple industry due to lack of road connection. Due to increasing demand, it has become difficult in EPA to spot a *Cedrus deodara* tree which is locally preferred species for the house construction (Pandey s., Pers. Obser.).

GHNP's high altitude forests and alpine areas are currently used for sheep grazing by local

villagers as well as migratory graziers from Suket (Mandi) and Saraj (Outer Kulu). Though the Anderson's report provided rights only for the life of the right holder, the provisions of this report have been adopted as such after the independence. This resulted in passing on the right after the death of the right holder to the offsprings. With time, the hereditary rights of the local inhabitants have become quite ambiguous. Many of the original right holders are dead making it very difficult to verify the rights of persons who enter the NP.

The Anderson's report mentions herb collection for bonafide use by the local inhabitants. However, today it has become an occupation of the people. This is evident from existence of middle men and herb dealers in Kulu and adjacent towns. The timing and amount of medicinal herbs to be collected is quite ambiguous. For example, under the original settlement, the collection of medicinal plants for bonafide needs is permitted for 2 months annually, starting from 15 August. At present this activity starts as the snow melts and may involve as many as 5-600 people from the 5 **kothis** (a small administrative unit) in lower Sainj alone (Gaston and Garson 1992). Similarly, the Guchi (morsel) collection is done in April-June. Both these activities contribute to sizeable income to the local people (S. Pandey, Pers. Obser.). In a recent intervention the DFFC has revised their export fee for the entire state of H.P. (Table 2). The revision of rates has considered availability and abundance of the herb in the wild. Extraction of *Dioscorea deltoides* is banned in the state because of its over exploitation.

Ecodevelopment planning for GHNP

The preliminary indicative plan for the GHNP Biodiversity Conservation through Ecodevelopment Project was prepared by the Indian Institute of Public Administration (IIPA) in New Delhi (Mehta *et al*. 1993). IIPA has now prepared equivalent plans for more than a dozen protected areas in India. This Indicative Plan is a broad outline of an ecodevelopment programme primarily meant to play a limited role of seeking funds for the Conservation of Biodiversity (CoB) Project at GHNP. Recognizing the need to involve local people from the outset, the IIPA planning teams used Participatory Rural Appraisal (PRA) and other social science techniques for data gathering in eight selected villages. Preparing the indicative plan involved a reconnaissance of the area, making contact with a variety of local people and seeking their trust and confidence. The indicative plan emphasizes building relationships with various government agencies and NGOs, as well as setting up coordination mechanisms at village and park management levels. The plan calls for, but does not include, comprehensive microplans for possible ecodevelopment interventions in areas such as grazing management, agriculture and irrigation development, cottage industries and handicrafts, apiculture, energy conservation, and so on. The plan proposes that National Park staff play a key role in involving the local communities in information-gathering and decision-making to facilitate participatory management of natural resources in the Project Area. Although priority is being given initially to the areas in the immediate neighbourhood of the Park, the Project is eventually expected to reach all of the communities who use the Park's resources.

Existing Constraints and Suggestions to Proceed:

The CoB Project is expected to contribute significantly through village level organisation to the biodiveristy conservation of the GHNP. Such an approach would necessitate that the professional capacity of GHNP staff is built up, and organisational structures, procedures are established. At GHNP, the concept of ecodevelopment is new both to the field staff and the

neighbouring communities. In recent years, GHNP management as well as the local communities have had to confront new terms such as `biodiversity', and `ecodevelopment', the meaning and connotation of which need to be made clear to them. The management action needed to enhance the occurrence of different genotypes within the core area of park will be different than managing `biological resources' to meet the biomass demands of people in the EPA. Similarly, the concept of ecodevelopment, sustainability and participation need to be clear to the park management.

The Project now in its second year of implementation is currently facing problems of staff shortage, microlevel planning details, local communities involvement, and coordination among various developmental agencies, NGOs in the area. In the light of above discussion, the present status of GHNP ecodevelopment project needs to be examined under four broad categories, (a) project management (b) micro planning, community organisation and participation (c) natural resource management (d) training.

(a)Project Management:

(i) Adaptive management and budgetary flexibility:

There are considerable funding, and organisational bottlenecks at the state, and park management level. The GHNP ecodevelopment project is expected to remain flexible to incorporate changes in response to local needs and project experiences. Such an expectation demands innovations in the present financial systems to make it more responsive to the concept of ecodevelopment. For example, the budget for ecodevelopment implementation over the five- years project period has been divided on an annual basis, which may not essentially correspond to the financial needs of the park manager. The existing mode of annual budget control needs to be flexible to implement the ecodevelopment plan. The fund requirement at the planning stage may be less, while at the implementation stage, the opposite may be the case. The Park manager, however, needs to spend all the allotted money within the same year to avoid the fund being held over by the state until the next financial year. In fact the working efficiency of the park manager, at the moment depends upon his ability to spend money equally within each quarter of the fiscal year.

