

# *GREAT HIMALAYAN NATIONAL PARK*



*Human Nature Interaction in  
and Around the Park*

Front and back cover photographs of the *Great Himalayan*  
National Park by Partha S. Mudgil

REVISED DRAFT

**GREAT HIMALAYAN NATIONAL PARK  
HIMACHAL PRADESH**

A Report on the Human Nature Interactions  
in and around the Park

Sponsored by

Ministry of Environment and Forests  
Government of India

Indian Institute of Public Administration

Indraprastha Estate  
New Delhi 110 002

1996

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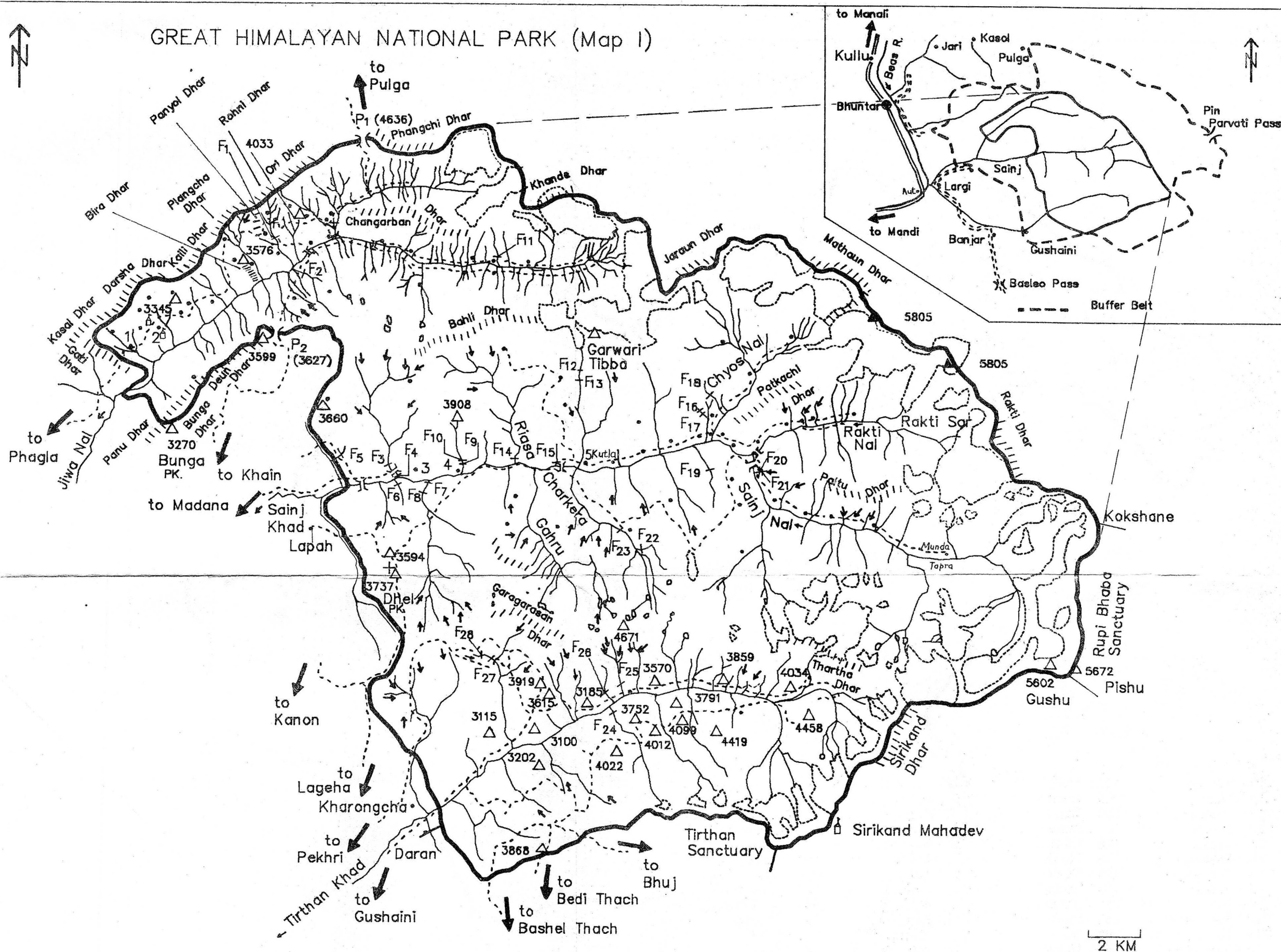
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# GREAT HIMALAYAN NATIONAL PARK (Map I)



## VILLAGES

- 1 - Kundar
- 2 - Manjhan
- 3 - Shagor
- 4 - Shakti
- 5 - Maraur

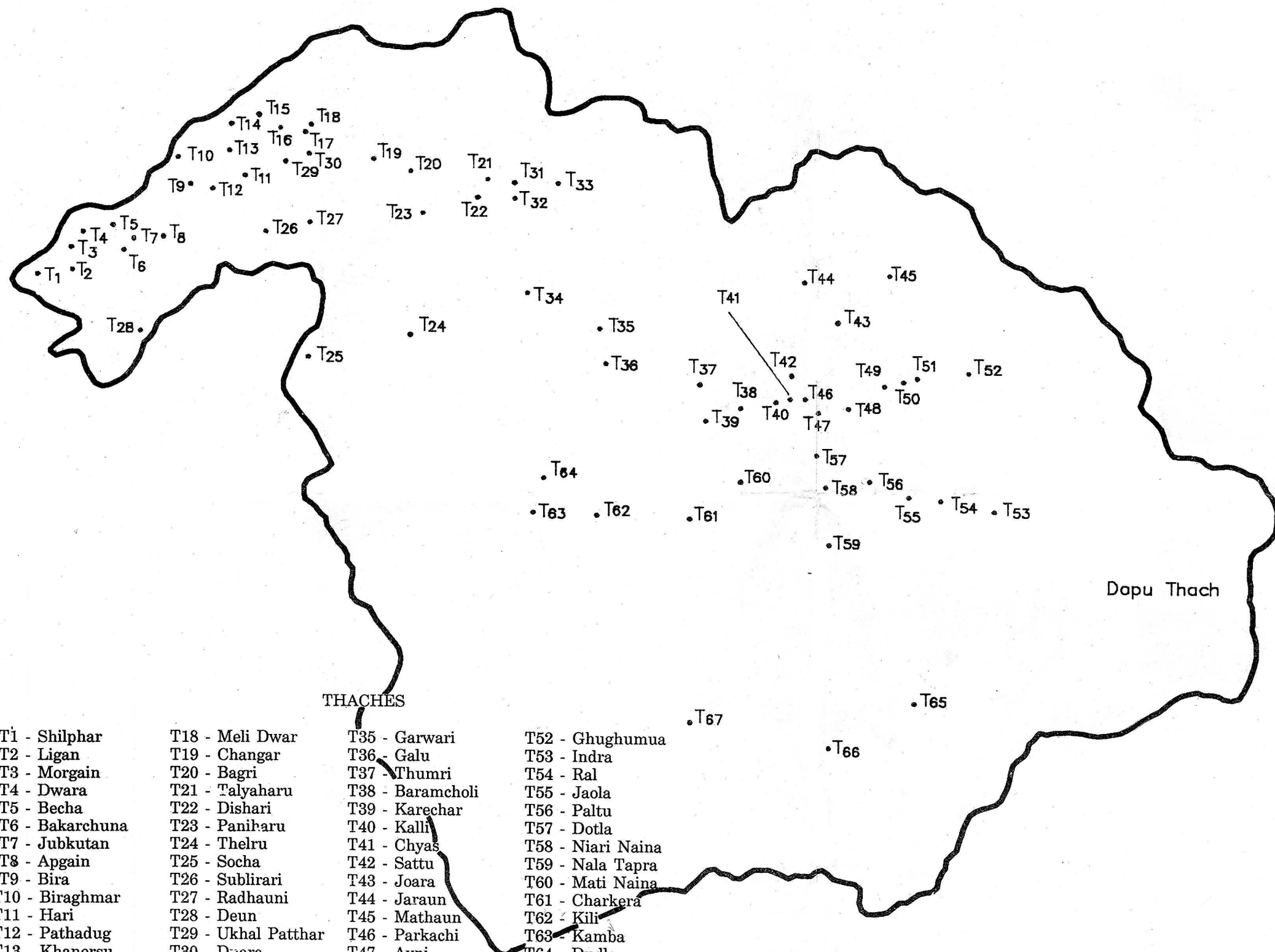
## MOUNTAIN PASSES

- P<sub>1</sub> - Phangchi Galu  
(Open from June to October)
- P<sub>2</sub> - Kandi Galu  
(Open from May to November)

## WATER FALLS

- |                            |                             |                             |                             |
|----------------------------|-----------------------------|-----------------------------|-----------------------------|
| F <sub>1</sub> - 36 Metres | F <sub>8</sub> - 15 Metres  | F <sub>15</sub> - 10 Metres | F <sub>22</sub> - 20 Metres |
| F <sub>2</sub> - 25 Metres | F <sub>9</sub> - 10 Metres  | F <sub>16</sub> - 15 Metres | F <sub>23</sub> - 20 Metres |
| F <sub>3</sub> - 5 Metres  | F <sub>10</sub> - 15 Metres | F <sub>17</sub> - 10 Metres | F <sub>24</sub> - 20 Metres |
| F <sub>4</sub> - 12 Metres | F <sub>11</sub> - 10 Metres | F <sub>18</sub> - 30 Metres | F <sub>25</sub> - 20 Metres |
| F <sub>5</sub> - 6 Metres  | F <sub>12</sub> - 60 Metres | F <sub>19</sub> - 20 Metres | F <sub>26</sub> - 10 Metres |
| F <sub>6</sub> - 10 Metres | F <sub>13</sub> - 40 Metres | F <sub>20</sub> - 60 Metres | F <sub>27</sub> - 30 Metres |
| F <sub>7</sub> - 60 Metres | F <sub>14</sub> - 10 Metres | F <sub>21</sub> - 40 Metres | F <sub>28</sub> - 10 Metres |

# GREAT HIMALAYAN NATIONAL PARK (Map II)



T1 - Shilphar  
T2 - Ligan  
T3 - Morgain  
T4 - Dwara  
T5 - Becha  
T6 - Bakarchuna  
T7 - Jubkutan  
T8 - Apgain  
T9 - Bira  
T10 - Biraghmar  
T11 - Hari  
T12 - Pathadug  
T13 - Khanersu  
T14 - Rohni  
T15 - Shililuari  
T16 - Rati Hati  
T17 - Gara Dwar

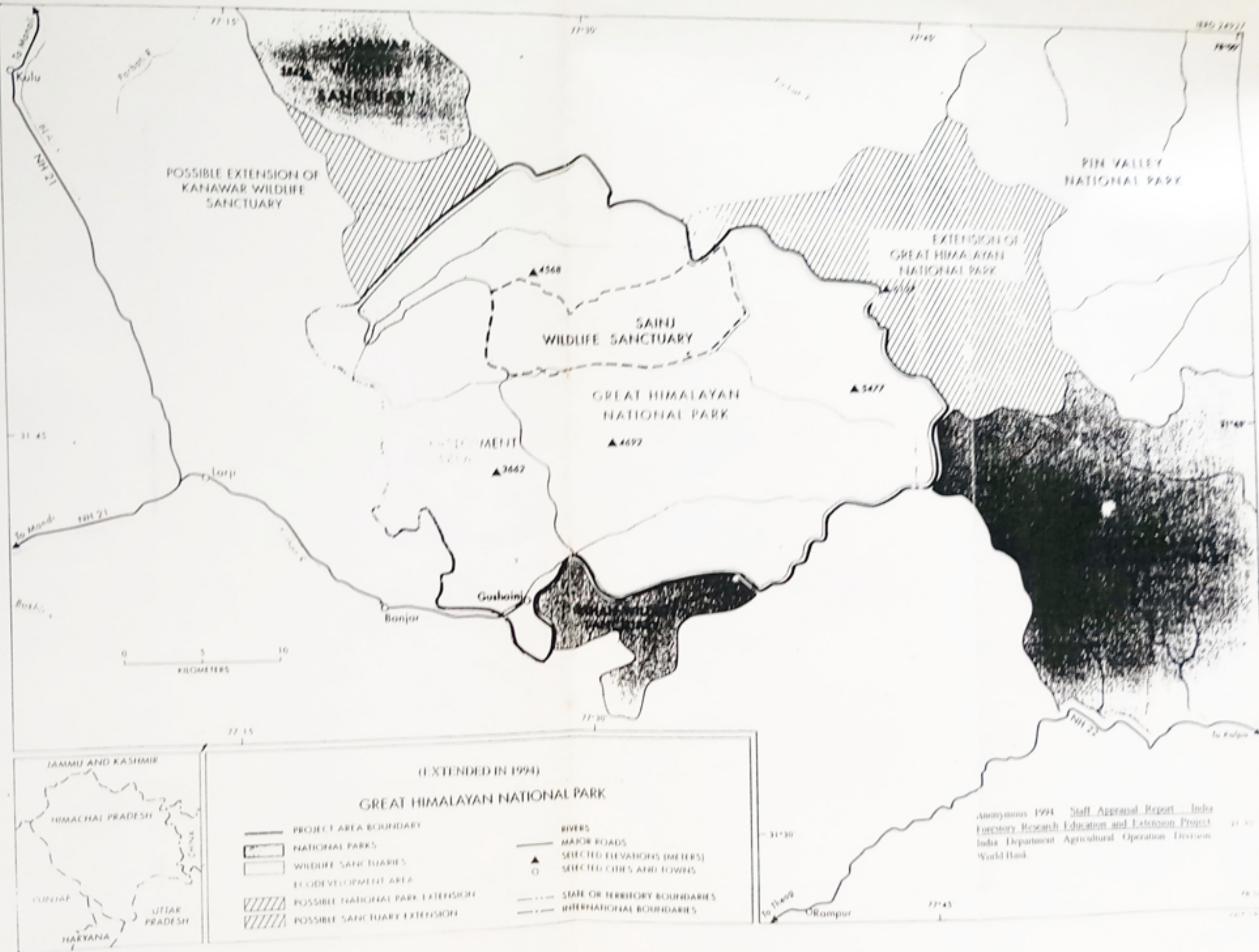
T18 - Meli Dwar  
T19 - Changar  
T20 - Bagri  
T21 - Talyaharu  
T22 - Dishari  
T23 - Paniharu  
T24 - Thelru  
T25 - Socha  
T26 - Sublirari  
T27 - Radhauni  
T28 - Deun  
T29 - Ukhal Patthar  
T30 - Duara  
T31 - Ratichha  
T32 - Khutar Ka Ban  
T33 - Ranka  
T34 - Bahli

T35 - Garwari  
T36 - Galu  
T37 - Thumri  
T38 - Baramcholi  
T39 - Karechar  
T40 - Kalli  
T41 - Chyas  
T42 - Sattu  
T43 - Joara  
T44 - Jaraun  
T45 - Mathaun  
T46 - Parkachi  
T47 - Avni  
T48 - Majhaun  
T49 - Jauvla  
T50 - Rahni  
T51 - Joara

T52 - Ghughumua  
T53 - Indra  
T54 - Ral  
T55 - Jaola  
T56 - Paltu  
T57 - Dotla  
T58 - Niari Naina  
T59 - Nala Tapra  
T60 - Mati Naina  
T61 - Charkera  
T62 - Kili  
T63 - Kamba  
T64 - Dudla  
T65 - Tharthadhar  
T66 - Khol  
T67 - Shankha

2 KM







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## KEY TO ABBREVIATIONS

---

AA	-	Adjacent Area (within 10 km radius of Park)
ADM	-	Additional District Magistrate
AV	-	Adjacent Area Villagers
AVS	-	Abbreviated Village Schedule
DCH	-	District Census Handbook
DIR	-	Himachal Pradesh Directory
D.P.(F)	-	Demarcated Protected (Forests)
FSI	-	Forest Survey of India
FV1	-	Field Visit 1 (August 1989)
FV2	-	Field Visit 2 (September-November 1991)
FV'94	-	Field Visit 1994 (June-July 1994)
HCS	-	Herb Collectors' Schedule
HHS	-	Household Schedule
HPSEB	-	Himachal Pradesh State Electricity Board
MG	-	Migratory Graziers
MGS	-	Migratory Graziers' Schedule
MP	-	Management Plan
NP	-	National Park
NWFP	-	Non-Wood Forest Produce
PA	-	Park Authorities
PD	-	Park Director
PV	-	Park Villagers
QA	-	Questionnaire completed by field visitors for Himachal Pradesh Directory (May 1985)
Q.A1	-	Questionnaire A completed with PD P.P. Madan during FV1
Q.A2	-	Questionnaire A completed by RO Sharma and RO Negi during FV2
QQ	-	Queries Questionnaire completed by RO Sharma and RO Negi during FV2
RO	-	Range Officer
S.O.	-	Settlement Officer
Sp.	-	Species
tp	-	Survey of India toposheets
U.P.(F)	-	Undemarcated Protected (Forests)
VS	-	Village Schedule

## PREFACE

---

This report contains the findings of a study on Human Nature Interactions around National Parks and Sanctuaries in India, sponsored by the Ministry of Environment and Forests, Government of India.

The objectives of the study were:

1. To assess the impact that people living in and around have on the park/sanctuary.
2. To assess the impact that the park/sanctuary has on these people.
3. To determine the methods by which the negative impacts that the people have on the park and the park has on the people can be reduced or negated.

In order to reach the objectives, both primary and secondary data were collected. Research teams spent about six months in the field between 1991 and 1994, moving along with graziers and herb collectors, and talking to inhabitants of the villages inside and around the park. Schedules (see annexures one to six) were filled and participatory rural appraisals were carried out in order to record and understand the perceptions of the people. In the process of discussions with the local people and the forest officials, it became increasingly clear that the approach that had the greatest chance of succeeding was ecodevelopment. Accordingly, a conceptual framework for ecodevelopment was developed.

Much before the study was completed, the Ministry of Environment and Forests, Government of India, decided to take up ecodevelopment around the Great Himalayan National Park (GHNP) and asked the IIPA to prepare the project proposal. The data collected as a part of this study were utilised for the purpose and a project report was prepared. Subsequently the project was approved and has been initiated from 1994, and many of the recommendations of this study are already in the process of implementation.

This study would not have been possible without the help and support of the villagers living in and around GHNP, and of the graziers and herb collectors who annually traverse the park. They gave generously of their time and shared their thoughts with the study team. The Wild life officials of Himachal Pradesh and especially of GHNP were very supportive and provided the information, documents and logistics required to complete the study.

We would like to give special thanks to Shri Manoj Bhaik, Shri A.C. Sharma (both former park directors), Shri B.R. Negi and Shri M.P. Sharma (both former range officers in GHNP). Also, Shri Vijay Kumar, the former ACF, Wildlife, Kullu, went out of his way to help us. The Ministry of Environment and Forests very graciously made available the funds that made this study possible and without their financial and moral support it would have been impossible to do this work. In addition, Shri Sanjeeva Pandey, IFS, Himachal Pradesh, gave detailed comments on the first draft of this report. In addition, he provided us with the picture which has been used on the cover page. Also, Shri Nagesh Kumar Guleria, Director, Great Himalayan National Park, read through the fine print of the first draft of this report and gave his valuable comments. Shri C.D. Katoch, Chief Wildlife Warden, Himachal Pradesh, kindly gave us permission to visit the Great Himalayan National Park in October, 1996, which made it possible for us to update our first draft. We gratefully acknowledge our debt to all of them.

New Delhi

August 1996

The Project Team

## EXECUTIVE SUMMARY

---

Great Himalayan National Park (GHNP), in Himachal Pradesh, is 765 sq km and currently is only a proposed national park with the intention to constitute it into a national park having been declared. At present, the southern 8396 ha. is a part of the earlier notified Tirthan Sanctuary. The remaining area is either reserve or protected forest. The State Government have also declared the intention to constitute the middle portion (Sainj Valley) into a sanctuary, pending the final declaration of the whole area as a national park.

There are only four villages inside GHNP, of which two are inside the recently notified Sainj Sanctuary. Recent reports suggest that two villages falling in the Jiwa Nala valley of GHNP have been abandoned. The remaining two villages which are in the Sainj valley have a population of 66 persons (12 families).

The northern, eastern and southern boundaries of GHNP are impassable as they are mostly under permanent snow or with very steep ridges. The park itself has an altitudinal range of between 1300 and over 6000 meters. The valleys and ridges run from west to east and the altitude increases from west to east.

Adjoining the western boundary of the park, there are 18 revenue villages in an approximate radius of ten kilometers. These 18 villages are subdivided into about 200 hamlets. The total population of the area is 16,618 and the area is about 38,500 ha. The approach to the park is from the west, though there is no motorable road upto or within the park.

The major pressures on GHNP come from these 200 odd hamlets where many of the people claim traditional grazing rights and also collect herbs and mushrooms from the park. It is estimated that around 20,000 sheep and goats [Guleria, pers. comm.] graze in the park during the summer months. In addition, around 2500 people collect herbs and mushrooms from the park each year, again during the summer months. There is also the disturbance to

wild animals and the habitat, and the use of firewood, by the graziers and herb collectors. Some fodder is also collected by villagers, from the periphery of the park, for their winter requirements.

There are no significant pressures of the park on the people as, currently, no restrictions are being imposed on the traditional uses of the park. Most of the villagers from the areas adjoining the park complain about crop damage by bears and monkeys, but it is not certain if these animals are from the park or from the neighbouring forests.

The surrounding area is remote, with almost no motorable roads. Though almost all the hamlets have electricity, there is not much other evidence of 'development'. The people have enough to eat and live well and, therefore, in a real sense are not poor. Their major constraint is cash income. Because of their remoteness and the sparseness of the population, they do not have easy access to markets for their goods. Also, traditionally, they seem to have met their minimal cash requirements through the sale of herbs and mushrooms that they collected in the forests and wage labour. There does not appear to be many other activities in the region which are done for cash income. Even the sheep and goats they keep, or the honey they collect, or the *shelas* and *pattus* (local cloth) that they make, are for their own consumption, as are their agricultural produce.

The constraint of a lack of access to markets also affects the effort to set up sustainable income generation activities around the park. This is aggravated by the fact that some of the local people, influenced by the pattern of development in Kullu valley and in some other parts of Himachal Pradesh, seem to want the setting up of apple orchards and the construction of motorable roads to be the major strategy of development for the area. The absence of NGOs which would support development strategies which are compatible with the long term interests of conserving GHNP in the area is another constraint to the establishment of sustainable community development programmes.

GHNP is an area with comparatively few management issues. The northern and eastern boundary of the park are under permanent snow and mostly impassable. The southern boundary is along a high ridge, and almost impassable. The remaining surrounds are sparsely populated with harsh terrain and poor communications.

The major management issues and pressures are:

1. Pressure of herbs and mushroom collection.
2. Pressure of seasonal, migrant, grazing of sheep and goats.
3. Habitation within the Park
4. Occasional poaching

In addition, some of the management issues that need consideration are:

5. Promotion of appropriate tourism and interpretation in the park.
6. Research and monitoring
7. Extension and education

There are no significant pressures of the park on the people, except some crop depredation and injury to livestock by wild animals.

The recommendations of this study envisage initiating ecodevelopment activities in and around the park, supported by strengthened management capacities, initially through a three to five year project.

The project involves the following activities:

1. Micro-level ecodevelopment planning
2. Initiation of ecodevelopment activities aimed at environmental conservation, biomass generation, income generation and protected area management.
3. Human Resources Development
4. Research and Development
5. Environmental education and awareness
6. Monitoring and evaluation

In addition, the following activities will be prior or concurrent to ecodevelopment, and supportive of it.

1. Preliminary, indicative, Planning (Prior)
2. Ecodevelopment training for park director/ other officers (Prior)
3. Management Planning (Prior and concurrent)

Ecodevelopment planning and management planning, for any protected area, must go hand in hand. There must be a clear interface between the management plan, specifying managerial and protection objectives and strategies within the protected area, and the ecodevelopment plan which identifies strategies to divert human pressures from without.

Just as management without ecodevelopment is often futile, so is ecodevelopment without proper management. The formulation and execution of an adequate management plan is not only a prerequisite for proper ecodevelopment, for it is the management plan which specifies the park priorities, it also ensures that the gains from ecodevelopment in terms of reduced pressures are consolidated for the betterment of the protected area. The initiation of an ecodevelopment project should, therefore, be preceded by the process of drawing up a management plan and the allocation of adequate funds to implement it. The current management plan for GHNP is old and needs to be substantially re-written.

There is also a need to set up processes and institutions that can ensure the increasing involvement of the local people in the planning and management of the protected area.

Though the specific activities to be taken up under the ecodevelopment project would be determined through a process of micro level planning, some of the income generation activities suggested as part of the project include the promotion of tourism, the production and marketing of honey and wax, wooden furniture, poultry items, handloom items, indigenous vegetables and fruits. It is also proposed to set up sheep farms, in the last two years of the project, and to cultivate the local herbs and mushrooms, thereby using and

building upon traditional skills and activities available in the region to develop environmentally sustainable activities. These activities would be supported and facilitated through a strong training programme, a marketing organisation, a tourist facilitation organisation, visitor cum training centers, production centers and the provision of start up loans and seed money, apart from other financial and material support.

The communication needs of the region are proposed to be met by the provision of bridle paths, to be built and maintained by the local people, and mules, to be operated by the villagers.

Biomass needs of the villagers are sought to be met through fuel and fodder plantations in revenue common lands, by managing some of the degraded forests in a joint participatory manner, by improving local and village grasslands and meadows, and by providing irrigation water.

There is also need for an effort to improve the agricultural lands, mostly terraced, and to take up soil conservation measures in the region.

The project should be implemented through village level committees, and along with a JFM agreement, there should be an agreement renouncing the collection of herbs and mushrooms from the park. There should also be an agreement to regulate and restrict grazing activities according to the management requirements.

Adequate short term income generating activities have to be identified and provided for in the project to tide over the transitional period.



## 1. INTRODUCTION

---

The proposed Great Himalayan National Park [GHNP] is located in the north-western Himalayas, in Kullu District of Himachal Pradesh, some 60 km to the south-east of Kullu. The Park covers an area of 76,500 ha., containing some of the least disturbed areas of natural vegetation in Himachal Pradesh, including the catchment areas of the Parvati, Jiwa Nal, Sainj and Tirthan rivers, which together comprise a significant portion of the upper catchment of the Beas river. The Park also contains several threatened species of wild flora and fauna and is contiguous to the Pin Valley National Park to the Northeast, Tirthan Sanctuary (6,112.98 ha) to the south and to Rupin Bhaba Sanctuary (26,914.50 ha) to the east. The Rupin Bhaba Sanctuary is in turn contiguous to Pin Valley National Park (67,500 ha) to the north. These four wildlife conservation areas together comprise the largest and best preserved area of wildlife habitat in the State and possibly in the Western Himalayas [Gaston & Garson, 1991].

There are no motorable roads upto or within the Park. The nearest points accessible by vehicle are Neuli, 2 km to the west, and Gushaini, 5 km to the south-west, from the nearest entry points into the Park in the Sainj and Tirthan valleys, respectively. The terrain within and around the northern and eastern side of the Park is extremely rugged. Entry into the Park is especially difficult from the north, and from the snow-bound eastern side. A small area (8,396 ha) of the present Park had been notified earlier as part of Tirthan Sanctuary on 17.6.1976. The intention to constitute the present Park was declared on 1.3.1984. The first notification of the Park included the boundaries of a buffer zone of 1,16,000 ha, but this has been denotified recently (see Section 6.1.2). In 1994, the intention to constitute an additional area of 14,500 ha as a part of the park was declared. In addition, an area of 9,000 ha falling inside the park in the Sainj valley has been notified as an intended sanctuary. Final notification of the Park as well as the Sainj

Sanctuary is pending the completion of various procedures specified in the Wildlife Protection Act, including the settlement of land use rights (see Section 6.1.1).

There are four villages inside the protected area (PA) with some 30 families and a total human population of between 150-200 people with the right of habitation in the PA (at present only two are occupied; for details see 2.1.10.1). Park villagers also have several other traditional land use rights, including cultivation, livestock grazing and collection of non-wood forest produce (NWFP). People (exact number not known) from villages in the adjacent area (i.e. within a 10 km radius of the Park) also have various land use rights in the Park. In addition, people from villages as far as Ani Tahsil have traditional grazing rights in the Park area. The major pressures on the Park appear to be herb collection and migratory grazing of sheep and goat in the high altitude meadows or *thaches*, both seasonal activities. This study seeks to understand the human-nature interactions in and around GHNP, in terms of the impact of such activities on the park, and the impact of the park on the people traditionally dependent on the area for their basic needs. In order to do this, it seeks to study the occurrence, distribution, intensity, frequency, ecological impact, and socio-economic importance of various human activities in and around Great Himalayan National Park; the social, economic and ecological implications of stopping one or more of these activities; and finally the possible alternative methods of meeting the legitimate needs of the people while diverting pressure from the park.

This current report is based on six visits to Great Himalayan National Park, in August 1989 and September-November 1991, June-July 1992, March-April 1993, July 1993 and July- August 1994. Details of the field visits, including the methodology used, are given in Annexures seven to ten. During the first visit, the villages of Shakti and Maraur in the Sainj valley were visited. The villages of Kundar and Manjhan in the Jiwa Nal valley, as well as a section of the Tirthan Valley, were visited during the second trip. Information on

migratory grazing and herb collection was collected on both visits, however, interview schedules for different groups of resource users were used only on the third visit. Park authorities were interviewed on all three visits. In the subsequent '93 visit information was collected on the basis of PRA exercises from Tinder, Nahi, Lagcha, Pekhri in Tirthan valley and Sharan, Shangarh, Suchain, Dhara-Lapah and Neuli in Sainj valley. In the sixth visit in July and August, 1994, the stress was on viewing the situation in the adjacent areas of the park : Khuna , Keloban, Rakshukhlu, Chamarda and Neuli villages in the Sainj valley, and Chipni in the Tirthan valley. Village schedules and household schedules were administered in these villages. The collation tables of these schedules are in Annexures 26, 29, 30, 31 and 32.

## 2. DESCRIPTION OF THE PARK AND ADJACENT AREAS

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### 2.1 PHYSICAL

#### 2.1.1 *Historical Summary*

Date and History of Establishment: Tirthan was notified a sanctuary on 17<sup>th</sup> July 1976. A part of Tirthan sanctuary was subsequently included in the Great Himalayan National Park. Intention to declare the park was issued on 1 March, 1984 (Notification no. 6-16173-SF-11), but settlement of rights and final notification is outstanding. Some 1,11,600 ha adjoining the park had been notified as a buffer zone, but was subsequently denotified. The park was renamed Jawaharlal Nehru Great Himalayan National Park in mid 1989, but its original name is still commonly used [Singh *et al* , 1990]. In 1994, an area of 14,500 ha was added to the Great Himalayan National Park in the Manikaran valley comprising the upper catchment of the Parvati river vide notification no. D-XII-54(c)/14746. In addition, also in 1994, an area of 9,000 ha was notified as intended sanctuary (Sainj Sanctuary) in the Sainj valley of GHNP vide notification no. D-XII-54(c)/14229.

#### 2.1.2 *Altitudinal Range and Terrain*

Altitude ranges from 1300-6110 m [tp] and terrain is characterized by numerous high ridges over 4,000 m high, deep gorges and precipitous cliffs, rocky crags, glaciers and narrow valleys. A little over half the Park area lies above 4000 m. Much of the eastern part of the Park is perpetually snow-bound or under ice [Gaston *et al.*, 1981]. Pleistocene glacial advances have greatly influenced the topography of the region and have left extensive moraines, river terraces and hanging valleys [Gaston *et al.*, 1981].

The topography of the area has also been influenced by avalanches and landslides. Avalanches occur frequently after heavy snow, often originating from steep southern aspects, especially from April to June [QQ]. Landslides

are common from January to March and during the rainy season, in July and August, and affect approximately 100 ha each year [Q.A2, QQ]. Avalanches and landslides are natural phenomena and both result in heavy loss of top soil, decrease in pasture area, and in wild animal deaths. They also seem to contribute to the growth of weeds. [QQ;]

### **Geology and Soils**

The main rock formations in the Park are quartzite and mica-schist. Soil types vary from sandy loam to thick humus, beneath *Kharsu* oak and fir forests [mp]. No other information is available on the geology and soils of the park.

#### **2.1.4 Climate**

No meteorological data has been collected from the Park, but Park authorities report that temperature ranges from -10 to 35° C [Q.A2, Gaston et al. 1981] report that the Sainj and Tirthan valleys have a milder climate than the rest of the Beas area, with lower snowfall in winter and higher rainfall during the monsoon. The rainy season lasts from June to September with most of the rain falling in July and August. Annual precipitation in most parts of the Western Himalayas is in the range of 1000-2000 mm. Heavy frosts occur from December to February [Q.A2]. From November/December to March, most of the precipitation above 2000 m is in the form of snow [Gaston & Garson, 1991]. Snow falls throughout the Park, but in areas below 3000 m it does not remain long on the ground. Above 3000 m, snow persists from November to March (Gaston & Garson, 1991). Hailstorms occur from April-June [Q.A2]. The nearest meteorological stations are at Sainj and Shangarh [Q.A1], both in the Sainj valley. Sainj is about 12 km to the west of the Park, at an altitude of about 1,400 m and Shangarh is about 6 km to the west of the Park, at an altitude of 2,000 m.

### **2.1.5 Hydrology, Wetlands and Water Bodies**

The Park is mainly drained by the westwards-flowing Parvati, Jiwa Nal, Sainj and Tirthan rivers and their many tributaries. All four rivers originate within the Park, near the eastern boundary, and are steep-sided and narrow throughout their length [Gaston et al. 1981]. The Jiwa Nal and the Sainj meet (outside the Park) shortly before the latter merges with the Tirthan at Largi, about 14 km from Sainj, to flow into the Beas. Thus, the Park includes a major part of the upper Beas catchment. Several seasonal streams also drain the Park and there are numerous springs [Q.A2]. There are some 30 small lakes in the Kamba Reserved Forest to the north of the Tirthan, 1 small lake to the south of the Tirthan, and 4 small lakes in the Paniharu Protected Forest, south of the Jiwa Nal. Waterfalls of varying heights (10 m to more than 60 m) are found throughout the Park, but are particularly common in the Sainj Valley. In addition, there are some 50 glaciers of different sizes [dir]. Natural seasonal water shortages occur in the upper reaches from mid-September to October [mp,QQ] and wild animals are reported to come down to lower altitudes in search of water. Such shortages have been noted in the Basu Protected Forest and the *thaches* listed below: Asurbag and Jatholi in Tirthan Valley; Dhela, Kaili and Niari Naina in Sainj Valley; Apgain (Up Gain) in Jiwa Valley; and Kasal. A list of *thaches* and their location in the Park, as reported by SOI, is given in Map II.

### **2.1.6 Vegetation**

#### **Forests :**

The forests of Kullu District were settled between 1886 and 1896 (A. Anderson). The area included in the Park falls within the following categories:

1. Reserve Forests	4,115 ha
2. Demarcated Protected Forests (D.P.F.) Class II	63,125 ha
3. Unclassified Protected Forests (U.P.F.) Class III	9,186 ha
4. Non forest Cultivated lands	74 ha
<hr/>	
Total	76,500 ha
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**Source:** [Anon. undated]

There was little commercial exploitation of the forests in the present Park area prior to World War II, because of the inaccessibility of these forests [Garson and Gaston, 1985; mp; see 2.1.9]. Some felling took place during World War II, to meet the increased demand for timber created by the war [mp] Felling of certain species, notably fir, increased between 1949/50 and 1979/80 under the Fourth Forest Working Plan, but this appears to have been confined to a relatively small area, 2,288 ha [mp]. About one third of the Park comprises closed canopy forest. Most forest cover occurs in belts around the Jiwa, Sainj and Tirthan and their tributaries, in the western half of the Park [Map I], extending to 3,300-3,600 m, depending on aspect: throughout the Park, north-facing slopes are more densely forested than south-facing ones, as is characteristic of the front ranges of the Himalayas, particularly below 2,500 m. This is thought to be due to the moist conditions typical of north-facing slopes which inhibit the spread of natural and human-made fires. South-facing slopes receive greater insulation and are consequently more prone to fire and erosion, thus creating a steep dry habitat where oak (*Moru* and *Ban*) is probably the natural climax. Above 2500 m, open areas tend to occur mainly on moderately sloping ground.

Fourteen forest types have been recorded in the Park, according to Champion and Seth's (1968) detailed classification [Annexures 12 and 14]. A more general categorization is used by Gaston et al. (1981) as follows:

subtropical pine forest, characterized by *chir* pine, between 600-1700m  
Himalayan moist temperate forest, characterized by both coniferous and broad-leaved species, between 1,500-3,600 m;  
Subalpine forest dominated by birch and fir species, between 3,000- 3,400 m;  
Moist subalpine scrub characterized by Rhododendron species, between 3,000-3,5000 m, and Dry alpine scrub characterized by juniper species, between 3,400-3,800.

*Chir* pine forms dense stands at low altitudes. Blue pine or *Kail* is dominant below 2,000 m on north-facing slopes in both the Sainj and Tirthan valleys<sup>1</sup>. Mixed deciduous forest harboring such species as oak, horse chestnut, walnut, maple, elm and bird cherry, tends to occur from around 1,800 m onwards, on moderately sloping ground, often on valley floors. Riparian vegetation is frequently dominated by alder trees.

Oaks are thought to form the climax vegetation throughout most of the moist temperate zone. Three species with differing, but overlapping, altitudinal distributions occur in the Park, particularly noteworthy is the presence of undisturbed low/middle-altitude Himalayan oak forest, which is now very rare elsewhere. *Kharsu* oak may occur from about 2,000 m upto about 3,500 m. *Ban* oak varies between 1,800-2,400 m, overlapping the lower limit of *Kharsu* oak. *Moru* oak is a middle altitude oak, overlapping the upper range of *Ban* oak and the lower range of *Kharsu* oak.

Both *Ban* and *Moru* oak are frequently associated with Rhododendron arboreum which rarely forms pure stands, as well as with *deodar* and *kail*. Spruce and fir are generally associated with *Kharsu* oak, particularly fir which

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<sup>1</sup> The information in the rest of this section is based on Gaston et al. (1981), much of which was confirmed by our own field observations (FV1 & 2).



usually grows at higher altitudes than other conifer species. *Kharsu* oak and fir trees become smaller in stature as they occur closer to the tree line and gradually become mixed with birch and Rhododendron campanulatum. Moist subalpine scrub (less than 2 m high) and lower scrub (less than 0.5 m high) comprising chiefly of Rhododendron lepidotum and R. anthopogon mixed in places with juniper (Juniperus commoris), predominates after about 3,400 m, continuing upto 3,700 m, usually occurring in patches interspersed with meadows and bare rocky crags.

Lower altitude forests generally support a dense understorey with a high diversity of shrubs. Common understorey shrubs include Indigofera, Viburnum, Sarcococca and Berberis species. Some areas, particularly forests on north-facing slopes, harbour a dense understorey of bamboo (Arundinaria spathiflora) which forms impenetrable thickets in places.

Ground vegetation is strongly seasonal in character: dense thickets of annuals develop during the rainy season and die off in autumn. The perennial Iris kumaonensis, reported to spread as a result of disturbance, forms an important component of the ground vegetation in some coniferous forests.

#### **Grasslands :**

The area of grassland in the Park is not fully recorded. The FSI map only shows grasslands around the headwaters of the three rivers [see Map I]. However, grasslands are known to be found elsewhere, e.g. Dhela Thach in Sainj valley and Nada Thach in Tirthan valley. Alpine meadows occur above about 3,800 m, the upper limit of subalpine and alpine scrub communities [Gaston & Garson, 1991]. These meadows have a high diversity of herbaceous species, many of which have medicinal or aromatic properties and are of great commercial value [see Section 4.1.5 and Annexures 15 and 16]. Grasslands are also found below the tree-line, and it is not clear whether these have been created and maintained by human activities such as pastoralism, especially grasslands surrounded by natural forest, e.g. Nada

Thach in Tirthan Valley. Lower altitude grasslands are sometimes associated with scrub vegetation, which is usually dominated by Indigofera, Berberis and Rubus species.

#### **Flora :**

The Park has very high floral diversity. A list of species reported both from the Park and the general area is given in Annexure 13, though the list is not comprehensive. A number of weed species have also been identified, viz.: Polygonum, Strobilanthus, Cannabis, Balsam [QQ] and Rumex species and Girardiana heterophylla [A.J. Gaston, pers. comm., 1991]. Weed cover has increased since 1984 and has been observed in the following forest blocks: Rolla, Tirth, Dhela, Deun and Maraur [QQ].

### **2.1.7 Fauna**

Very little is known about the Park's fauna, other than some general information on bird and mammal species. A number of threatened<sup>2</sup> mammal and bird species are found in the Park, including some endangered species such as musk deer and western tragopan pheasant. Other threatened species found in the Park include the Himalayan brown bear, Himalayan tahr, and possibly snow leopard, wolf and ibex, but the presence of the last three remains to be confirmed. Occurrence and distribution of other fauna (reptiles,

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<sup>2</sup> The term 'threatened' has been used here in accordance with the internationally accepted usage coined by the International Union for Conservation of Nature and Natural Resources (IUCN). This term is used for species which are in one of the following categories:

Endangered: Species/taxa in danger of extinction and whose survival is unlikely if factors threatening them continue to operate.

Vulnerable: Species/taxa likely to move into the endangered category in the near future if threatening factors continue to operate.