To overcome such constraints, considerable financial and managerial autonomy needs to be given to the park director, in addition to a matching enhancement of rank of this important post. The issue of autonomy can be considered on the similar lines as it exists in the case of H.P. Ecodevelopment Society of the Indo-German Changar Project of Himachal Pradesh (Pandey 1994). The governing body of this Society formulates the policy, and its composition is drawn from a wide spectrum of public life, persons of eminence, government officials, and NGOs. If applied in GHNP, such a governing body can avail services of a forest officer interested in participatory approach to direct the ecodevelopment project. A technical committee of ecodevelopment experts can make periodic review of the technical quality and content of the programmes undertaken by the GHNP ecodevelopment project. With such kind of financial flexibility and organisational back-up, the park director can evolve and adopt new ideas suitable for identifying and resolving critical site-specific ecodevelopment planning and implementation issues.

(ii) Facilities for the Field Staff:

The execution of ecodevelopment project has increased or rather doubled the workload of the park staff. Additional field staff at GHNP are needed to cope with the added responsibility. Moreover, the wildlife personnel posted in the remote areas of GHNP do not receive any incentives.

Rather they are paid the same salaries as their counterparts in towns which have road access, and schools. Working in the Wildlife Wing of the DFFC is still regarded as a sideline job compared to the mainstream of the forest department. Not much can be expected from the staff till their service conditions are improved.

(b)Micro Planning, Community Organisation and Participation:

Following are salient features of the work done so far on micro planning, community organisation and participation at the Great Himalayan National Park:

(i) Two-tier approach of micro-plans:

The microplans have two-tier approach towards the ecodevelopment activities: (1) Truco (trust and confidence building measures) activities to meet with the very immediate requirements of the local people, (2) main programmes which need to be implemented over entire project period.

(ii) Planning for a micro-watershed:

One micro-plan involves all the villages in the particular micro-watershed. For example, the microplan made for Tirthan watershed covers 19 villages with a population of 1300. All the microplans are in English which can not be understood by the local villagers.

(iii) Involvement of NGO in micro-planning:

The Park staff since start of the Project has been grappling with the microplanning work at the village level. The Society for Promotion of Wasteland Development (SPWD), a non-government organization (NGO) was engaged to help the Park staff to prepare the microplans. The SPWD and Park staff though prepared three microplans (each microplan covering a cluster of 8 to 14 hamlets), there was a lack of proper interface between the two. The involvement of SPWD remained limited upto planning stage only. The microplans were completed by September 1995 though their approval for implementation was still awaited in April 1996.

(iv) village level organisation:

At the local level, the project would function through the village level organisation i.e. village ecodevelopment society (Mehta *et al.*1993). Several village ecodevelopment committees have been formed at the initiative of the Park staff. At the moment, these committees are non-functional and without a mandate. The present scenario in GHNP conforms with the experience elsewhere in India which shows that the field staff often remains in hurry of creating village level ecodevelopment committees (JFM Update 1993), which if done without following the logical process of involving people, will prove counter-productive.

Reassessing the present situation at GHNP, it is suggested that

- a training programme to develop skills in the field staff and local communities need to be in place immediately so that they can be able to interface with NGOs, other government agencies, etc.

- both, the park staff and the local communities need to develop understanding to ensure that a microplan is an institutional contract to bring benefits (to the local communities through ecodevelopment programmes) and responsibilities (of the local communities to help conserve the natural resources of GHNP).

- the gap between the micro level planning and its actual implementation should be reduced so that the local people do not start loosing interest in the programme.

- considering the difficult hilly terrain and distance of villages from each other, it is difficult for all the people to participate in a dialogue, collectively. Moreover, not all the households in a village are dependent upon the NP resources. Hence, there is a need to work further with the local communities to incorporate realistic and measurable reciprocal commitments that would directly address GHNP conservation issues.

- all the micro plans prepared so far need to be translated in the local language (Hindi) which the local communities understand well.

(c)Natural Resource Management:

The present management plan (Sharma 1987) is expiring in 1996. The ecodevelopment approach now an accepted strategy for GHNP management, there is a need that the new management plan would address the mechanisms of establishing linkages between conservation of biodiversity and sustainable development of the local communities. An overall wildlife management plan of GHNP would include prescriptions for management of biodiversity of GHNP, along with an ecodevelopment plan and the village level microplans for the EPA.