Rare: Species/taxa with small world populations that are not at present endangered or vulnerable, but are at risk of becoming so.

Source: Singh 1991 (p. 154)

amphibians, fish, invertebrates) does not appear to be comprehensively documented.

Pandey states [Pandey, Pers. comm. 1996] "...a recent survey team of WII could sight red fox in Dhela thach of Sainj catchment in the month of October, 1995. Similarly, herds of blue sheep have been sighted in Tirath thach of the Tirthan valley. Serow has been sighted in Gumterao thach of tirthan and in Gatipat area of Jiwa Nala. Himalayan tahr is very important mammal found in all the four valleys of GHNP."

Gaston et al. (1981) provide some details of the altitudinal range, habitat preferences and relative status of most of the mammal species and all the pheasant species, found in the park. Some additional information on certain species, for example the localities in which they are known to occur, is given in the Management Plan [see Annexure 19]. General information was also obtained from the villagers of Manjhan, who reported seeing the following animals: black bear, brown bear, leopard, goral, rhesus macaque, langur, porcupine, musk deer, Himalayan tahr, snakes and a variety of birds [HHS 1 & 2]. Villagers were not able to specify the abundance of different species or of trends in population, but one respondent said that brown bear and musk deer are seen less often than the other animals and brown bear and Himalayan tahr are only seen in the high altitude meadows [HHS 2]. Wild animals concentrate around cultivation areas, during harvesting, in March-April and in October-November [HHS 1 & 2].

#### Mammals<sup>3</sup>:

High altitude mammals which appear to attain the upper limit of their range at or around the snow-line (5,000 m - 5,300 m) include blue sheep, brown bear, and possibly snow leopard and Himalayan ibex.

Himalayan tahr, musk deer and pika occur at middle to high altitudes. Low (1,600 - 2,200 m) to middle (2,200 - 2,800 m) altitude species include

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<sup>5</sup> The information in this section is from Gaston et al. (1981), unless otherwise stated.

porcupine, Rhesus macaque, barking deer, jackal, Himalayan weasel, Himalayan palm civet, jungle cat and possibly leopard cat.

Certain species have a wide altitudinal range (spanning low to high altitudes), notably Himalayan black bear, leopard, fox, yellow-throated marten, langur and flying squirrel.

Several species inhabiting the middle and upper altitude forests show annual altitudinal migrations, probably in response to heavy snow fall. These include langur, fox, yellow-throated marten, and possibly also goral, tahr and black bear, but to a lesser extent.

Of the alpine mammals, the ibex and blue sheep remain active and above the tree line all winter, however the former's occurrence in GHNP has not been confirmed. Musk deer are known to live permanently between 2,500 - 3,400 m. The distribution of Himalayan weasel and the jackal appears to be associated with areas of human habitation.

The exact local status and geographical distribution of different species needs to be established, particularly of the ibex, snow leopard, brown bear, wolf and musk deer.

The highly endangered snow leopard is suspected to occur in areas within and adjacent to the park. Reports suggest that it occurs at very high altitudes in snow bound areas, though within the Park, its occurrence is not confirmed.

Also, the highly endangered wolf is known to occur in the region, but Gaston *et al.* (1981), reports no signs of its presence in either the Sainj or Tirthan Valleys. Pandey [Pers. Comm. 1996] suggests that snow leopard, wolf and ibex should not be mentioned as even possibly occurring in GHNP as we have no confirmed report of their occurrence. Gaston *et al.* (1981) also reported that the brown bear population is on the decline and that the musk deer will become locally extinct unless poaching is greatly reduced. Recent surveys suggest that the musk deer population has been recovering, but no evidence of snow leopard or wolf was found in the areas visited in the three valleys [Gaston & Garson, 1991]. Barking deer are also relatively rare. It is

thought that these two deer may also be affected by grazing of livestock as both prefer areas with a dense understorey. However, black bear and leopard are believed to be relatively widespread, and "quite substantial" tahr populations are also believed to be present. Jungle cat, Himalayan palm civet and leopard cat appear to be much rarer than yellow-throated marten, fox or Himalayan weasel. Yellow-throated marten seems to be widely distributed in forested areas [Gaston et al., 1981], but is less numerous than fox or weasel [mp].

A list of mammals reported from the Park is given in Annexure 17.

#### **Birds :**

Gaston et al. (1981) identified 117 bird species in the Sainj and Tirthan Valleys alone. Thus, the total number for the whole Park may be higher. The Management Plan cites 150 bird species, but the source of this list is unclear. Gaston, Garson and Pandey have also published a bird list in Forktail (1994).

Yet another bird list was obtained from Park authorities on the latest field visit, but its source is also unknown. Thus, a bird list of over 300 species has been compiled on the basis of the Himachal Pradesh Directory list, based on Gaston et al. (1981) Gaston (1986) and Gaston et al. (1994), and the list provided by Park authorities [see Annexure 18].

The classification of the 221 species sighted in the whole upper Beas catchment area by Gaston et al. (1981) suggests that a large proportion, if not the majority, of species found in the Park are residents. However, a significant number of summer migrants and a smaller proportion of winter migrants are also present.

The majority of species are passerines. A number of major raptor and pheasant species also occur in the Park. Notable among the latter, is the highly endangered Western tragopan, of which a viable population is believed to be present in the Park, as well as the threatened monal and *cheer* pheasants.

**Other:**

Reptiles reported to occur in the Park include either Russell's or Himalayan pit viper (Vipera russeli or Agkistrodon himalayanus) [Dir].

### **2.1.8 Special Features of Significance**

The sources of the Parvati, Jiwa Nal, Sainj and Tirthan Rivers are all located in the Park, near its eastern boundary.

**Land Use :**

The Tirthan and Sainj valleys together are known as Inner Seraj and the forests within the Park earlier came under the Seraj Forest Division, while the Jiwa Nal and the Manikaran valleys are part of Waziri Rupi [Gaston et al., 1981;<sup>c</sup> mp] area and its forests came under the Parvati Forest Division. Details<sup>4</sup> of the different ranges, the forests within each range and the administrative Kothis in which they fall are given in Annexure 38.

Although there has been little commercial exploitation of the area [see 2.1.6], local people have, for generations, exercised a number of rights in the area now included in the Park. These rights have been recorded in the Rights and Settlements of Kullu District, 1886 by Alex Anderson. While only limited rights, such as right of way, were allowed in Reserve Forests, a large number of rights could be exercised in the D.P. Forests (Class II), including livestock grazing, extraction of timber and collection of fuelwood and non-wood forest produce. Local people had unlimited and unsettled rights in the U.P. Forests (Class III). New areas could be brought under cultivation in such areas, even if this entailed clear-felling and burning of forests. However, the Government has recently suspended the right to cultivate new areas in U.P. Forests (Class III) [mp].

<sup>4</sup> Most of the information available with us and given in this report is for the Jiwa Nala, Sainj and Tirthan valleys. Information about the Manikaran valley is not available. Even the park authorities have little or no information about the latter since the administrative control of the area has not yet been handed over to them by the territorial wing of the forest department.

Much of the area adjacent to the Park remains uninhabited, particularly to the north, east and south-east, and a significant amount falls within other wildlife conservation areas [see Chapter 1]. However, there are numerous hamlets and villages and associated cultivation to the west and south of the Park within a radius of 10 km [see 2.2.].

The nearest town to the Park is Kullu (60 km to the north-west), the nearest railhead is Joginder Nagar (100 km to the north-west), and the nearest airport is at Bhuntar (45 km to the north-west).

#### **Habitation:**

Until recently, there were four small villages with between 20-30 families [see Section 4.1.1 regarding discrepancies], with the right of habitation in the Park. These were Kundar and Manjhan in the Jiwa Nal valley and Shakti and Maraur in the Sainj valley. As of 1990, there was no permanent habitation in Kundar [see Section 4.1.1], but the other three villages remained inhabited throughout the year. Recently, even Manjhan has now being abandoned, except for a pujari (priest) who maintains the temple there. Park villagers practice small-scale cultivation, herd livestock and also have other rights, including the right to various forest products [also see all sections in Chapter 4].

Most of the human habitation outside the Park is to the west, south-west and south, and is concentrated in the lower Jiwa, Sainj and Tirthan valleys. There appear to be nearly 200 hamlets (belonging to 18 revenue villages) within a radius of 10 km [tp; see Annexure 35]. According to Park authorities, there are 22 villages within a radius of 10 km with an estimated population of 1200 [Q.A2].

#### **Agriculture:**

Details of agriculture in the Park and in the adjacent areas are given in Section 4.1.2. and 5.2.5 respectively. Until around 50 years ago, most of the people in the region were involved in subsistence cultivation and pastoralism.

The introduction of apples and potatoes has led to an increase in cash cropping. However, Gaston et al. (1981) report that there were few signs of development in the Inner Seraj area in 1979-80: there were few fruit orchards, no significant government developments or tourism. There is extensive terracing in the lower Sainj and Tirthan valleys: for example, there are some 60 ha of terraced cultivation in Lapah alone, in the Sainj valley, on the Park's boundary [Garson, 1983]. In most places, two main crops are grown: first wheat and then maize, both largely for consumption. Peas, beans and cabbage are also grown largely for consumption.

**Pastoralism:**

Details of pastoralism in the Park and in the adjacent area are given in Section 4.1.3 and 4.2.2. respectively. Next to agriculture, livestock is the most important source of income as well as wealth in the agriculture based economy. Every household invariably keeps a few cows, sheep and goats. Besides providing supplementary income, livestock also provide manure for the fields. Cows and bullocks are mainly utilised for ploughing the fields [DCH].

**Forestry:**

There are no commercial forestry operations within the Park. Trees are occasionally felled by the Forest Department for constructing patrolling huts or for domestic requirements of Park villagers [see Section 4.1.8].

Timber extraction by the Forest Department is an important activity in the adjacent area of the Park. Some areas surrounding the Park are completely deforested [Garson, 1983; FV2]. Other forms of forest exploitation are also taking place in adjacent areas, for example resin-tapping from *Chir* pine [Garson and Gaston, 1985; FV2].

**Industry:**

There are no industries within the Park. Due to its location, the Kullu district is not having any large scale or medium industrial units. The small scale units such as shawl making, carpet weaving, hosiery, knitting and pattu making are



mostly concentrated in Kullu Tahsil. The district is also known in the country for its multi-coloured caps and shawls. The following industrial training schools run by various agencies were functioning in the district.

- i) The Rural Industrial Training Institute, Kullu
- ii) Girls Industrial Training Institute, Kullu
- iii) The tailoring centers are being run by the Industry department and are located at Jari, Katrain, Banjar, Nermand and Ani.
- iv) The Handicraft and Handloom Corporation of the Government of India is also running a production-cum-training centre for Shawls, at Badah.
- v) Under the Rural Artisan Programme run by the district industry centre, Training courses for weaving, automobile repairs, carpentry, tailoring and hosiery are being conducted in Kullu.
- vi) Training to the rural youth seeking self employment is being organised in collaboration with the block agency under a central rural development scheme.
- vii) The Industrial Training Institute at Shamshi provides training facilities in 14 trades: fruit preservation, welding, electric repairs, motor mechanics, civil draughting, fitting, stenography (English and Hindi), masonry, carpentry, upholstery work, tailoring, wiring and turning.

**Mining:**

There is no mining within the Park. Slate mining in the surrounding areas is reported to be an important activity.

**Commerce:**

There are no commercial activities going on within the Park. The main commercial centre in the area is Kullu. Smaller centers include Bhuntar and Aut, about 45 km. north-west and 35 km west, respectively, from the Park.

**Roads:**

There are no roads within the Park. Approaches by road to the Park are: From Delhi to Aut (484 km) on the Delhi-Kullu road, then to Sainj (20 km), on

to Neuli (12 km) thereafter on foot (2 km) to the Park. Alternatively, from Aut to Gushaini (28 km), and on foot to the Park (5 km).

**Development Projects:**

There are no development projects inside the Park, but projects under construction in the adjacent area which may have an impact on the Park include the Parvati Hydel Project in Kullu District.

**Other Government Land Based Activities:**

There are no such activities in the Park. For activities in the adjacent areas see section 2.2.

**Tourism:**

Only 16 tourists visited the Park in 1990-91, of which one was a foreigner and the rest Indian. In the past few years, however, the number of tourists visiting the park is on the rise. The best months for tourism are May-June and September to mid-November, when general visibility and weather conditions are good [Q.A2]. Other visitors to the Park included some 50 students. Further details of tourism in the Park are given in Section 6.1.4.5.

**Others:**

Fires are prone to occur in the Park during the two dry periods of the year, in May - June and from September to November (QQ). These are usually started inadvertently by local people moving through the Park [Garson, 1983; Gaston et al., 1981; QQ]. Small areas that had been burnt by such accidental fires between Chalocha and Nada Thach in the Tirthan Valley, and on the way to Gati Pat in the Jiwa Nal valley, were observed during the various field visits. [FV2].

## 2.2 SOCIAL

### 2.2.1 *History Of Human Habitation*

#### **Inside the park:**

The inhabitants of Shakti and Maraur (villages within the PA) believe they settled in the area "several generations after a battle took place near Rampur in Bushair". (One generation was defined as approximately 30-40 years). More recently (about 15-20 years ago), some harijans (lohars) moved into the area, but were unable to adjust to the inhospitable environment. Those who survived moved out some years later [FV1] The villagers of Manjhan, also located within the park, were very vague about their origins: they did not know how old their village is, nor where their ancestors had come from. "Many people" apparently left the village "a long time ago" to settle in Pashi (6 km to the south-west) and Kharongcha [In Tirthan valley] after having bought land in those villages [HHS1]. No information was obtained about Kundar [FV2].

#### **Adjacent areas of the park:**

Kullu was formed into a separate district in 1963. On formation, the district had four tehsils. Namely Kullu, Banjar, Ani and Nermand. Kullu district has not had any jurisdictional change since its formation. The most populous village in the district is Kharal with a population of 6,747 persons and the most populous town is Kullu with a total population of 11,869 persons, as per 1981 census [DCH]. The tehsils adjoining GHNP, are Tahsil Kullu and Banjar, are on the western side of the park covering the catchment areas of Jiwa Nal, Sainj and Tirthan rivers.

The eastern part of the park is mainly snow bound, with almost no human population.

2.2.2 Demography

The population of the Park villages according to Park records is as follows:

Village	No. of Families	Total Population
Kundar	1	24
Manjhan	11	80
Shakti	4	16
Maraur	8	50
<hr/>		
TOTAL	24	170
<hr/>		

Source: [QQ/FV2]

However, during the 1989 field visit the inhabitants of Shakti said that there were 8 families in Shakti: it is possible that some families have moved out. Garson (1983) reports 4 families in Shakti and 12 in Maraaur. Furthermore, according to the respondents in Manjhan there are 13 families in the village, of which only two are resident all year round, and 11 are temporarily resident. Since 1990, there has been no resident population in Kundar. Members of the one family that has land in Kundar visit the area seasonally to cultivate their land. As a result of these discrepancies, the exact number of temporarily and permanently resident families in the different villages is not clear, but the total number is likely to fall in the range of 20-35.

The two resident families of Manjhan comprise 27 members. Their population composition is given in Annexure 21. Members of the non-resident families come and stay in Manjhan in May-June and October-November in order to cultivate their land. At any one time, there may be a maximum of 40-50 people present. During the team's visit, the population fluctuated between 6-11 people. Details of the villages to which temporary residents of Manjhan and Kundar belong are given in Annexure 22.

Comparable details of demography are not available for Shakti and Maraaur.

### **Adjacent areas:**

Tahsil wise, Kullu Tahsil has a total population of 137,177 persons spread over in 85 villages and 3 towns. The males are slightly more than females i.e. 52.8 percent are males and 47.1 percent females.

Banjar Tahsil is entirely rural and has a population of 34,006 persons spread over in 41 villages. Of the total population, 51 percent are males and 49 percent are females.

Banjar Tahsil has a schedule caste population of 27.39 percent while the tribal population comes to only 0.46%. Kullu Tahsil has a schedule caste population of 24.72% and a tribal population of 5%.

Kullu Tahsil has a literacy rate of 37.7% while Banjar Tahsil has a literacy rate of 31.8%. In both these areas the male literacy rates are higher than the female literacy rates.

All the villages of the Kullu Tahsil have educational institutions of one type or the other while in Banjar Tahsil 95 percent of the total villages have education institutions.[DCH '81]

### **2.2.3 Caste**

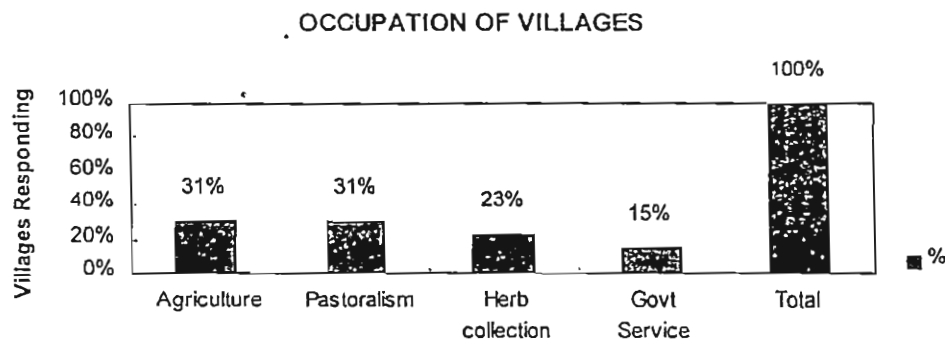
All the Park villagers are Rajputs, with the exception of one temporary resident of Manjhan, who is a Lohar (harijan). Hinduism is the dominant religion in the adjacent areas of the park, with people belonging to different castes. Most villages have a single dominant caste although there are few multi caste villages. The predominant caste among the Hindus are Rajputs, Zamindar and Schedule castes. Schedule castes mostly comprise of Kolis and Chamars. There was one village, Chamarda, with only Harijans [FV'94].

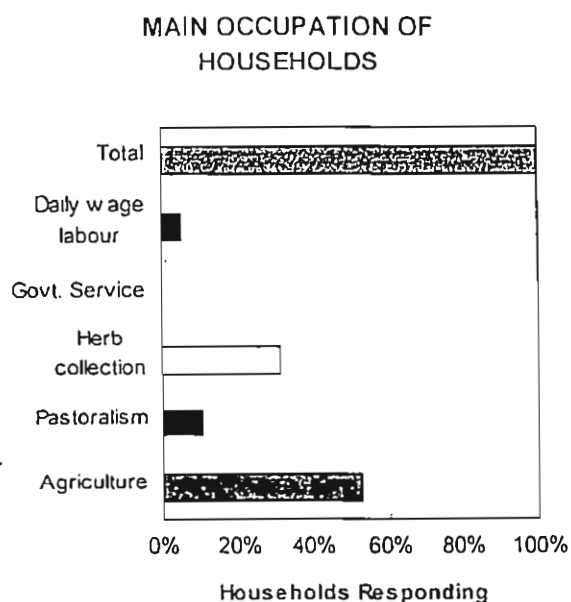
### **2.2.4 Religion**

All the Park villagers are Hindus. The predominant population of the Kullu district comprises of Hindus, followed by Buddhists and a sprinkling of others : Sikhs, Jains and Christians. [DCH '81]

2.2.5 Livelihood and Economic Levels

The Park villagers are primarily agriculturists, but also keep small numbers of livestock (mainly sheep and goat). Other important economic activities include *gucchi* or morel mushroom collection in April-May [see 4.1.7] and herb collection from May to November [see 4.1.5]. The proportion of income derived from various activities is not known for most villagers. However, the sale of *gucchi* and herbs is the principal source of monetary income for the two resident families of Manjhan [HHS 1 & HHS 2]. *Gucchi* and herbs are also reported to be the sole or principal source of income for many families in villages in the areas adjacent to the Park [PA, Ajay Rastogi, Vikram Singh, pers. comm., 1991]. An additional, but generally undisclosed, source of income may be the sale of Cannabis products, which are illegal.





The main crops grown are maize, wheat, potato, *Saryera* (a millet) and *rajma* (red beans). Pumpkin, Cannabis and tobacco are also grown in small quantities. All agriculture is for subsistence. According to the Manjhan villagers, their cultivation yields only enough food for one month: details of yields of major crops is given in Annexure 24. Food for the remaining months has to be purchased. Further details of cultivation are given in 4.1.2.

Virtually all pastoralism is also for subsistence. Livestock are occasionally sold, for example at the Labbi Mela. One household in Manjhan had recently sold a goat for Rs. 800/- and some 20-30 kg of wool [HHS2]. The Manjhan villagers buy approximately two cows per year (from Bhuntar) at a cost of Rs. 1200/- each. Additional information on pastoralism is given in 4.1.3.

Commodities which have to be bought from the market include: food staples, cooking oil, spices, sugar, pulses, onions and other vegetables, medicine for livestock and seeds for sowing.

### **2.2.6 Traditional Skills**

Traditional skills include spinning and weaving, woodwork, stonework, rope-making and bee-keeping. Both adult men and women spin and weave

wool. Sheep's wool is used for making coats and *pattus* (a blanket worn by women as a pinafore), while wool from goats is used only for making *shelas* (a large rug for sitting or sleeping on). Men and women also weave *mandrus* (grass mats) from *shaddol* grass. Only men do woodwork, which includes house construction and repairs, and the manufacture of agricultural implements such as axes and ploughs. Men also make rope from Cannabis stalks and quarry slate for making roof tiles. The rope from Cannabis is used for making the soles of snowshoes (*poolas*) made from goat hair and for the soles of colorful slippers used in the temples. All these products are for the villagers' own use. The villagers make traditional medicines from local herbs and plants for various ailments. For example, *Hathpanja* is used to heal warts.

Formerly, when local people were allowed to hunt, animal skins were used for various purposes. For example, tahr skin is supposed to make extremely strong rope which is used for ploughing. (The field visitors saw one such rope in Maraur in 1989). Villagers said they now use nylon rope [FV1]. Goral skin was used to make sacks to hold grain, flour, etc.

However, such sacks are now rarely made, although a number of wild animal skin sacks can still be seen in villages adjacent to the Park. Bhang (Cannabis), which grows wild in these areas, is also put to use by the villagers [FV'94].

### **2.2.7 Village Institutional structures**

Information was collected on village institutional structures. Manjhan and Kundar are both part of Railah Panchayat, Bhalan Kothi, (local name for earlier big administrative division), Railah Phati, (local name for earlier small administrative division), Sainj Sub-tahsil, (current administrative division) and Banjar Block (current administrative division). The village *devtas* and the *Devta* Committee appear to be very influential. No major decision is taken without consulting the *devta*. Members of the *Devta* Committee include the



*Kardhar* and a *Palsara*. The District Administration is apparently involved in the selection of the *Kardhar*(the *medium/Pujari*) and *Palsara* (Pujari's assistant) [VS] *Pujari* and the accountant are selected by the *devta*.

Livestock grazing in summer is organized on a community basis. Families pool their livestock into a single herd, which is taken up to the high altitude pastures by a few members of the village.

In the rural areas of the district, the houses are generally built of stones perched with layers of wooden beams, which make the building some what quake resistant. The walls are plastered with clay and the roofs are covered with slates supported by timber. The houses are generally two storied but in the high hills, where the conditions of living are influenced by the vagaries of weather, multistoried houses are also common. The ground floor is used for housing the cattle, sheep and goats. The first and subsequent floors are used for living purposes. [fv'94]

### **2.2.8 Social Interactions**

There are both kinship ties and religious interactions between the Park villages and between Park villages and villages in the adjacent areas. In Shakti and Maraur, marriages generally take place between members of the two villages; the villagers also reported that men may have more than one wife, living in different villages for much of the year, but in winter they may all live together. People from Manjhan have close relatives living in adjacent areas such as Railah, Pashi, Majharna, etc., whom they meet several times a month. *Melas* or religious fairs take place at different times in different villages and are attended by people from villages in surrounding areas.

In Manjhan, one household told the research team that they do not allow low caste people into their houses and will not take food or drink from their hands [HHS2].

### 2.2.9 Culture

*Devtas* and religion play a significant role in the culture of the four villages inside the park. In both Kundar and Manjhan and, apparently, all of the Sainj valley, the *devtas* have banned the raising of poultry and the use of leather. However, although leather shoes are completely taboo in Manjhan, it was noticed the women use leather belts.

In Maraur, marriages are apparently to some extent dictated by the location of the potential bride and groom's houses relative to the temple. Thus, members of households to the left of the temple, may only marry members from households to the right of the temple, and vice versa [FV1].

The village *devta* plays an important role in decision-making. Major decisions are not taken without first consulting the *devta*. This is known as *deli* or calling the spirits. Each village has one or more of its own *devtas*, with one being more powerful than the rest. The *devta* at Shakti is believed to reside in or be an enormous rocky outcrop overlooking the village. The Manjhan *devta* is called *Sunnunarain*. One household also considered a particular rock, *Khoru Dev* near their agricultural fields and another rock, *Shangri Dev*, near the house, both to be sacred [HHS2]. The same household also considered the well, *Rudra Nag*, to be sacred. The other household in Manjhan reported that they considered everything around the village within a radius of 500 m to be sacred [HHS1]. *Devtas* are sometimes transported to another village if people there wish to consult the *devta* on some issue.

Religious fairs or festivals (*devta melas*) are held in each Park village in March-April and June-July [Q.A1]. Religious fairs are also held at Manjhan during February-March, April-May and August-September. However, fairs can also occur at other times, whenever the *devta* wishes. A special kind of festival is the *Jug Bhog*, when a household, family or an individual decides to feed the community in thanksgiving. The actual date of the *Jug Bhog* is decided by the *Kardhar* and the *Palsara* [VS]. During Dussehra, villagers

wash the feet and tail of their cows and put on garlands of flowers and *tikka* [HHS2]. In Manjhan, one household reported that they fast and pray to the moon on Tuesdays and Sundays (*Puranmashi*) [HHS2].

### 2.2.10 Problems

Very few amenities or social services are available to the Park villagers. Villagers of Shakti, Maraur and Manjhan identified the following as problems: the lack of markets, medical facilities and schools within easy reach; the lack of road connections with other areas; and destruction of crops and livestock by wild animals.

The nearest market for the villagers of Shakti and Maraur is at Sainj, 18 and 22 km away, respectively, although there is one shop at Bah which supplies many of their needs, 5 and 9 km away, respectively. Reportedly, there is also a Cooperative Depot at Shakti, where some provisions are available. The nearest medical facilities are also at Sainj where there is a sub-health centre. The nearest veterinary facilities to Shakti and Maraur are at Bah where there is a veterinary compounder and a veterinary assistant surgeon [Q.A1].

The nearest market to Manjhan is Seund, in the Sainj valley, (14 km south), although villagers sometimes have to go to Sainj (20 km south-west) to buy provisions. Some members of Manjhan generally make a trip to the market once a week to buy provisions: each trip requires three days, one day to reach the market and two days coming back with the load. The nearest medical facilities available to Manjhan is the dispensary at Sharan (7 km south-west) and the sub-health centre at Sainj. An additional problem mentioned by the villagers of Manjhan is the lack of an appropriate person to administer the last rites: someone has to be called from Pashi, (8 km south-west).

There is a school in Shakti. None of the other Park villages have a school. A school master gives lessons sporadically in Shakti. Some children from

Maraur also attend lessons at Shakti. All the respondents from Manjhan were illiterate.

One respondent in Manjhan also complained of ill health, lack of money, bad paths, and the cold and snow in Manjhan (HHS2).

Problems faced by villagers in the adjacent areas of the park are mainly illiteracy, lack of water for drinking and agriculture, poverty due to unemployment, small yield from agriculture due to small land holdings, steep slopes so water and dung run-off easily, lack of higher educational facilities, no dispensary, lack of adequate road network, little wage labour available to villagers to supplement their income [vs, hhs, '94]. Under the recently initiated ecodevelopment project, some additional employment has now (1996) become available.

### 3. VALUES AND OBJECTIVES OF THE PARK

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The conservation values of an area may be its biological/ ecological, cultural, economic, religious and/or other significance. Such values may be:

- a) local, e.g. a locally threatened species
- b) regional, e.g. protection of catchment forests
- c) national, e.g. protection of a representative biogeographic area or endemic species
- d) international, e.g. protection of globally endangered or threatened species

The objectives of an area are generally derived from its values. Some of the conservation values and objectives of Great Himalayan National Park have been stated in the Park's Management Plan. There is no other official statement of the values and objectives of the Park.

The introduction of the Management Plan enunciates the values of the park in terms of needs :

- 1. The need to conserve ecological processes and 'life-support systems'.
- 2. The pressing need for conservation of remaining wilderness areas because of the accelerated rate of environmental degradation and destruction in India in the last 40-odd years,
- 3. The need to conserve wildlife as it is "an integral component and index of health of an ecosystem" [mp:p.1] and as part of the establishment of a network of protected wildlife areas which is one of the objectives of the National Wildlife Action Plan.
- 4. The need to preserve a part of the outstanding scenic beauty and the diversity found in Himachal Pradesh.
- 5. The need to preserve a representative area of the Western Himalayas.
- 6. The tourist potential of the area and hence possible economic benefits to be derived by local people [Source : mp,p.2].

Values (1) and (3) are general or global values, while, values (2) and (4) are national. Value (5) is both national and international, and (6) is local or specific to the area.

The objectives of the Park as stated in the Management Plan (p. 17-18) are as follows:

1. "To obtain perpetual ecological balance by creating optimum conditions for the development of wild animals and birds and their habitat in the Park area."
2. "To protect, conserve and multiply the endangered wildlife species such as snow leopard, blue sheep (bharal), Himalayan tahr, musk deer, monal and Western tragopan".
3. "To eliminate all such factors as are inhibitory for the development of the National Park and its ecosystem."
4. "To provide for wildlife census and its scientific study."
5. "To cater to the recreational and educational aspects of wildlife management especially for students and tourists both local as well as foreign."
6. "To specifically provide for employment opportunities to the local people who used to exercise rights in the park area for generations."

Perhaps the Park has additional values not expressed in the Management Plan and a summary of these additional values is given below:

- i) The presence of one of the few known viable populations of the highly endangered Western tragopan pheasant.
- ii) The Park contains the largest population of Himalayan tahr (endemic to India) in Himachal Pradesh.
- iii) The presence of several other endangered or threatened species of flora and fauna.
- iv) The Park contains economically valuable species such as medicinal herb species.

- v) There is believed to be great biological diversity in the Park, much of which is yet to be properly documented and scientifically studied.
- vi) Protection of upper catchment forests of the Beas and maintenance of associated ecological processes.
- vii) Protection of a representative biogeographic area and hence, of a potential biological reference point as the area is one of the least disturbed in the Western Himalayas.

In addition, the Park is contiguous to Tirthan Sanctuary (6,112.98 ha) to the south for a distance of about 15 km, and also to Rupin Bhaba Sanctuary (26,914.50 ha) to the east for a distance of about 5 km. Rupin Bhaba is in turn contiguous to Pin Valley National Park (67,500 ha) to the north for a distance of about 10 km. These four conservation areas together form the largest and least disturbed block of natural vegetation in Himachal, and possibly the Western Himalayas [Gaston & Garson, 1991]. Rodgers and Panwar (1988) have identified the establishment of the Park as both a national priority for wildlife conservation and as the foremost priority for wildlife conservation in Himachal Pradesh.

## 4. PRESSURES ON THE PARK

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### 4.1 PRESSURES ON THE PARK DUE TO ACTIVITIES WITHIN THE PARK

#### 4.1.1 *Human Habitation in the Park*

Until recently there were four permanently inhabited villages inside the PA, namely Shakti and Maraur in the Sainj valley and Kundar and Manjhan in the Jiwa Nal valley. However, in 1990 the one family/household in Kundar village moved out of the Park area, although members of the family return to Kundar on a seasonal basis to cultivate their land. According to Park authorities, there are 24 families in the PA with a total population of 170, but there are discrepancies with figures quoted by others [see Section 2.2.2].

Shakti is less compact than Maraur, with only two huts on the valley floor, the rest being distributed along the mountain side at different elevations at intervals of about 100-150 m. Manjhan is very compact, with all but one of its 8 residential houses and the two *mandirs* clustered together. There is one house some 300 m below and to the east of the main cluster, which belongs to the only *Lohar* in the village, a temporary resident. There is another building some 500 m to the south of the village, near the cultivated fields, which is used by villagers engaged in crop protection activities.

Most of the buildings are of timber (usually *deodar* or *kail*) and stone. The walls have dry stone masonry between timber framework. The roof structure is of heavy timber beams, covered with slate or, where slate is scarce, wooden planks. (Trusses are not used in roof construction). For example, in Manjhan, only the main *mandir* has a slate roof. Most residential houses are two to three-storey structures with the ground floor being used for livestock: the heat given off by the livestock warms the upper floors. The ground floor may also be used for bee-keeping and storing fodder and fuelwood. The first floor is used for living and the main living area has a hearth which may also



be used for cooking. In Manjhan, one of the permanent residents had a three-storey house with two hearths: one in the main living area on the first floor and one in the kitchen area on the second floor.

Both Shakti and Maraur have associated hamlets, Shagaur which is 2 km west of Shakti, and Kutla, 2 km east of Maraur, consisting of cultivable land and one or two huts which are usually only occupied for a few months in the summer. Villagers may have houses and/or land in more than one village or hamlet.

**History and Trend** - Very little information was obtained on the history of the Park villages, but the villages are likely to be at least several hundred years old [PV].

Habitation has been a right, as recorded in Anderson's Settlement. All the Park villages are Revenue villages.

**Location and Extent** - Two of the villages, Shakti and Maraur, are located in the Sainj valley, while the other two, Kundar and Manjhan, are located in the Jiwa Nal valley [MAP III]. Shakti and Maraur together consist of 54.68 ha of revenue land, and Kundar and Manjhan of 11.33 ha [QQ]. Both figures include agricultural areas. Shakti and Maraur are located approximately 8 km and 15 km east, respectively from Lapah on the Park's western boundary. The distance between the two villages is about 7 km. Both villages are located on the right bank of the Sainj (facing downstream), within about 1 km of the river. Kundar and Manjhan are located 10 and 14 km, respectively, from Seund, the nearest roadhead, in the Sainj valley. The two villages are approximately 4 km apart. There is only one house in Kundar with some agricultural fields around it. Manjhan is situated in a U-shaped valley opposite Thanaur Protected Forest, near the source of a tributary of the Jiwa Nal.

Except for Kundar, Park villages are inhabited throughout the year (see 2.2.2 and 4.1.1.). However, only two of the thirteen families of Manjhan stay in the village all year round. Members of the other families visit the village in

May-June and October-November in order to cultivate their fields. We do not know the number of permanently and temporarily resident families in Shakti and Maraur.

**Impact on Park** - The impact of human habitation per se on the Park is minimal. However, there has been no study of potential impacts like whether it affects the movement of wild animals, makes access to local water points more difficult for the animals, etc. According to Park authorities and Park villagers, habitation has no serious impact on the Park [QQ, HHS1 & 2].

**Management Effort** : As by law no human habitation is allowed in a national park, other than that relating to management of the Park, Park authorities are obliged to relocate the four villages to areas outside the Park. The intention to relocate the villages is clearly stated in the Management Plan (p.16) and some action has been taken in this direction. Progress on relocation is described in Section 5.1. However, there is the option of recruiting the park inhabitants as forest guards, as it is difficult to get the regular forest guards to agree to live in such a remote area. In this way, the PA inhabitants can live on in the park and also earn an income, and the park can also get a greater level of protection. An additional possibility in the case of the inhabitants of Shakti and Maraur, which are situated in the proposed Sainj Sanctuary, is that when it is finally notified as a sanctuary, they be allowed to stay on in the PA, provided they have recorded rights of habitation and their staying is not considered detrimental to the park.

#### **4.1.2 Cultivation**

The villagers practice rain-fed, low-input agriculture for subsistence. In Shakti and Maraur, generally one major crop is sown annually. Maize and wheat are grown in alternate years [FV1]. In Manjhan the following are grown: maize, wheat, potato, *Saryera*, *rajma*, pumpkin and *Cannabis* species [FV2]. Other crops grown by Park villagers include: barley, *kothu*, *Chenopodium* and *Phaseolus* (QQ). The success of the crop depends on various factors such

as sufficient rain at the critical times, extent of damage by wild animals (see 6.1.4), as well as damage by frost and snow. Villagers try to protect their crops by keeping guard dogs. In Shakti and Maraur, they also use muzzle-loading guns and 'country weapons' with blanks to scare away wild animals [PV/FV1].

**Legal Status** - Cultivation within the legal area of the village is a right given to Park villagers, as per Anderson's Settlement (4.1.1.). One case of agricultural encroachment was detected in 1991, close to the Park's southern boundary in Tirthan valley [Q.A1].

**Location and Extent** - There is some cultivation around Shakti and Maraur, but villagers also cultivate land in nearby hamlets, *dogris*, where they have temporary dwellings. Villagers of Shakti cultivate land in Shagaur, 2 km to the west, and villagers of Maraur cultivate land in Kotla, 2 km to the east. Most of the agricultural fields in Manjhan are located below the village to the east, although there are a few small terraces immediately adjacent to the village.

Legally, the villagers of Kundar and Manjhan may cultivate 11.33 ha and those of Shakti and Maraur may cultivate 54.68 ha. The actual extent of cultivation was not assessed by the team. Agricultural activity takes place mainly in April-May and October-November. Details of the agricultural cycle are given in Annexure 23.

**Socio-economic linkages** - All cultivation is for subsistence and crops yield only enough for one month's consumption. In Manjhan, seeds for sowing have to be purchased. No other inputs are purchased in Manjhan.

**Impact on Park** - Impact of cultivation on the Park is minimal, especially as no chemical fertilizers and pesticides are used. According to Park authorities, there is none [QQ].

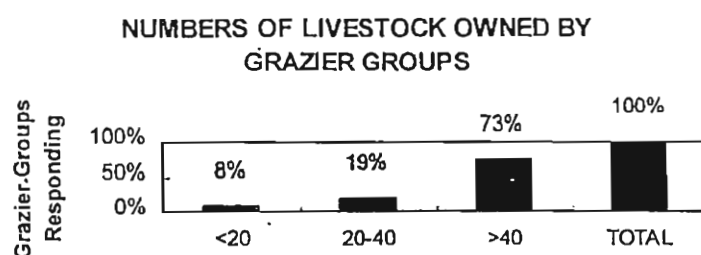
#### **4.1.3 Grazing of Livestock**

Park villagers, local people from surrounding areas, as well as people coming from as far as Ani Tahsil graze their livestock in the Park. Apart from

the Park villagers and people from villages close to the Park boundary such as Lapah, Bah and Kharongcha, all others come on a seasonal basis, from June to September, to graze their livestock in the high altitude pastures or *thaches*. Only sheep and goats are taken upto the high altitude pastures. Sheep and goats of Park villagers and villagers in adjacent areas are also taken upto the high altitude pastures in the summer.

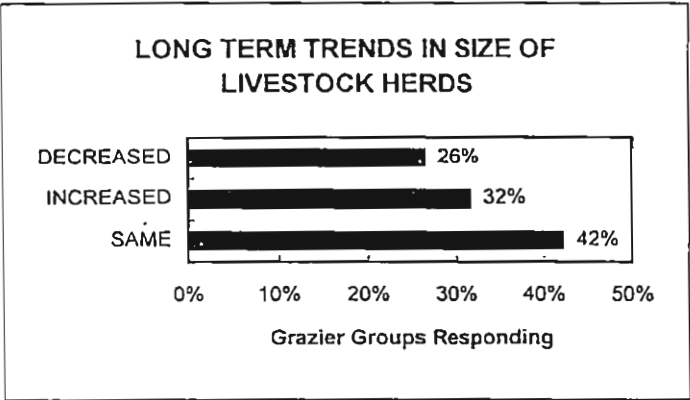
Details of the villages of origin of migratory graziers coming into the park from beyond the adjacent area of the park are given in Annexure 28. These are based on interviews with grazier groups and Park records [FV2].

Flock sizes are variable and the number of graziers accompanying each flock is related to flock size. On an average, a flock of 400-500 animals is generally accompanied by a group of 4 or 5 graziers. Each flock consists of sheep and goats belonging to several families from one or more villages. Graziers coming from beyond adjacent areas often pick up sheep and goats from the other villages of their panchayats, or from villages they pass through on their way to the Park. Such graziers often stay in farmers' fields so that their flock can manure the fields, while the graziers are given food and shelter in exchange. The graziers are paid by the other villagers, often in kind rather than cash [see Section 4.1.3]. The collation of results from the seven groups of migratory graziers interviewed by the team in 1991 is given in Annexure 30. The collation of results from the 13 groups of graziers interviewed in 1992 are annexed at annexure 31.



**History and trends -**

Grazing has been taking place in the Park area for generations. However, there was no clear information on trends: interviews with graziers suggests that flock sizes have remained roughly constant in the last 50 years [see Annexures 29 and 31]. Of the 19 responses recorded from the grazier groups interviewed by the IIPA field visitor's teams, 6 reported an increase in the flock sizes over time, 5 reported a decrease, while 8 reported that flock sizes had remained constant over time.



**Legal Status** - Grazing rights have been given to both individuals and whole villages in and around the Park, as per Anderson's settlement. However, records of rights need to be updated along with full details of the right, i.e. specifications of flock size and areas in which grazing is allowed and the system of inheritance of the right. The rights are said to specify the routes to be taken and the number of days to be spent at each stopping site. Due to lack of regulation and outdated records, it is not clear whether non-rightholders also graze their livestock in the Park, or whether rightholders violate the terms of the right with respect to flock size and/or grazing areas. Significantly, all the grazier groups interviewed claimed that they had a legal right to graze their livestock inside the park, and further that this right was recorded with the forest department.