In our view, as the Project progresses, the following measures can help improve the local natural resource management situation at GHNP till the time a proper wildlife management plan is prepared:

1.Settlement of Rights: Through participatory process (consultations, decision-making, and action), the Park officials need to evolve mechanisms of management of local people's rights in GHNP which so far has been non-existent in the area. It is expected to stop open access resource use by those with rights as well as without rights. The rights of the local communities, especially of herb collection and grazing in GHNP should be fully investigated, where possible purchased, and generally clarified. Alternative sources of income-generation activities can be used to wean away the local people from using the Park resources.

2.Alternate Income generation activities: While introducing alternative sources of income for the local people, attention needs to be on the feasibility of new schemes in terms of conservation aspects of the national park. A slight upgradation of the traditional and indigenous technology as in case of local handlooms, practices related to bee-keeping, etc. can result in better results rather than introduction of entirely alien ideas in the conservation areas.

3.Management of EPA: In 1993, the state of Himachal Pradesh has adopted principles of Joint Forest Management for participatory management of forests (JFM Update 1993; Mukerji 1994) which would be of help in benefit-sharing of forest products with the local people in the ecodevelopment project area.

4.Coordination with line agencies: There should be an immediate dialogue with other development agencies working in EPA so that their schemes are dove-tailed with those of the GHNP Project. Working together to achieve the conservation goals of GHNP would be facilitated through the process.

5.Wildlife Research: The Wildlife Institute of India has taken up a research project in GHNP which intends to provide background information to the Park management. This will help choose management options to achieve objectives of multiple use areas (i.e. ecodevelopment project area), in terms of people's aspirations, without jeopardising the biodiversity of the region.

6.Ecotourism: Unlike Protected areas in Nepal Himalayas (Wells 1993), GHNP receives only a few hundred tourists in a year. However, specialists wildlife treks for small groups, operating under strict guidelines and accompanied by Park staff, could be conducted without significant adverse impact (Gaston and Garson 1992). Regulated tourism in GHNP should be a participatory activity involving local village organisations. More jobs can be created through services such as guides, catering, selling souvenirs, handicrafts, etc. The park management is expected to facilitate development of linkages between village level organisations, and tourists.

7.Control on Poaching: A balance between ecodevelopment activities i.e. positive incentives and policing/enforcement i.e. negative incentives need to establish to check poaching of animals. The `people-friendly' approach need to relate the ecodevelopment measures to the removal of such factors which may harm biodiversity of GHNP.

(d)Training for Park Staff and Local Communities :

Recently, the WII has developed a training course for field executive staff as well as the local communities of GHNP for their capacity enhancement in participatory management of biodiversity. The training plans for the field personnel would be conducted by adopting Training of Trainer (TOT) approach and using participatory training methods such as group works, action learning, simulation, role play, case studies and site visits. The trained staff, in turn, can adopt TOT approach to interact with and train the local communities.

At present, the GHNP does not has any nature education programme for the local communities. When resources had not yet been threatened, but were likely to be, ICDP projects felt that the appropriate response was education prior to participation, rather than as an adjunct to it (Brandon and Wells 1992). The WII training programme as mentioned above envisages to train at least two local villagers in each of the 120 villages of EPA who will act as a catalytic force in involving traditional wisdom in nature conservation through formal and informal nature education programmes. It would ultimately result in establishing of at least two village level Biodiversity Information Centre in each valley to disseminate the conservation awareness among the villages and visitors. The faculty members of WII in association with the Park staff and Kullu branch of National Literacy Mission, an NGO would be implementing this programme.

References:

Anderson, A. 1886. *Rights and Settlements of Kullu District.* Civil and Military Gazette, Lahore.

Brandon, K. and Wells, M. 1992. Planning for People and Parks: Design Dilemmas. *World Development* 20 (4): 557-570.

Chetwode, P. (1972). *Kulu, The End of the Habitable World*. Allied Publishers Pvt. Ltd. New Delhi.

Collar, N.J. and Andrew, P. 1988. *Birds to Watch.* ICBP Technical Publication No. 8. International Council for Bird Preservation, Cambridge, U.K.

Gadgil, M. and Guha, R. 1993. *This Fissured Land: An Ecological History of India.* Oxford University Press, New Delhi.