**Location and Extent** - Grazing takes place throughout the Park. Livestock belonging to the Park villagers are kept indoors during the winter months, from about December to February or March, depending on the persistence of snow. The rest of the year, cattle are grazed around the villages, while sheep and goat are sent to the high altitude *thaches*.

There is little information on the incidence of grazing in the Jiwa Nal valley, except that for Manjhan. Gati Pat, about 5-6 km south-west of Manjhan, is clearly a resting place for graziers and their flocks, as there are temporary shelters for sheep and goats. Weeds associated with domestic stock, such as *Rumex* species (dock plants) and *Girardiana hetrophilla* (nettles) grow in patches around shelters and guard huts, for example at Gati Pat in the Jiwa Nal valley and Nada Thach in the Tirthan valley. There are 500 sheep and goats, 135 cattle and two mules in the Park villages [Q.A2]. The two resident families of Manjhan claimed to have more than one hundred livestock between them [FV2; see Annexure 15]. In addition, several thousand sheep and goats come to the Park on a seasonal basis. More intensive grazing takes place from April/ May to September/October, when thousands of sheep and goats from villages upto 30 km away, in Ani Tahsil to the south, are brought to the Park. Details regarding villages of origin of the migratory graziers coming in from outer Seraj are given in annexure 28. The graziers concentrate on pastures at lower altitudes in the early summer, moving upto the alpine zone in June, where they remain until they begin the homeward journey in September. According to Park checkpost records, nearly 19,000 sheep and goats in roughly equal numbers came to the Park during the summer of 1989. However, Park authorities state that some 13,600 livestock (including nearly 400 cattle) come from villages in the former buffer zone [Q.A2]. Thus, there is some discrepancy in official figures for livestock coming to the Park. There is also one record of a herd of 46 buffalo coming from Bajah Thach and passing through the Park on the way back to Sirigarh village.

According to one grazier interviewed in 1992, and who has been coming to the park for seasonal grazing for about 4 decades, about 30,000 goats and sheep enter the park for summer grazing.

Details of livestock numbers as reported by Park authorities in Q.A2 are given in Annexure 27.

**Socio-economic Linkages and Justification** - The following products are obtained from livestock: milk from both cows and goats, wool from sheep, and goat hair and meat. In Manjhan, one cow yields about 1 litre of milk daily for 6-7 months: at any given time not more than 2 cows will be giving milk [VS]. Sheep's wool is used for making *pattus* and other clothes, while goat hair is used for making *shelas*, a kind of rug. Wool and income from the sale of animals are the major benefits from livestock. Meat is less important to people [Vijay Kumar, pers. comm., 1991]. In Manjhan, meat is only eaten a few times a year, usually in connection with special occasions, such as religious festivals, marriages, births or appeasement of the *devta* [VS]. Goat hair is sheared once a year, in March-April. Sheep are sheared twice a year, in July-August and September-October. Both are sheared by men. Each animal yields about 1 kilo of wool. [Source of information on shearing: Chatru, woman resident of Manjhan, FV2].

None of the primary or secondary products from livestock are usually sold. *Shelas* are occasionally sold for between Rs. 100-200. Whole animals may also be sold. Lambs or kids (6-7 months old) may be sold for Rs. 150-350. Prices quoted for adult animals by migratory graziers varied considerably: some said Rs. 500-600, while others said as much as Rs. 1,200 for an adult goat [see Annexure 29]. One grazier group said that they sold only old animals for Rs. 300-400. In Manjhan, one respondent said that male goats are sold for Rs. 500-600/-, while females may fetch Rs. 1,000-1,200/- [HHS1]. Traditionally important markets include the Labbi *mela* and the Rampur *mela* in November [Vijay Kumar, pers. comm., 1991 see Annexure 8].

One grazier stated that a family may earn about Rs. 2000 a year from pastoralism [MG-2]. Another respondent stated that the entire village earned about Rs. 5,000-6,000 per year, from the sale of animals from a flock of 175 goats [MG-4]. However, another respondent claimed that the net annual income from a flock of 1,000 sheep and goats is about Rs. 2,500. Yet another respondent stated that the annual income from a flock of 1,000 sheep and goats was Rs. 10,000: some 30-35 animals are sold every year [MG-5]. The costs of pastoralism include expenditure on medicine, and salt and food for the dogs brought to guard the livestock from wild predators. Responses for average annual expenditure on these items also varied considerably, e.g. from Rs. 100-675 per quintal of salt [MG-3 & MG-7, respectively]. In Manjhan, one household usually spends Rs. 100/- per year on medicines for livestock [HHS1]. However, when infectious diseases occur, expenses may go up to Rs. 7-800/- [HHS2].

According to the data collected in 1992, the average annual income from a flock of about 500 animals was about Rs. 15,000. In addition, the flock also provided milk, wool, meat etc., for direct consumption by the villagers. The average cost of maintaining a flock of 500 animals was about Rs. 3,800 per year. The purchase of salt for the livestock was the major cost.

Graziers bringing livestock belonging to other families are paid for this service. Of the respondents asked (5/7 MGS), all said that the owners of the livestock pay for or provide the bulk of the provisions of the graziers for the whole trip (i.e. from when they set out from their home villages until they return). The actual details of the payment seem variable: not only did responses differ from one grazier group to another, but in one case they varied within the same grazier group. Thus, one grazier stated that they received Rs. 5/- per head of livestock along with 1 kg of corn flour and 1 kg of wheat per head of livestock, while another grazier from the same group said the following: for the first three months, they are given 8 kg of wheat flour per 10 heads of livestock as well as Rs. 5/- per head of livestock; for the next three months, they are given only Rs.



5/- per head of livestock, and sometimes a variable quantity of ghee [MGS2]. Another group said that they receive a payment of Rs. 10/- per head of livestock (MGS6), while yet another group reported that they are paid Rs. 3/- per head of livestock and 4-5 kg of barley [MGS7].

A similar picture emerged from the data collected in 1992. What is clear, however, is that the income earned from providing the service of manuring the farmer's fields along the migratory grazer's (see page 48 para 3) routes is not substantial, and only covers their day to day expenses for the period of stay at the field.

**Impact on Park** - The impact of grazing on the Park is not fully known, but livestock are known to transmit diseases to wild animals and to encourage weed growth and prevent regeneration of trees in low altitude *thaches*. The goral populations in both the Sainj and Tirthan valleys suffer periodic heavy mortality as a result of a "mange-like" disease, which is almost certainly transmitted by domestic stock [Garson & Gaston, 1985]. The last recorded epidemic, which occurred in Tirthan valley in 1979 substantially reduced the goral population. However, the population had increased significantly by 1983 [Garson, 1983]. The villagers also reported that goral are affected by a disease which causes blindness. It is possible that this disease is also transmitted by livestock [FV1].

Some 30 head of cattle from Shakti and Maraur are reported to have died from disease (unidentified by the team) in 1988 or 1989 FV1. Himalayan tahr populations have also been affected by unknown diseases presumed to have been transmitted by domestic stock [Garson & Gaston, 1985]. However, no major outbreaks of disease among wild animal populations have been recorded in the last 10 years [Q.A1]. Gaston et al. [1981] suggest that musk deer and barking deer, which are relatively rare in the Park, are being adversely affected by livestock grazing. Both species prefer a dense understorey, which tends to be depleted by livestock grazing. Grazing is also associated with weed growth,

particularly Rumex species and Girardiana heterophylla: all areas regularly used by graziers on route to both Manjhan and Nada Thach (Tirthan valley) were full of weeds [FV2]. However, the full impact of grazing on the structure and species composition of plant communities in the Park remains to be determined.

Studies of the impact of grazing on forests elsewhere in Himachal Pradesh have shown that grazing of livestock not only hinders regeneration of naturally dominant tree species, but can also lead to significant changes in the structure and composition of shrub and herb communities on the forest floor [Garson & Gaston, 1985].

Another indirect impact of grazing, according to responses gathered from graziers, is the increasing scarcity of fuelwood in the park. The impact of a large demand of fuelwood in the park is especially severe in the upper reaches, where Rhododendron and Juniper are becoming scarce.

**Management Effort** - There is some monitoring of graziers and livestock at the checkpoints in order to ensure that only rightholders enter the Park. Such check posts are located at Kharongcha and Sharan in Tirthan Range, and Maraur and Sainsar (or Shansher) in the Sainj Range, Pashi and Yabhopari in the Jiwa Nal Range. The name of the leader of each grazer group, his home village or Kothi and the number of sheep and goats in the flock are recorded. However, not all entry points into the Park are via checkpoints and checkpoints are not always manned, and it is quite easy for graziers and Park authorities to never come into contact. For example, one grazer group interviewed had not heard of the Park and had no interactions with Park officials [MGS1].

There are no sheep or goat farms in the area other than a few experimental ones to try out exotic breeds such as Merino [Vijay Kumar, pers. comm., 1991-see Annexure 8]

#### 4.1.4 Fodder Collection

Villagers from the Park and an unknown number from villages very close to the Park, such as Kharongcha, Lapah and Bah cut fodder in the Park. In Manjhan, only women were seen cutting the grass from slopes near the village. Migratory graziers also cut fodder (*Ban, Moru, Kharsu*)<sup>5</sup> on the way to the high altitude thaches (MGS2, 4 and 6). Fodder is cut throughout the year for cattle which, unlike sheep and goat, are not sent up to the high altitude pastures. Fodder is cut in larger quantities in September and October and stored for the winter months. Fodder species collected include grass species such as *Pannakhad*, as well as leaves of *Mau, Chimu, Jammu, Khadak, Kharsu, Ban, Moru, Marir, Kathi, Peeri, Sur, Mandru, Indigofera* sp., *Desmodium* sp., *Celtis* sp., *Corylus*, mulberry and willow [Q.A2, PV, LP]. According to the Manjhan villagers, *Pannakhad* is the only grass species extracted. The grass is cut, then dried in the sun for 1-2 days and used throughout the winter until the first grass appears in spring.

**Legal Status** - Park villages and an unknown number of villages in the adjacent area have the right to collect fodder in the Park [Q.A2] as per Anderson's settlement report. It is not clear whether only right holders collect fodder. According to the park authorities, fodder collection is permitted in all the forest blocks within the Park [QQ]. However, large scale collection is thought to take place only around Park villages and perhaps near villages which are on the Park boundary, such as Lapah, Bah, Kharongcha. Park authorities have marked on the map the following areas inside the park of fodder collection: close to the boundary near Gati Pat, and around Kundar and Manjhan, all in the Jiwa Nal valley; east of Manjhan (different from the one inside the Park) and Lapah in the Sainj valley, immediately inside the Park boundary, to the north and south of the Sainj; and in the Tirthan valley,

<sup>5</sup>

To look at scientific/english names of species mentioned in this and subsequent sections, please refer to annexures 13 and 15.

east of Shungcha and near Kharongcha, both north and south of the Tirthan river [Q.A2].

There are no precise figures for annual fodder extraction from the Park. In Manjhan, one of the two resident families extracts some 10 kg of fodder per day during the summer to feed the cattle, while in Kundar village they extract 35 kg of fodder per day [HH2]; each family extracts 50 kg of grass daily in September and October to store for winter. Some fodder may be collected by migratory graziers, but the amount is not very significant.

#### **4.1.5 Herb Collection<sup>6</sup>**

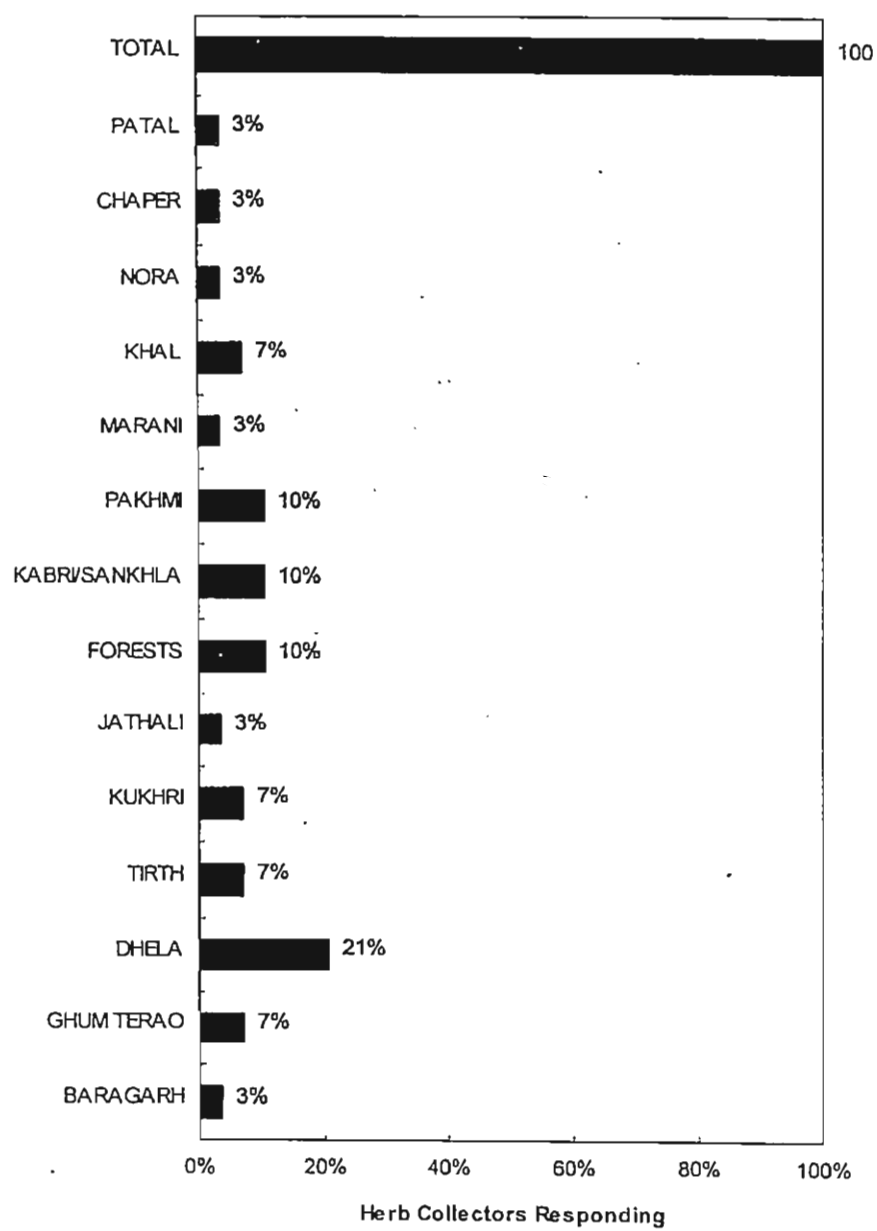
Herb (*jaddibooti*) collection, which here includes the collection of both medicinal herbs and aromatic plants, is considered to be one of the most serious pressures on the Park. Hundreds, perhaps thousands, of people enter the Park from May to November to collect herbs. Many of the herbs are found only in the high altitude meadows, but some are also found in forests.

Nearly 60 herb species are reported to grow in the Park [Annexure 15], but the main species collected are: *Patis*, *Dhoop*, *Hathpanja*, *Kadu*, and *Nihani*. Plant parts extracted include leaves, the root, or the whole plant. Whole plants or roots are dug out with the help of a sickle-shaped implement, a *gaint*. Herbs may be dried in the sun or over a fire in an improvised oven, before being taken out of the Park. Drying can reduce the weight of the plants by 90% [HCS 1]. Salt is added to some species during the drying.

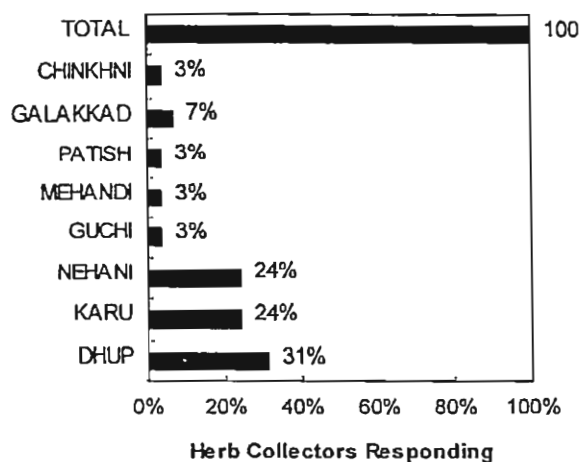
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<sup>6</sup> For details of collation of information available on herb collection, see annexures 26, 30 and 32.

LOCATIONS IN GHNP FROM WHERE HERBS ARE  
COLLECTED



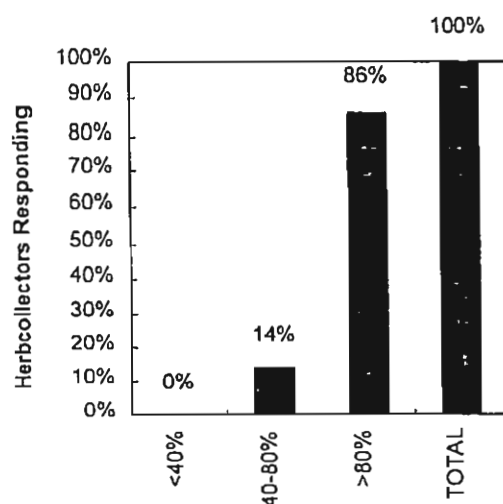
# MAJOR HERBS COLLECTED FROM GHNP



Herb collection is a physically strenuous, and sometimes dangerous, activity as the herbs are often found in not readily accessible places, at high altitudes and in difficult terrain, e.g. very steep slopes, and a number of fatalities occur every year. However, it appears to be an important source of monetary income for many people, and in some cases the only or principal source of cash [HHS1 & 2; HCS1; Vikram Singh, pers. comm., 1991 see Annexure-8] and many herb collectors make more than one trip into the Park during the same season. This was also confirmed by the data collected in 1992.

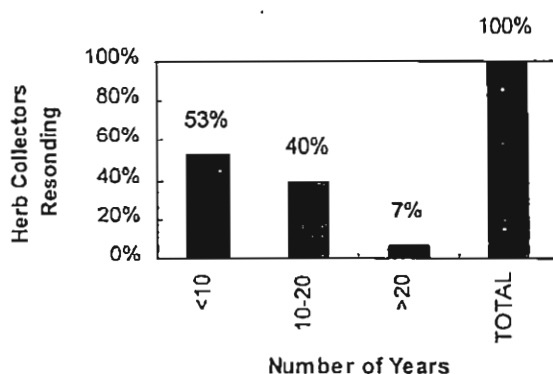
Only recently has herb collection become an economically important activity. Some villagers were of the opinion that the younger generation is not well inclined towards this activity, as it is hazardous. Therefore, more and more herb collection is done only where income from other sources, especially agriculture, is not enough. For other forms of employment the villagers have to travel long distances, sometimes all the way to Shimla or Manali.

#### PROPORTION OF TOTAL INCOME FROM HERB COLLECTION



**History and Trends** - Herb collection has probably been taking place in this area for centuries. Some details of this activity are given in Anderson's settlement report, where it is stated that herb collection is undertaken mainly by low caste and poor Hindus.

#### HISTORY OF HERB COLLECTION



Park authorities, other local people and herb collectors themselves, reported that herb collection has increased significantly over the last ten years, both in terms of quantities extracted and the number of collectors coming to the area.

The number of non-rightholders coming to the Park has increased and rightholders are apparently now extracting herbs outside the areas specified

in the Settlement [FV1 & FV2; see section 4.1.5.]. Apparently, the children of rightholders are not very keen to collect herbs themselves, but may employ others to do so [Vijay Kumar, pers. comm., 1991 see Annexure 8].

Extraction levels of certain species is now thought to be unsustainable. In particular, *Dhoop* is highly over exploited and not regenerating satisfactorily [see 4.1.5.].

A further development is that as of two years ago, Mehendi, a lichen species which grows on tree trunks, has started to be extracted in large quantities [HCS1].

**Legal Status** - Herb collection is a right that has historically been given to only four villages, as recorded in Anderson's Settlement. The right has been recorded for Dhara, Lapah, Shungcha and Sharnira. The right specifies the area in which the rightholders may collect herbs. Thus, rightholders may legally collect herbs in their allotted areas in the Park. The right may also specify the herb species which may be collected. However, both herb collectors and Park authorities do not appear to be aware of any restrictions on the species collected as specified in the right. The only known restrictions are on the extraction of *Shingli Mingli* (*Dioscorea deltoidea*), which had become seriously depleted, and for the leaves of *Taxus Baccata* (Rakhoal). However, Park checkpost records show that some *Shingli Mingli* was allowed to be collected from the Park (Park Records, Sainj Range, 1989-90). In addition, some of the herb collectors also admitted to collecting these plants.

An unknown amount of illegal collection is also taking place. This involves both collection by non-rightholders, as well as collection by rightholders in areas outside those specified by the right. Illegal collectors are reported to be entering the Jiwa Nal Valley via the Dalibati-Pulga-Phangchi Galu route [Virender Sharma & Vijay Kumar, pers. comm., 1991 see Annexure 8]

**Location and Extent** - The herbs are mainly found in grasslands at medium to high altitude including the alpine meadows above the tree-line. Some herbs may also grow in medium and high altitude forests. *Mehendi* is quite



widespread and grows on tree trunks and rocks and may be found upto about 3,500m .

Herb collection takes place in all the three valleys of the Park, but the specific collection sites are not fixed. The headwaters of the Jiwa Nala, Tirthan and Sainj rivers are regular collection sites. There is evidence of herb collection at Kobri Thach and near Nada Thach in the Tirthan Valley. Details of areas visited by herb collectors as given in Park records and by herb collectors is given in Annexure 34.

Hundreds, possibly thousands, of people enter the Park for herb collection. According to Park authorities, about 1,200 collectors come to the Park [QQ, BUT LUMPED WITH NO. OF GRAZERS, SO FIGURE CALCULATED BY SUBTRACTING NO. OF GRAZER RECORDS FROM 1989 CHECKPOST RECORDS:]. But according to one herb collector, thousands of collectors come to the Park.

There is also no precise information on the quantities extracted of different species. There is some information from the interviews and from Park records for 1989-90. However, Park records are not comprehensive: while there are 300 records for Sainj Range, there are only 58 records for Tirthan Range, and even the Sainj records are not thought to be comprehensive. Thus, Park records probably do not reflect the real extent of herb collection. Nevertheless, they give us some idea of a minimum level of extraction. Analysis of these records shows that more than 7,000 kg of herbs, mainly *Dhoop*, were extracted from Sainj Range from July to October 1989, while under 2,000 kg of herbs, mainly *Dhoop* and *Nehani*, were extracted from Tirthan Range between July to November 1989. This was also confirmed in 1992.

Figures of herb extraction obtained from interviews show great variation. For example, one individual in Manjhan reported to have collected more 1,200 kg of herbs this year [HHS1]. However, another regular herb collector had collected only some 200 kg of herbs [HCS1]. Another herb collector

reported to A.J. Gaston that he and 14 others had spent 2 months in the upper Jiwa valley and collected 420 kg of *Dhoop* each; between them they had netted Rs. 35,000 at Rs. 25/kg of *Dhoop*, or Rs. 2,500 per collector A.J. Gaston, pers. comm., 1991 see Annexure 8]. This was also confirmed in 1992. Herb collectors come to the Park from villages situated north-west, west and south-west of the Park. Illegal collection is reported by villagers living to the north of the park. Anderson suggests that herb collection may have been an occupation of the "....poorer classes....(who) by the sale..... eke out a scanty livelihood" [Anderson 1886]. The information collated from household and village survey done in the area indicates that almost every family in these villages has atleast one person engaged in herb collection and in many cases all able-bodied men in a family are involved in the collection of herbs [fv'94]. Till recently it was believed that herb collection was an exclusively male activity. However in July' 92 some women were also seen engaged in collecting *gucchis* (*Morchella esculenta*) in Sainj and Nehani, and *dhup* in the Tirthan valley. The extent of involvement of women in herb collection is, however, not yet known. Nepalis who have been reportedly settling down in villages adjacent to the park for the last 10 years are also believed to have taken up herb collection among their other activities [QA, HCS Sainj 01]. Herbs may be collected from May to November, but the peak collection season is from June/July to August/September. Nearly 250 of the Sainj and most of the Tirthan checkpoint records are from July and August.

**Socio-economic linkages and justification** - The sale of herbs appears to be a principal source of monetary income for many collectors. In Manjhan, the resident villagers said that *gucchi* and herb collection was their only source of monetary income. The same is apparently true for villages in the Sainj Valley according to a resident of Shangarh 4 km east of Sainj [Vikram Singh, pers. comm., 1991 see Annexure 8]. An individual herb collector may be able to earn upto about Rs. 20,000 a year, and the total household income may be much higher. In Manjhan, for example, one household with three

brothers collecting herbs could earn upto Rs. 60,000 a year [HHS1]. As the low-input agriculture practiced by many local people does not yield sufficient food for the whole year, food and many other commodities have to be purchased. Thus, herb collection is a critical economic activity for an unknown number of people.

The collectors generally sell their herbs to local shopkeepers at the nearest roadhead, e.g. Sainj, Bathad, Gushaini, or sometimes to registered herb exporters who come upto the roadhead. However, according to Park authorities, all buyers of herbs are supposed to have obtained herb export permits from either the wildlife authorities or the Territorial D.F.O and, furthermore, are supposed to buy herbs only from rightholders [Vijay Kumar, pers. comm., 1991 see Annexure 8]. Thus, it is not clear whether the local shopkeepers also have herb export permits.

Local shopkeepers then sell the herbs to local herb exporters from Kullu, Bhuntar, Shamshi and other small towns, and the exporters in turn sell the herbs at markets in Amritsar and Delhi. We have no information on the change in price as you move up the market chain. One herb collector told us that for many herbs there is not much difference in the price obtained from the local shopkeeper and that obtained in Amritsar [HCS1]. For certain herbs, however, the price may increase by Rs. 200-300, e.g. *Hathpanja* sells for Rs. 350-400/kg in Sainj and at Rs. 600-650/kg in Amritsar.

The herbs collected from the park and nearby forests are of also of great to the villagers for their daily use. Local people rely on various herb-based medicines. For example, the root of Karoo is used for controlling fever. The root of Patish is known to cure stomach aches. Nihanoo is a herb which is multi purpose, a part of its root being used as a tobacco substitute, and another part for curing diarrhea. Dhoop is, of course, the universal essence used in every home. The costliest is Patish, which sells for around Rs. 600 per kg. Dhoop is the cheapest, at Rs. 50 per kg., as it is abundant and easy to extract.

**Impact on the Park** - Of all the human activities taking place in the Park, herb collection is believed to be having the most serious impact [Vijay Kumar, Sanjeeva Pandey, Virinder Sharma, A.J. Gaston & P.J. Garson, pers. comm., 1991 see Annexure 8]. Herb collectors we met in both 1989 and in 1991 [FV1 & 2] also reported that there is over exploitation of certain species. *Dhoop* was the most commonly cited example: many people informed us that this species is not regenerating properly and collectors are taking increasingly younger plants with small roots, thus further affecting regeneration. At current extraction levels of *Dhoop*, it is thought that the plant will become locally extinct in ten years [P.A. & A.J. Gaston]. There is little direct information on other impacts of herb collection. However, large numbers of people enter the Park for this purpose for several months. The collectors disturb to the wild animals. They also consume resources from the Park, such as fuelwood and NWFP, and leave behind refuse. Furthermore, herb collectors are going into new or previously not often visited areas, as herbs are becoming scarce, due to a lack of regeneration and greater intensity of collection.

Even herb collectors have generally commented that there has been a progressive decline in the quality and quantity of herbs. For example, some six to eight years ago the roots of four to five year old dhoop (*Jurinea marcocephalla*) used to be as thick as a persons forearm. Today, such plants are not found. One year old plants, with a root no thicker than a finger, are being collected. [QA, HCS # Sainj 01].

**Management Effort** Management of herb collection involves maintaining records at checkpoints, patrolling and spot-checks of herb collectors, and issuing export permits to buyers of herbs. The following information is recorded at checkpoints: name of collector(s), village of residence, date of entry and exit, herb species collected and the quantity of each species. However, many entries to the Park are not via checkpoints and checkpoints are not always manned. Furthermore, many more species are collected than appear in the checkpoint records. Although this may be because other

species are not collected in large quantities, *Mehendi*, which is extracted in large amounts, also does not figure in park records.

Till a few years ago, any one could obtain a permit from the Park authorities to buy herbs for export out of Kullu District. In an attempt to regulate the trade, a series of regulations have now been imposed by the Agricultural Marketing Committee for Kullu and Lahaul Spiti.

#### **4.1.6 Non-Wood Forest Produce (NWFP) Collection (excluding herbs)**

*Gucchi* or morel mushroom (*Morchella esculenta*) is one of the main NWFP collected by park-villagers, people from adjacent areas and others visiting the park for various other purposes. Other NWFP collected includes honey, bamboo, nuts (*Pahari badam*, walnuts), fruits (*Jammu*, *Thena*, *Sharorh*, peaches), flowers, juniper (*Juniperus macropoda*), the bark of birch, the pith of yew trees and *talshi* (*Rhododendron lepidotum*) [QQ, FV2]. Bamboo is used for making baskets (*kiltas*). Whole juniper plants are extracted, and used both for firewood and for religious purposes [QQ]. Birch bark may be used for writing on or for religious and medicinal purposes [QQ]. The pith of yew trees and *talshi* leaves are both used for flavoring tea [FV2]. In Manjhan, one household reported extracting *Banafsha* flower for sale.

**Legal Status** - *Gucchi* collection is not specified in the Forest Settlement. The legalities of collecting other NWFP is not clear. Park authorities state that there is no illegal collection of NWFP, but do not admit it is a right [Q.A2]. Responses to Q.A1 indicate that it is a right.

**Location and Extent** - *Gucchi* collection takes place in forests throughout the Park, wherever they happen to grow, often under *deodhar* trees [Tek Chand Verma, pers. comm., 1991 - Annexure 8]. Each family collects about 2-3 kg of *gucchi*. Other NWFP is collected in all forest blocks [QQ]. There is little information on the quantities collected of each type of NWFP, other than for the two resident families of Manjhan, but there is great discrepancy in the figures given by each family: one household collects between 50-100 kg of

fruit and nuts between August and October, while the other only extracts some 8 kg of fruit and nuts per year [HHS 1 & 2]. One household also reported extracting 4-5 kg of *Banafsha* flower in April and May [HHS 1] [see Annexure 26].

The main *gucchi* season may last from February to May. However, in places such as Manjhan, that are snow-bound in February and March, the season is only from April to May. In some places, there is a second season from August to September when a lower quality, white *gucchi* can be collected. The higher quality *gucchi*, collected earlier in the year, is brown in color.

*Banafsha* flower is collected in April-May, nuts are collected in autumn, and fruits in the appropriate season. Bamboo, juniper, birch bark, the pith of yew and *talshi* leaves can presumably be collected all year round.

**Socio-economic Linkages and Justification** - *Gucchis* now sell at Rs. 2500 to Rs. 3000 per kg. There has been a hike of Rs.1000 per kg, in three years, in the selling price of *gucchis*. In '91 the price of *gucchis* was Rs.1500-2000 per kg. Each family collects some 2-3 kg per season [HHS1 & 2, HCS1, AVS-Railah, fv'94]. All other NWFP is collected for domestic use [QQ], other than *Banafsha* flower, which sells for Rs. 200-250 per kg [HCS1].

#### **4.1.7 Fuelwood Collection**

Park villagers, other local people, herb collectors, graziers and others staying in the Park temporarily, lop trees and collect deadwood for fuel. Pine cones and dry pine needles are also used for fuel. Park villagers store fuelwood for the winter months and the species used for fuel and *Kathi*, *Kail*, yew, juniper, all oak species, *Desmodium* sp., *Indigofera* sp., walnut, poplar and the fallen dead wood of all the conifers [Q.A2, PV, AV]. Preferred fuelwood species include *Kail* and yew. *Kail* is also excellent torchwood.

**Legal Status** - Park villages and an unspecified number of villages in the surrounding area have the right to collect fuelwood in the Park, as per Anderson's Settlement [Q.A2].

**Location and Extent** - Fuelwood is collected from areas adjacent from park villages and areas where herb collection and grazing take place, or where people stay overnight in the Park. Details of how much fuelwood is extracted by different groups of people are not available. Information gathered in 1992 suggests that depending on the weather conditions, the consumption of fuelwood by groups of graziers or herb collectors varies between 40 kg to 80 kg per day in thaches like Nara, Bakhari, Kundri, Marani, Dhela etc. In the alpine meadows, upto 30-40 kgs of Juniper or Rhododendron can be used up in one day by each group. Park villagers probably extract the largest quantities of fuelwood. In Manjhan, most fuelwood is collected on a daily basis, but some is also stored for winter : one headload (about 40 kg) is used per day in summer, while 2-3 headloads are used in winter [HHS1° & 2].

Park villagers collect fuelwood all year round except in winter (January-February). Herb collectors and graziers also use fuelwood from the Park from May-October.

#### **4.1.8 Timber Extraction**

Trees may be felled by Park villagers for house construction and repair of buildings, or for making agricultural implements and other tools. Species used for these purposes include: *deodhar*, *kail*, fir and spruce for house construction; oak species and Cotoneaster species for agricultural implements. Trees around *thaches* are sometimes also killed by girdling. The bark is apparently used for making floor mats and temporary roofs for the *tapras* (stone structures), or for the makeshift wood shelters used by graziers and herb collectors. Girdled trees die in a year and the wood is then used for making temporary dwellings or for fuelwood. It is also believed that this may be a method of maintaining or even slowly enlarging the size of the *thach* [PA,

A.J. Gaston, pers. comm., 1991 - Annexure 8]. Park authorities also fell trees in order to construct patrolling and inspection huts, as do other local people, migratory graziers and herb collectors.

**Legal Status** - Park villagers and other local people have the right to extract a limited amount of timber for domestic use, as per Anderson's Settlement. According to Park authorities, there is no illegal timber extraction [QQ], but villagers of Maraur reported that they sometimes have to fell additional trees illegally to meet their timber requirements [FV1].

**Location and Extent** - Around Park villages and *thaches* near forests, e.g. a patrolling hut was recently built at Nada Thach in Tirthan Range. The amount of timber extracted annually, either by felling or girdling, is not known, but is not thought to be significant.

There is no pattern of timber extraction: timber is extracted as and when required. According to one family in Manjhan, timber is rarely required for house construction: a house once built may last upto 100 years. But some 10-12 full grown Deodar trees are required to build a typical 2-3 storey house [HHS1].

Park authorities are supposed to mark the trees selected for felling. Villagers cutting trees illegally are fined by the Park authorities [PV/FV1].

#### **4.1.9 Religious Yatra, Monuments and Fairs, and Burial Ground**

The source of the Sainj river, Rakti Sar, and the source of the Tirthan river, Tirth and Saketi are pilgrimage sites. There are also religious fairs in the Park villages.

The frequency of pilgrimage to these sites or the number of pilgrims who come is not known. Villagers from adjacent areas attend the *melas* held in the Park villages.

Religious fairs are held separately in Shakti and Maraur in March-April and in June-July. In Manjhan, religious fairs are held in February-March, April-May, August-September, and any other time the *devta* wishes [VS].



**Legal Status** - Only Park villagers have the right to burial grounds [Q.A]. According to Park authorities Park villagers and other local people have been given a concession to undertake religious yatra, have religious monuments and hold religious fairs (*melas*) in the Park [Q.A2] as per the Park's Management Plan.

#### **4.1.10 Poaching of Wild Animals**

Many local people are believed to have access to guns in the area, but most poaching is thought to be done through trapping and snaring [Matthai *et al.*, 1981]. Traps range from simple wire and nylon nooses attached to trees, to brushwood barricades which funnel animals towards nooses or drop-traps. Park authorities report that there is some organized poaching taking place in the Jiwa Nal valley with poachers coming from Phangchi Galu [FV2]. One local person also stated that he poached in the Park area and another reported that there has been poaching in Rolla Forest by someone from Delhi [FV2].

**History and Trends** - Traditionally, local people hunted wild animals such as goral, Himalayan tahr and serow for meat and for their skins and horns (FV). Some people also had rights to a specified amount of hunting, for example for snaring a certain number of musk deer in a given season [Anderson, 1887]. Hunting of certain species (Schedule I species) became illegal after the Wildlife (Protection) Act, 1972 was enacted. A complete ban on hunting was imposed in Himachal Pradesh between 1982-1984. Hunting was prohibited in the Park after the first notification in 1984. Thus, traditional hunting of certain species became illegal and so became termed poaching.

Poaching of musk deer became a serious problem in the region in the late 1970s because of the high price of musk on the international market (Rs. 8,000/musk pod). However, Garson (1983) felt that musk deer poaching had declined between 1980-83 as the world market for musk seemed depressed

and this view has been recently confirmed by Dr. Gaston. [Pers.comm - Annexure 8].

**Location and Extent** - Organized poaching is reported to be taking place in the Jiwa Nal valley. [PA/FV2]. Opportunistic poaching could take place anywhere in the Park. According to Park authorities, some amount of poaching takes place around Park villages in winter. Only one case of poaching had been filed upto August 1989 [see Section 6.1.4.].

Animals are apparently particularly vulnerable to poaching in winter as heavy snowfall induces them to move to lower altitudes closer to human habitation [mp]. More recently, according to the Park Director, it has been stated that there is widespread poaching by Park villagers during the winter when the villages become less easily accessible to Park authorities. [S. Pandey, pers. comm., 1991 - Annexure 8].

**Management Effort** - A case was registered in September 1988 against some inhabitants of Maraur for killing a musk deer. The case had been held up by bureaucratic procedures. Park authorities were asked for additional information on several occasions, as well as asked to re-write statements. Some of the requests entailed visits to Maraur, a two-day journey on foot from Sainj. The park authorities also carry out combing operations to collect traps and snares which are set up by the poachers to trap/kill wild animals.

## **4.2 PRESSURES ON THE PARK DUE TO ACTIVITIES IN THE ADJACENT AREAS OF THE PARK**

### ***4.2.1 Human Habitation in the Adjacent Areas***

An unspecified number of people from the hamlets and villages in the adjacent area of the Park [see Section 2.2.1] exercise certain rights in the Park area. These rights include the right to livestock grazing, collection of fodder, fuelwood, NWFP, extraction of timber, herb collection, religious yatras etc.

The area adjacent to the western boundary of the park has human habitation, and is a part of the tahsils of Kullu and Banjar. This area has a total population of 16,618 persons spread over in 18 revenue villages. Of the total population, 52.5% are males and 47.5% are females. The area has 26% Schedule Castes. The Proportion of tribals sharply varies between tahsils, for example in Banjar tahsil the tribal population is only 0.46% while in Kullu tahsil it is 5.15%. The literacy rate is 34.7%. with male literacy rates being higher than the female rates. The rural literacy rates are 32% while urban are 70% [District Census Handbook, 1981].

**History and Trends** - Kullu was made into a separate district in 1963, within the composite state of Punjab. Prior to that, it was a tahsil of Kangra district. The district comprises of 4 tahsils, namely Kullu, Banjar, Ani and Nermand. It has not witnessed any jurisdictional change ever since it was formed as a district.

The area is mostly reserve and protected forest land. The hamlets and settlements are located on revenue land.

A list of the hamlets and villages in the adjacent area and their locations is given in Annexure 35.

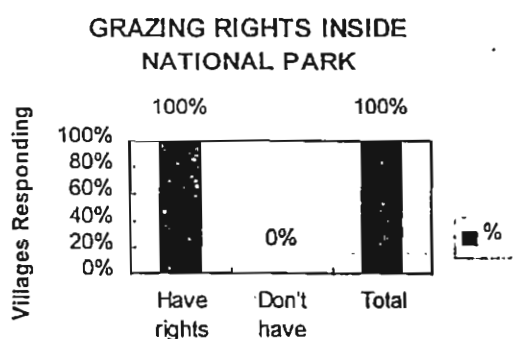
**Impact on Park** - The full impact of adjacent area villages on the Park remains to be determined. According to Alex Anderson (1880), most of the villages in the periphery of the park have grazing rights and rights of way. Few hamlets like Lapah, Dhara etc. have rights to cut grass. Hamlets like Nahin, Ghat, Bharun, Lapah, Dhara etc. also have rights to cut wood for agricultural implements.

**Management Effort** - The ecodevelopment approach has been recognized as aiming at developing alternate sources of biomass and income, to divert pressures from the protected area. The major pressures on GHNP come from the 200 odd hamlets where many of the people claim traditional grazing rights and also collect herbs and mushrooms from the park. The ecodevelopment

project, currently being implemented, aims at mitigating the pressure on the park from the adjacent areas i.e. the 10. km belt.

### 4.2.2 Grazing of Livestock

Next to agriculture, livestock rearing is the most important source of income in the area. Every household invariably keeps a few cows, sheep and goats. The local cows are not high yielding and are generally kept not for their milk but for manure other animals are kept for their meat & wool. Local people, as well as people coming from as far as Ani tahsil, graze their livestock in the park. They come from June to September, to graze their livestock in the high altitude pastures or "*thaches*". Only sheep and goats are taken upto the *thaches*. Those households which have a fewer number of sheep and goats graze their livestock on the nearby hills. 100 percent of the people in the villages visited said that they did have rights to go into the park for grazing.