Gaston, A.J., and Garson, P.J. 1992. *A Re-Appraisal of the Great Himalayan National Park.* Report to HPDFFC, International Trust for Nature Conservation, WWF-India, Oriental Bird Club.

Gaston, A.J., Garson, P.J., and Pandey, S. 1994. *Birds recorded in the Great Himalayan National Park, Himachal Pradesh, India*. Forktail 9 : 45-57.

Gaston, A.J., Hunter, M.L. and Garson, P.J. 1981. *The Wildlife of Himachal pradesh, Western Himalayas.* Report of the Himachal Wildlife Project. Technical Notes No. 82, School of Forest Resources. University of Maine, Orono.

Gazetteer Punjab, District Kangra, Kulu and Sainj (1918) Vol. XXX, Government Press, Lahore.

Green, M.J.B. 1986. The Distribution, Status and Conservation of the Himalayan Musk Deer *Moschus chrysogaster*. *Biological Conservation* 35: 347-375.

Harcourt, Captain (later Colonel) A.F.P., 1871. *The Himalayan Districts of Kooloo, Spiti and Lahool*, Reprinted in 1982, Vivek Publishing Company, New Delhi.

I.C.B.P. (1992). *Putting biodiversity on the map: priority areas for global conservation*. Cambridge, U.K.: International Council for Bird Preservation.

IUCN (1974). Red Data Book: Mammalia. Morges, IUCN.

JFM Update 1993. Society for Promotion of Wastelands Development. New Delhi.

Kothari, A., Pande, P., Singh, S., and Variava D. 1989. *Management of National Park and Sanctuaries in India: A Status Report.* Indian Institute of Public Administration, New Delhi.

MacKinnon, J., MacKinnon K., Child G., Thorsell J.1986. *Managing Protected Areas in the Tropics*. IUCN, Gland, Switzerland.

Mani M.S.1994. The Himalaya, Its Ecology and Biography: A Review. in *High Altitude of the Himalaya.* Eds.Y.P.S. Pangti & R.S. Rawal. Gyanodaya PrakaSan, Nainital, India.

McNeely, J. A. 1988. *Economics and Biological Diversity: Developing and Using Economic Incentive to Conserve Biological Resources.* IUCN, Gland, Switzerland.

McNeely, J.A., and Miller K.R. (eds.) 1984. *National Park Conservation and Development: The Role of Protected Area in Sustaining Society.* Smithsonian Institution Press, Washington D.C.

McNeely, J.A., K.R. Mller, W.V. Reid, R.A.Mittermeier and T.B. Werner 1990. *Conserving the World's Biological Diversity.* IUCN, Gland, Switzerland; WRI, CI, WWF-US, and the World Bank, Washington D.C.

Mehta, A., Mehta R., Palhan S., Sankaran V., Singh S., Uppal V., Vania F. 1993. *Biodiversity Conservation through Ecodevelopment. A Preliminary, Indicative Plan for Great Himalayan National Park, Himachal Pradesh and Kalakad Mundanthurai. Tiger Reserve, Tamil Nadu.* Indian Institute of Public Administration, New Delhi, India.

Mukerji, A.K. 1994. People's participation in Forestry: H.P. Experience. *Wasteland News* IX (4).

Pabla, H.S., Pandey, S. and Badola R. 1995. *Guidelines for Ecodevelopment Planning.* Wildlife Institute of India, Dehra Dun. India.

Pandey, S. 1993. Pheasant Surveys and the Conservation of Protected Areas in the Upper Beas Valley, Himachal Pradesh, India. In Jenkins, D. (Ed.) *Pheasants in Asia 1992*. World Pheasant Association, Reading, U.K.

Pandey, S. 1994. Management of Himachal's Forests: New Initiatives Involving Local Communities. *WII Newsletter*, April-June: 49-51. Wildlife Institute of India, Dehra Dun.

Panwar, H.S. 1992. *Ecodevelopment: An Integrated Approach to Sustainable Development for People and Protected Areas in India.* Paper presented in the IV World Congress on National Parks and Protected Areas. Carcas, Venezuela. 10-21 February 1992.

Rastogi, A. 1992. Medicines from the Wild, A case study of the Great Himalayan National Park. *The India Magazine of her People and Culture*. 74-75.

Rodgers, W.A. and Panwar H.S. 1988. *Planning a Wildlife Protected Area Network in India. Vol.I & II.* Field Document No. 7. Wildlife Institute of India, Dehra Dun.

Sharma, R.C. 1987. *Management Plan of the Great Himalayan National Park.* Department of Forest Farming and Conservation, Government of Himachal Pradesh, Shimla.