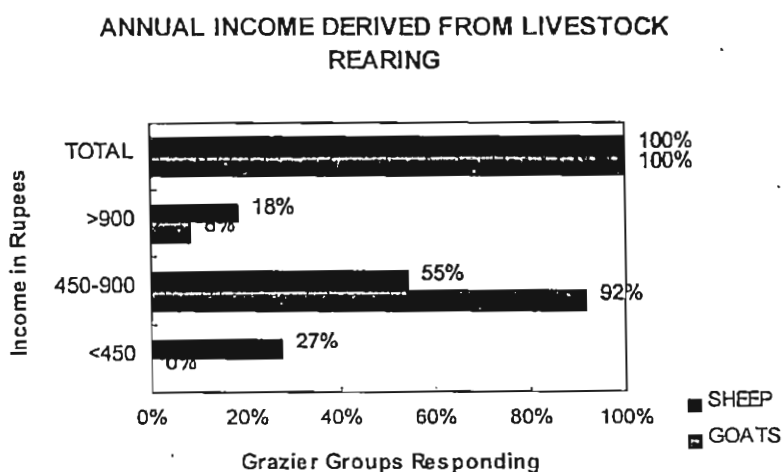


**History and Trends** - Considering that Anderson recorded grazing in the area in the 1880s, it has been going on for over a hundred years. For many people livestock rearing is more a way of life, than an occupation.

**Legal Status** - Grazing rights have been recorded both for individuals and whole villages, as per Anderson's Settlement. The villages have their rights recorded with the forest and wildlife departments or with the Patwari of the village. These rights are valid till the next settlement, and are generally passed down from generation to generation. Rights can neither be bought nor sold.

**Location and Extent** - Livestock is grazed in the park for a period of six months, from May/June till October/November. There has been no change in the route that the graziers have been traditionally taking to go up and down from the park.

**Socio-Economic Linkages and Justification** - One village did report a decrease in the number of livestock, but on an average there is no significant fluctuation in the total number of livestock owned by individuals. From the local cows they get about 2-3 kgs of milk per day and from the jersey cow they get 6 kgs/per day. The milk is used to make usually just enough ghee to meet their own requirements. Sheep's wool is used by the villagers for making "*Pattus*", while Goat hair is used for making "*Shelas*". The dung of these animals is, of course, good manure for the fields. The livestock are also sometimes sold for cash. The price of goats is approximately the same as that of sheep. The young lambs & kids sell for Rs. 150-200 each, and the adults are sold for Rs. 1500-2000 each. Meat is not an important part of the local diet and is eaten only on rare occasions [Also see 4.1.3.].



The migratory graziers have various stopovers enroute the park and as they pass a village they collect sheep and goats to take to the alpine pastures. The mode of payment varies, either cash or kind. The migratory graziers either get Rs. 40 per day in cash or wheat, corn and ghee for grazing

livestock of a village. The villagers collectively provide food for the herder, for the time the livestock is kept overnight in their fields.

**Impact on Park** - Studies on the impact of grazing in forests have shown that grazing of livestock not only hinders regeneration of naturally dominant tree species, but can also lead to significant changes in the structure and composition of shrub and herb communities on the forest floor [Garson and Gaston, 1985]. Apart from the disturbance to the habitat and animals, graziers use large quantities of fuelwood to keep themselves warm at night and to ward off wild animals.

**Management Efforts** - In the villages surveyed, none of the villagers had ever been stopped from using their traditional routes to take livestock into the park. There was also no check on the number of livestock that were taken in, or for the period that they were inside the park. There is some monitoring of graziers and livestock at the checkpoints in Kharongcha and Sharan in Tirthan Range, Maraur and Shansher in the Sainj Range, and Pashi and Yabhodri in the Jiwa Nal Range. The park authorities have also been taking up vaccination of domestic livestock in the periphery of the park to minimise the threat of diseases being passed on to wild animals.

**Other Information** - Poultry rearing is an important source of supplementary household incomes. Various poultry related schemes have been implemented in the area, including schemes for supplying exotic breeds of birds, for imparting training to the breeders and for supply of feed and other materials for setting up poultry farms.

A sheep breeding farm was started, in 1963 as a part of the Indo-German Project, at Nagwain. At present Rambulitlee and Russian Marino are being bred at this farm. In addition, a private Angora rearing farm was established in 1964 at Mohal (Kullu).

### **4.2.3 Fodder Collection**

Large scale collection of fodder mainly takes place in the hills adjacent to the villages. The winter stock of fodder is also collected from the nearby forests and then stored. The fodder consumption of goats and sheep is between 2-4 kgs per day, and of cows between 6-15 kgs. per day.

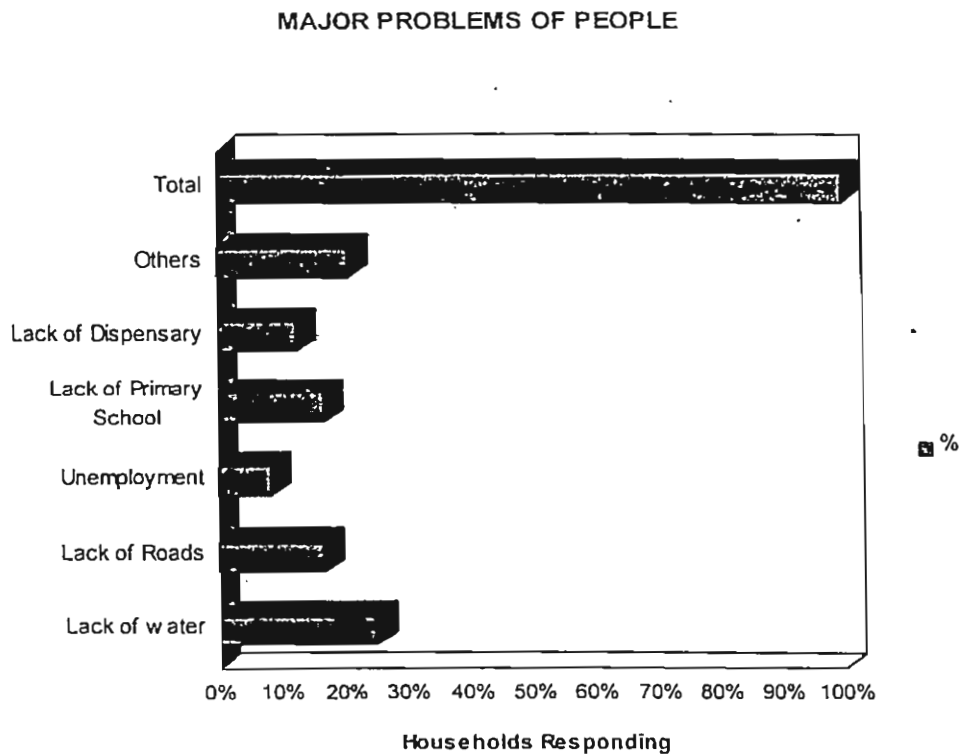
### **4.2.4 Proposed Parvati Hydel Project**

Although the Parvati hydro-electric scheme is not a current pressure on the Park, it is potentially a source of great disturbance to the Park. HPSEB had conducted preliminary investigations in the area well before the first notification of the Park. They propose to build link tunnels between the Jiwa Nal and Sainj, passing through the Park. HPSEB is reported to be seeking official permission to implement their proposals [S. Pandey, pers. comm., 1991].

### **4.2.5 Problems faced by the inhabitants around GHNP**

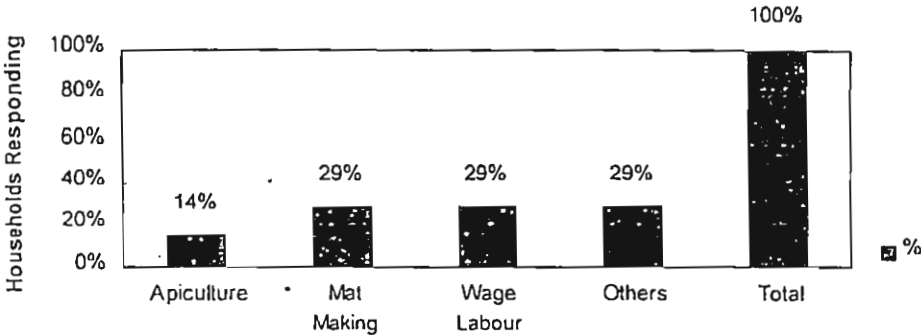
During our field visit of June-July '94, the village schedules and household surveys provided an insight into the problems that the inhabitants of these village were facing in their day to day lives. When asked on what were the problems faced by the villagers in order of priority, 30% identified the lack of an adequate transportation network. All the senior and other male members present to whom this question was addressed were of the firm belief that a road would solve all their miseries [See graph]. On the other hand, the household questionnaire revealed that the priority items for the women was having water: firstly tap water in every home and if not in each home then atleast one or two taps in the village and, secondly, piped water for irrigation. Roads, however, were quite low in their priority [See graph]. The other issues which gave the villagers reason to be unhappy about the current state of affairs were unemployment for the educated youths of the villages, small land holdings, lack of primary schools, no dispensary in the village and not even a visiting doctor, and, of course, illiteracy. [fv '94].

**Alternatives** - The alternatives suggested by the villagers did show that the people had an eagerness to work for their livelihoods and if offered alternative sources of income would definitely like to have a better bargain in life. Poultry seemed to be the most favored activity which the villagers felt confident that they could manage, [See graph]. Other activities suggested included apiculture, weaving ,carpentry, tourism , and mat making. The household survey revealed that 10% of the men preferred being wage labourers as it assured them a steady income and they were familiar with this trade. The women, unfortunately, did not to offer any substantial alternatives, the household schedules reveal that 70% gave no response to this question [See graph].





SUGGESTED ALTERNATIVES



## 5. PRESENT AND FUTURE IMPACT ON PEOPLE OF RESTRICTIONS RELATED TO THE PARK

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All human activities in the Park, other than those related to Park management, are to be stopped, as is stipulated by the Wildlife( Protection) Act (1972). Where people have traditional land use rights, these are to be acquired and extinguished by the Government according to the procedures laid out in the Act. In Great Himalayan National Park, the following activities are to be stopped: habitation and associated activities (cultivation, fuel and fodder collection, etc.), livestock grazing, herb collection, collection of other NWFP, fuel and fodder collection and right of way. It is not clear whether religious activities will be stopped. These proposed restrictions are discussed in greater detail below.

However, as a part of the area, the Sainj Valley, is proposed to be made only into a sanctuary, grazing and some of the other rights not considered inimical to the conservation of the sanctuary can be permitted there.

### 5.1 HABITATION AND RELATED RESTRICTIONS

All habitation in the Park, other than that related to Park management, is to be stopped. A restriction on habitation has impacts on all activities that are linked to habitation, i.e. those that are carried out in areas adjacent to habitation. Such activities include:

- agriculture
- daily grazing of livestock
- fuel and fodder collection
- timber extraction for domestic use
- collection of NWFP, including herbs and *gucchi*

The official area of the four villages inside the PA is 70 ha: Shakti and Maraur in the Sainj valley covering 54.68 ha and Kundar and Manjhan in the Jiwa valley covering 11.33 ha [QQ].

One option is that the habitation rights of people from Shakti, Maraur, Kundar and Manjhan are acquired and extinguished by the Government. The permanent residents of these villages are, then resettled outside the Park. However, perhaps a better option is to allow the inhabitants to stay where they are and to involve them in the protection of the park and sanctuary.

**History of Relocation Efforts** - Progress to date on relocating and rehabilitating Park villages has been slow. The ADM Kullu, Shri Katoch, was appointed Settlement Officer (S.O.) on 5.12.85 . Fifteen lakh rupees were deposited with the S.O. for relocation of Park villages [Q.A1]. According to Shri Katoch, the main reason for the delay is because the Park villages are to be relocated on forest land. Clearance is required from the Central Government before forest land can be diverted for non-forestry purposes. Obtaining clearance is a lengthy process. Apparently, local authorities and the Ministry of Environment had already exchanged files on this matter twice by August 1989.

Shri T.D. Negi, the ADM Kullu (since September 1991) and hence the S.O. was also ADM in 1986 for a while. He visited Shakti and Maraur in November 1986 and assessed the socio-economic status of the people and the fertility of their land. Land was then measured in Neuli, in the Sainj valley (about 4 km west of the Park), but the villagers did not like it [T.D.Negi, pers. comm., 1991 see Annexure 8] .

According to the Park Director (August 1989) relocation was scheduled to be completed in the next five years and would cost about Rs. 50 lakhs. However, there is still no official relocation plan. The S.O. requested a socio-economic survey of the Park villages which was undertaken by the *Patwari* at Banjar. The S.O. has apparently assessed how many families will have to be compensated and how much land is required for resettlement on the basis of survey findings. Although the results of the socio-economic survey were not available from Park authorities, the S.O.'s "assessment" of

the number of families to be compensated and the amount and nature of the compensation to be given was obtained.

The "assessment" of the S.O. is merely a list of names of resident and "absentee" landowners in each Phati within the Park and the amount of land owned by each [Annexure 36]. Thus, the amount of land required for resettlement/compensation of Park villagers is simply calculated as being an area equivalent to that which is being lost. Details of the quality of land owned or its use by different owners do not appear to have been taken into consideration. No details are included of the type of land to be given in exchange, e.g. whether it will be of equivalent fertility, or similar monetary value, etc. There are also no details of how villagers will be compensated for loss of other land use rights.

Ten bighas of land were selected in Railah Phati, according to the villagers of Shakti. Land was also selected near Bah [FV1; see 5.1.7]. More recently, land was selected in Shangarh by the villagers of Shakti and Maraur.

Apparently, the Shakti/Maraur villagers had agreed to being resettled in December 1990 [T.D.Negi, pers. comm., 1991 see Annexure 8], although they were opposed to the idea in August 1989 [FV1]. However, they are again no longer willing to shift [FV2; see below]. Very little information was available on the proposed relocation of Kundar and Manjhan. Apparently, the villagers of Kundar and Manjhan have asked for compensation rather than land [Dev Raj Chouduri, pers. comm., 1991 see Annexure 8]. However, the Manjhan villagers interviewed as a part of the survey said otherwise. Revenue authorities appear to have concentrated on Shakti and Maraur.

**Alternatives Provided/Proposed** - There is little information on the alternatives proposed other than that land is to be provided for resettling Park villagers. According to a letter from the Tahsildar Banjar to the ADM-Kullu in April 1989, land for relocation of the four villages was available in Var Shangarh, Shangarh and Manjhan Tahsil and in Sainj, and the following

facilities will be available: water, electricity, and primary health service; the primary school in Shakti could be shifted to Var Shangarh.

There is still no resettlement and rehabilitation plan. The Management Plan contains some information on relocation plans for Park villages. It states that the villages will be relocated, that compensation will be paid and that former Park villagers will be given preferential employment by Park authorities. No details are included of the time frame for relocation, the relocation site, the numbers of people and livestock to be shifted, the amount and type of compensation to be paid or what alternative livelihoods will be available for these people, including the nature and amount of preferential employment to be given. According to Dev Raj Chouduri, 16 people from Shakti/Maraur are to be given employment in the Park.

At one point the villagers of Shakti/Maraur were to be separated and resettled in more than one location. Resettlement sites for Shakti and Maraur have been identified at Shangarh [T.D. Negi, pers. comm., 1991] and Barolangarh, and near Bah [PV-Shakti/FV1]. There is no clear information on when each site was selected, the process of selection, the individuals involved, the quality and size of the resettlement sites, or what the present status is.

A resettlement site for Kunder and Manjhan has been identified in Railah .[FV1]

**Perceptions of Park Authorities** - There is no clear understanding of the Park authorities' perceptions, partly because there has been a high turnover of Park directors. Park authorities appear to accept that Park villagers must be shifted out of the Park, although they do not feel they have much impact on the Park, as both human and livestock populations are low. However, with the changes in the legal status of the area and the initiation of the ecodevelopment plan, the official perceptions will have to be discussed again. On a recent field visit to GHNP, the Director, GHNP, reported that the Chief Wildlife Warden has now asked the Collector, Kullu District, to

exclude the villagers of Shakti and Maraur from the process of relocation.

**Perceptions of Park Villagers** - There had been relatively little conflict between Park authorities and villagers upto August 1989. Thus, relations between the two groups were not unduly strained. Villagers did not appear to be resentful about the lack of compensation for crop damage by wild animals or the difficulty of getting compensation for injury or death to livestock by wild animals. It was, however, not possible to question villagers directly about their relationship with the Park authorities, as officials were present during most discussions with villagers. In general, the villagers of Shakti and Maraur seemed relaxed in the presence of the Forest Department officials, although responses to certain questions appeared a little constrained, as for example when asked whether they trusted the government's promises of compensation for relocation.

The villagers of Manjhan also did not appear to be hostile towards Park authorities or the Park. However, the villagers of Shakti, Maraur and Manjhan are all opposed to moving out of the Park. The villagers of Shakti/Maraur have also presented petitions to this effect. One of these was in 1989, to the Tahsildar, Banjar [Official Document #1 see Annexure 41]. In this petition, the villagers explained that they were reluctant to leave their homes for religious reasons: the *devtas* cannot be relocated and many *devtas* come from outside the Sainj valley (*thara devts*) to meet their *devtas* and only the Shakti/Maraur villagers know the appropriate rituals to be performed on such occasions [Official Document #1 see Annexure 41]. Perceptions obtained on relocation from the different villages are given below.

#### **Shakti :**

The villagers of Shakti had first heard of the relocation proposals around 1986 from the Tahsildar. They were told that resettlement land had been identified near Bah, but they had not been shown the land. Range Officer M.P. Sharma

and other Park officials have given them reasons for their displacement. They understand the primary reason to be the protection of wild animals. This is not felt to be a justifiable reason as the villagers do not feel that they have an adverse impact on the Park's wildlife. In fact, they feel that they could help Park authorities achieve their objective by helping them with active protection. When asked whether the number of animals in the Park had increased or decreased since notification, conflicting responses were given.

The villagers are strongly opposed for a number of reasons to being relocated. They feel their roots are here where their ancestors have lived for generations. They are unwilling to leave their *Devta* who is or lives in an enormous rock face overlooking the village . They do not want monetary compensation. Finally, although they have been promised various facilities as compensation, they are skeptical whether the promises will be fulfilled, because apparently when two villagers had earlier been given a job in the Park as guards, their jobs were suspended and they were only given half the pay due to them [Official Document #1 see Annexure 41] .

Although they are reluctant to move, if the villagers of Shakti are forced to go, they feel that the following actions should be taken if compensation for this relocation is to be adequate.

- a) Land for land should be given: the land given should not be of worse quality than that lost and must be ready for cultivation i.e. cleared and leveled.
- (b) A house for a house should be provided, i.e. if one family has three houses, then 3 comparable houses should be provided
- (c) A sheep farm in Sainj for the whole village should be provided.
- (d) The villagers should be given preferential employment in the Park, and one person from each family should be given employment.
- (e) Their *devta* (the huge rocky outcrop) should be relocated with them.
- (f) The entire village should be relocated together.
- (g) One individual from Shakti also wanted a flour mill to be provided.

**Maraur :**

The villagers of Maraaur were not sure when they had first heard of the Park authorities' relocation plans. They too were unwilling to be relocated. Their *devta* had said that he did not want to leave and that he would not go lower than Shakti. However, if they were forced to move, then they felt that the following demands should be satisfied.

- (a) The entire village should be relocated together. This particular demand has apparently been made in writing.
- (b) There should be a fair exchange of land and houses, i.e. land for land and house for house.
- (c) At least one member of each household should be given employment by the Park authorities.
- (d) They should have access to the forest produce which is necessary for their livelihoods.
- (e) Facilities such as schools, water and electricity should be provided.

**Manjhan :**

The villagers interviewed in Manjhan said that they were indifferent to the Park so long as they are allowed to stay where they are and to carry out all their present activities [VS]. They had not been consulted before the establishment of the Park and they appeared to have no clear idea as to what the function or value of the Park was [VS].

Both the permanent resident households of Manjhan were opposed to being resettled, and one household felt that they would be unable to have the same way of life outside the Park [HHS1]. The second household felt that displacement would affect their ties with the land and forest, and with the villages in the adjacent area. Furthermore, they would become separated from their *devtas* [HHS2].

One household in Manjhan came to know of their proposed relocation from a forest guard some four to five years ago [HHS1], while the other heard of it from local people two to three years ago [HHS2]. But the same



respondent has stated in the Village Schedule that they first heard of relocation, from the *Patwari*, four years ago. Those who heard of it from the forest guard were told they were being displaced because of the establishment of the Park [HHS1]. Both households said they will only go if they are forced to. One household had heard that they are to be resettled in a place near Majharna/Shirshadhar. But although they know people at the relocation site who are quite friendly, they felt this might change after relocation. Furthermore, they felt that the land there was very rocky and that there are too many wild animals there [HHS2]. The respondent from the other household said he was not aware of any relocation plans including possible sites, but later said he did not know anyone at the relocation site, suggesting that he is aware of the site [HHS1].

If the villagers have no choice but to move out, they would then like the following. One household would like to have land of similar quality to what they presently own, access to grazing lands, forests, *thaches*, a flour mill, water and electricity [HHS1]. The other only mentioned that they had asked for land in a Government farm in Sainj, but were refused [HHS2].