Singh, S., Kothari, A. and Pande, P. 1990. *Directory of National Parks and Sanctuaries in*

Himachal Pradesh: Management Status and Profiles. Indian Institute of Public Administration, New Delhi.

Singh, T.V. 1989. *The Kulu Valley, Impact of Tourism Development in the Mountain Areas.* Himalayan Book, New Delhi.

Shukla, G.P., Rao, K., and Haridasan, K. 1994. *Taxus bacata* in Arunachal Pradesh. *Arunachal Forest News* 12 (1): 1-7.

Tucker R. 1991. Resident Peoples and Wildlife Reserves in India:The Prehistory of a Strategy. In *Resident Peoples and National Parks* Eds.West P. and Brechin S.1991. University of Arizona Press, Tucson.

Wells, M. 1992. Biodiversity Conservation, Affluence and Poverty: Mismatched Costs and Benefits and Efforts to Remedy Them. *Ambio* 21 (3): 237-243.

Wells, M. 1993. Neglect of Biological Riches: the Economics of Nature Tourism in Nepal. *Biodiversity and Conservation* 2: 445-464.

Wells, M. and Brandon, K. 1993. The Principles and Practice of Buffer Zones and Local Participation in Biodiversity Conservation. *Ambio* 22 (2-3): 157-162.

Wells, M. 1994. Biodiversity Conservation and Local People's Development Aspirations: New Priorities for the 1990s. In *Biodiversity Conservation: Problems and Policies.* Perrings, C., Maler, K.G., Folke, C., Holling,C.S., & Jansson B.O. (eds.), Kluwer Academic Press. Dordrecht, the Netherlands.

Wells, M. and Brandon, K., with Hannah, L. 1992. *People and Parks: Linking Protected Area Management with Local Communities.* World Bank, Washington D.C.

West, P.C. and Brechin, R.S. 1991. *Resident People and National Parks: Social Dilemmas and Strategies in International Conservation.* University of Arizona Press, Tucson.

Western, D., Wright, M. and Strum S. (eds.) 1994. *Natural Connections: Perspectives in Community-based Conservation.* Island Press, Washington D.C.

WRI, IUCN & UNEP 1992. *Global Conservation Strategy*, World Resources Institute, Washington D.C.

TABLE 1 : Small Mammals reported from GHNP:

Sl.No.	Altitude (m)	Location (Valley)	Species
1.	1700	Tirthan	Grey Shrew *Crocidura attenuata* Wood Mouse *Apodemus sylvaticus*
2.	2300	Tirthan	House Mouse *Mus musculus*
3.	3650	Sainj	Royle's Mountain Vole *Alticola roylei*
4.	2850	Parbati	Grey Shrew *Crocidura attenuata* Royle's Mountain Vole *Alticola roylei*
5.	2600 to 3700	Tirthan	Indian Pika *Ochotona roylei*
6.	1300 to 3700	All Valleys	Giant Indian Flying Squirrel *Petaurista petaurista*
7.	upto 2800	All Valleys	Porcupine *Hystrix indica*
8.	1600 to 2800	All Valleys	Himalayan Palm Civet *Paguma larvata*
9.	1600 to 2800	All Valleys	Himalayan Weasel *Mustela sibrica*
10.	1600 to 3700	All Valleys	Yellow throated Marten *Martes flavicula*

Record nos. 1 to 4 from Gaston and Garson 1981; rest from personal observations of Sanjeeva Pandey.

Table 2: A list of some of the medicinal plants with their uses and rates

Name	**Uses**	**Past Value (Rs. per kg.)***	**Revised export fee, 1994 (Rs. per kg.)**
Jurinea dolomiaea	Incense	25	500
Aconitum heterophyllum	Medicinal	200	1500
Dactylorhiza hatagirea	-do-	200	6000
Valeriana jatamansii	-do- and cosmetic	25	590
Picorhiza kurrooa	medicinal	25	540
Angelica glauca	-do-	12	125
Rheum australe	-do-	4	110
Juniperus squameta	Incense	?	?
Saussurea costus	Medicinal	?	300
Corydalis govaniana	-do-	0	?
Salvia moorcroftiana	-do-	2.5	180
Thyums linearis	Medicinal and Flavouring	0	100
Viola odorata	Medicinal	1	2250

* Figures follow Gaston & Garson, 1992.
Medicine value of taxol obtained from *Taxus bacata* is estimated at Rs. 750 laks ($ 2.5 million) per kg. in international market (Shukla, G.P. *et. al.* 1994).