## **5.2 NON-HABITATION RELATED RESTRICTIONS**

### **5.2.1 Restriction on Grazing of Livestock**

All grazing in the Park is to be stopped, however it can be allowed to a sustainable level in the sanctuary.

The process of imposing restrictions has not started. The survey did not obtain any details from Park authorities of how and when rights of local people and migratory graziers will be extinguished. There is again no plan for the acquisition of grazing rights from local people and migratory graziers.

Therefore, it is not clear when these rights will be extinguished, whether any compensation will be paid or what alternatives will be provided to meet people's requirements for fodder and pastures. The only possible compensation mentioned is the proposal to give preferential employment to

local people at the Park [mp:p.29]. Field visits have indicated that people do go into the park for grazing and there has been no check on their rights, or on the number of livestock they take in to graze or for the duration for which they are inside the park. The creation of the Sainj Sanctuary has also opened up the possibility of allowing regulated grazing to carry on inside the PA.

**Nature and Quantum of Impact** - It is difficult to assess the specific impact of grazing on the Park as it has been going on for a long time. However, there is bound to have been a change in the vegetation of the areas which have been regularly grazed. Besides, in the last few areas the pressure of grazing has been going up and there is evidence to suggest that grazed thaches are getting degraded and new thaches are being opened up to grazing. Besides, studies suggest that grazing is adversely affecting the barking deer and musk deer population [see 6.4 below].

**Perceptions of Graziers** - While as yet there have been no restrictions imposed on the grazing of livestock inside the park, the graziers were quite clear in stating that there were no alternatives to grazing available. They maintained that any restriction on this activity would lead to a lot of hardship on the local people.

### ***5.2.2 Restriction on Fodder Collection***

All fodder collection in the Park is to be stopped. Principally, Park villagers, and people from villages near the boundary of the Park and possibly migratory graziers are going to be the ones affected the most by this restriction [see Section 4.1.4].

### ***5.2.3 Restriction on Herb Collection***

All herb collection in the Park is to be stopped. Park villagers and an unknown number of people from villages in the adjacent area are going to face the consequences of this restriction [see 4.1.5].

Herb collection is the principal source of monetary income for many families from villages both in the Park and in the adjacent area. An unknown

number of families, possibly several hundred, may be seriously affected if this activity is stopped (see 4.1.5 and 4.2).

Park authorities in both 1989 and 1991 felt that extraction of certain herbs was becoming unsustainable, particularly of dhup and gucchis. They also believe that collection has increased significantly in the last ten years. This view was confirmed by many local people, including herb collectors [HCS1, PV/FV1 & 2, informal interviews with herb collectors]. Right-holding herb collectors also complained of non-right-holding outsiders coming to the area.

Two scientists who have visited this area several times over more than a decade also feel that certain herb species may be over exploited [Gaston and Garson, 1991].

#### **5.2.4 Restriction on Hunting**

Establishment of the Park has resulted in restrictions on local people's traditional activity of hunting. Although hunting is not thought to be a major economic activity, without hunting local people lose access to a source of protein and other wildlife products, such as horn, skin, etc. Some species like the musk deer are hunted mainly because musk fetches a high price in the national and international market.

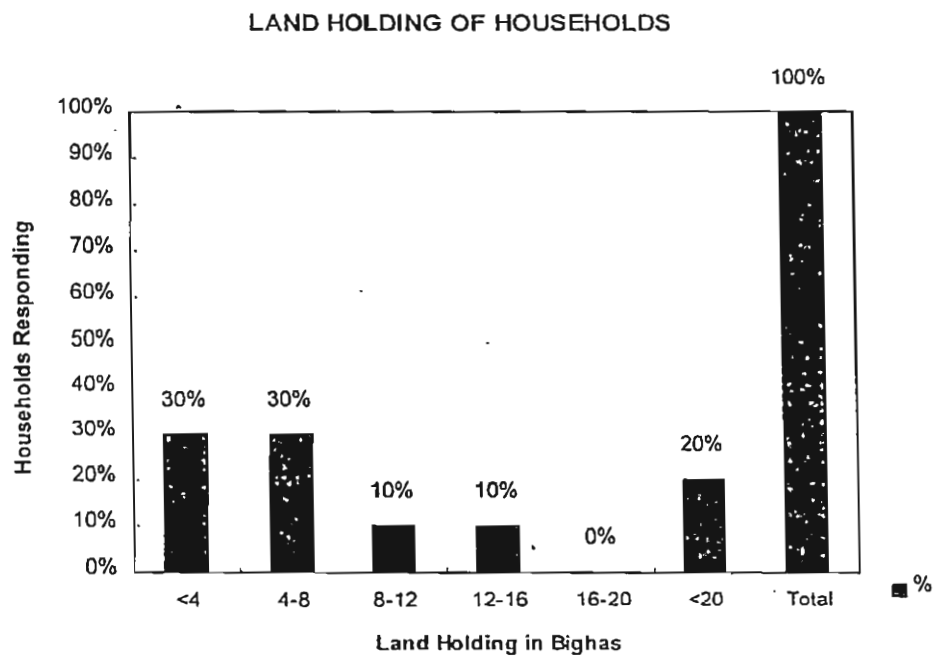
The restriction on hunting was imposed as of the first notification of the Park in 1984.

It is difficult to assess the nature and quantum of the impact of restricting hunting. It is not known how important wild animals were to different groups of people as a source of protein and other products previously, nor whether satisfactory substitutes have been found for the wild products. One impact, however, is the difficulty of defending crops, livestock or human lives from wild animals, as injuring or killing a wild animal, especially if it is an endangered species, can result in severe penalties. The actual frequency of such incidents is not known.

5.2.5 Cultivation

The agro climatic conditions provide a range of potentialities for growing vegetables, potatoes, pulses and temperate fruits. Among the cereals, wheat, maize, and barley are grown . Over the years, there has been a shift from Saryera and barley, which were extensively grown, to maize and wheat. Rajma, peas and red chillies are crops which help villagers earn some money. Because of the hilly terrain, irrigation is limited and agriculture is, therefore, susceptible to the vagaries of nature.

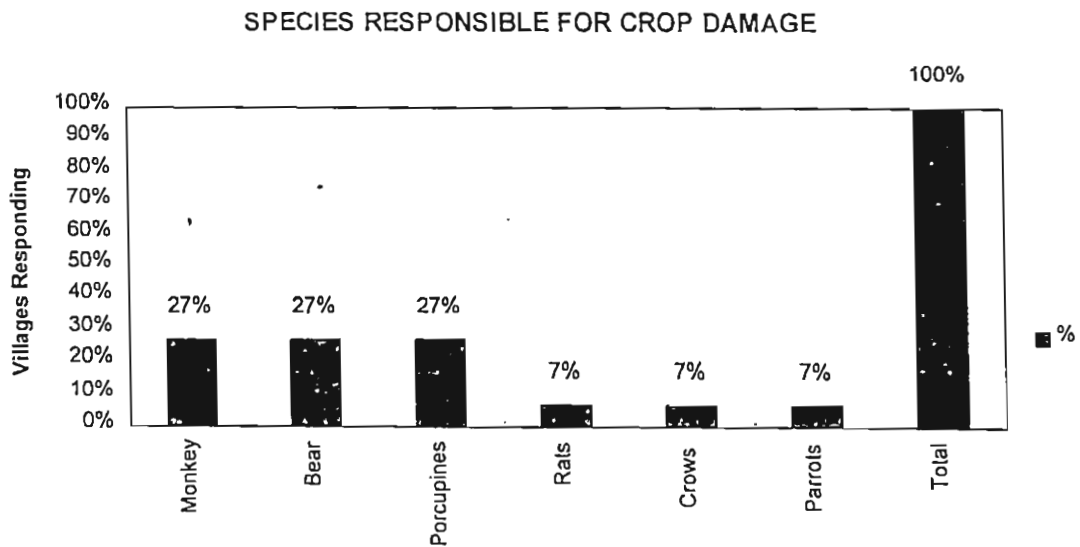
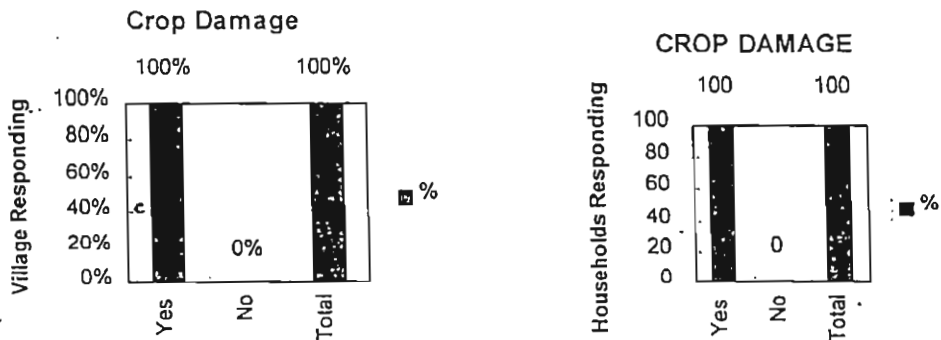
Settlement operations in the district were carried out at different times. Prior to land reforms, most of the land was in the hands of big landlords who leased out the land to tenants, on payment of rent in cash or kind. With the framing of tenancy laws, landlordism has almost been abolished and, after the implementation of the Himachal Pradesh Tenancy and Land Reforms Act, most of the cultivators have become the owners of the land cultivated by them



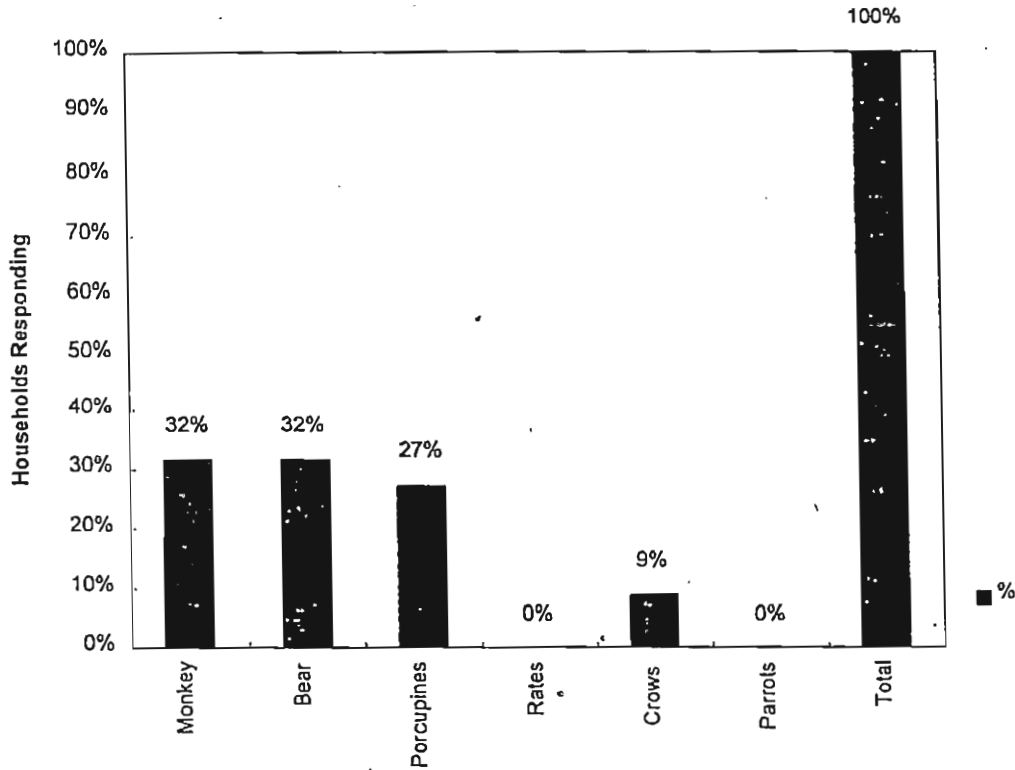
Annual Activity Cycle - The economy of the district is basically agrarian, with 79% of the workers engaged in agricultural activities all year round. From

March to May the villagers are busy preparing the fields for sowing corn, wheat and potatoes. August-September, i.e. during "Bhadon" is harvest time. In the period the grain is cut and threshed before the rains begin, Simultaneously, the fields are prepared and the next crop sown so that the monsoons can benefit the crops.

In all the villages that were visited the villagers complained that their crops were destroyed by wild animals.



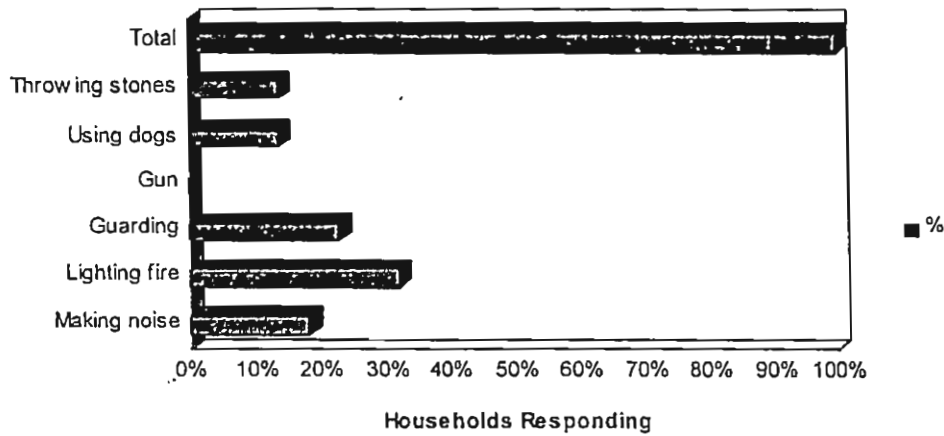
### SPECIES RESPONSIBLE FOR CROP DAMAGE



Monkeys, bears, porcupines, rats, and parrots were mainly said to be responsible for the loss of crops. Monkeys and bears favored the corn crop and at times more than half the field would be destroyed by them.

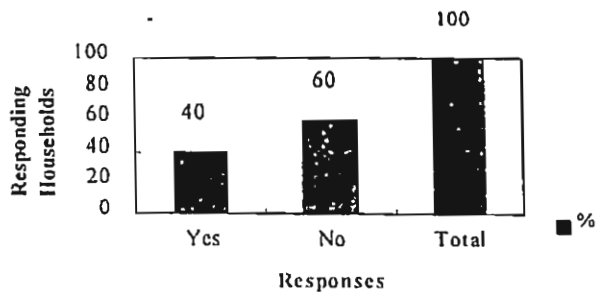
The villagers claim that there has been a gradual increase in crop damage in the past 10 years, because there is a ban on hunting animals. About 25 percent of the villagers interviewed said that they would like to kill the animals that came on their fields but did not do so because of restrictions by the park authorities. The other means of protecting crops used by the villagers included lighting of fires, guarding at night, making noises to scare the animals and using dogs to guard their fields. In one village the elders said that Leopards sometimes lift their cattle and other livestock.

### MAIN METHODS OF CROP PROTECTION



Regarding compensation, 60 percent of the villagers said that they had not asked for it and had no idea who to get it from, and that it was not worth the effort. Though the local people used their own devices for protection of their crops, they did express the view that they would also like the wildlife authorities to help them make a 7-8 ft. high fence around their agricultural fields.

### COMPENSATION ASKED FOR?



## 6. PAST AND PRESENT MANAGEMENT STRATEGIES

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### 6.1 MANAGEMENT PROFILE

#### 6.1.1 *Legal Status*

**Date of Establishment** - A small area (8396 ha) of the present Park had been notified earlier as part of Tirthan Sanctuary on 17.6.1976. The first notification declaring the intention to set up Great Himalayan National Park was given vide letter no. 6-16/73-SF-II dt. Shimla, 1 March 1984. In 1994, an area of 14,500 ha was added to the intended national park vide notification number D-XII-54(c)/14746, dated 15-3-1994. Also, the intention to constitute a sanctuary, to be known as the Sainj Sanctuary, with an area of 9,000 ha out of the intended Great Himalayan National Park was notified vide notification number D-XII-54(c)/14229, dated 17-3-1994.

**Completion of Procedures** - Final notification of the Park is pending the completion of various procedures stipulated in the Wildlife (Protection) Act, including the settlement of rights. A proclamation has been issued by the Collector and an inquiry into existing claims has been started. A Settlement Officer, the ADM Kullu, was appointed on 5.12.1985 and some work was carried out regarding the relocation and rehabilitation of Park villagers [see Section 5.1], but acquisition procedures have not been initiated [Q.A2].

#### 6.1.2 *Management*

**Area and Zoning** - The present Park area is 76,500 ha. There is currently no zoning, but when the Park was first notified a buffer zone of 111,600 ha was also notified. The buffer zone was denotified vide letter no. 6-16/73-SF-IV, dated. Shimla, 30.7.1990. There is, however, an ecodevelopment zone outside the national park in its western periphery. This zone is now being managed as a buffer for the national park.



Before its area was increased in 1994, the Park was divided into three Wildlife Ranges, namely the Jiwa Nal range with its headquarters at Largi, about 26 km to the west of the park, the Sainj Range, with headquarters at Sainj, some 12 km to the west the Park, and Tirthan Range with headquarters at Sai Ropa which is about 10 km to the west of the park (approximately 4 km from Banjar). Each Range is further subdivided into blocks and beats [mp; Annexure 38]. Park headquarters are presently at Shamshi, Approximately 45 km to the north-west of the Park. Details about the administrative break-up of the area which has been added to the park are not known. This may partly be due to it not having been handed over to the wildlife wing yet. What is known is that it falls within the Parvati Forest Division.

**Communications** - Communications from and to the Park, as well as within the Park are extremely limited. There are no motorable roads upto or within the Park, only bridle paths and footpaths . The nearest roadheads are at Neuli (5 km west), in the Sainj Valley, and at Gushaini (5 km south-west) in the Tirthan Valley. The nearest railhead is at Joginder Nagar, 150 km from the Park, and the nearest airport is at Bhuntar (approximately 45 km north-west). Communication within the park has now become relatively simple because the park authorities have now aquired an extensive wireless network, with several mobile as well as fixed wireless sets.

**Budget** - The Park has a separate budget. A major part of the budget is funded through the IDA funded ecodevelopment project which is currently ongoing. This is part of a larger Forestry Research Education and Extension Project (FREEP). The duration of the ecodevelopment project is five years, and it was initiated in 1994-95. In 1994-95, Rs. 30.8 lakhs were spent from the funds allocated for the park from FREEP. An additional Rs. 22 lakhs were received for the same period from the Government. In 1995-96, 43.85 lakhs were received from FREEP, while the government funding declined to Rs. 18 lakhs. In the current year, an expenditure of Rs. 150 lakhs has been

budgeted under FREEP. The park authorities do not expect any funds through government sources for the current year [Guleria, pers. comm., 1996]

**Management Plan** - The management plan for the Park was prepared by Shri R.C. Sharma, who was then the D.F.O., Parvati Division. The plan was finalised and approved in 1988. The plan is valid for a period of 10 years, from 1987/88 (in retrospect) to 1996/97 [Q.A1, mp]. The plan contains factual information about the Park as well as some details of the Park's values and objectives, and proposed management strategies. The values and objectives of the Park are discussed in Chapter 3, while other details of the plan are discussed in Section 6.3.

#### **Personnel :**

##### **a) Staff Numbers :**

Current staff strength is as follows:

- 1 Park Director, based at Shamshi
- 1 Deputy Park Director also based at Shamshi
- 4 Range Officers (based in Shamshi, Largi, Sainj, and Sai Ropa respectively)
- 11 Deputy Range Officers
- 22 Forest Guards
- 1 Office Assistant
- 3 Clerks
- 1 Draftsman
- 1 Peon
- 1 Driver

There is, however, still a great shortage of manpower, especially at the Forest Guard level. [Guleria, pers. comm., 1996]

##### **b) Facilities for Staff :**

One cause for concern, especially among the forest guards, is the welfare of their families when they are on field duty. At present their families are scattered in towns and villages around the Park. Staff are also concerned

about access to good educational and health facilities for their families [FV1].

**Equipment** - The following equipment is available:

- 1 jeep
- 11 pairs of binoculars
- basic camping equipment including 10 tents, 23 sleeping bags, 20 feather lined jackets and 20 windcheaters, carry mats, utensils, pots, etc.
- Several fixed and portable wireless sets
- 1 computer
- 1 photocopier
- 1 video camera
- 1 still camera
- 1 video cassette recorder
- 1 slide projector
- 1 color TV

**Research and Monitoring** - Park authorities started annual wildlife censuses in 1990. Censuses are undertaken in winter in all three valleys, after the first snowfall, usually around the first or second week of November. Census methodology includes sightings and indirect evidence on transacts, and some 15% of the Park area is covered [Q.A2]. Details of census operations including results for 1990-91 are given in Annexure 20. However, no full-time research staff have been appointed and few facilities are available for researchers other than cheap accommodation [see Annexure 39].

Recently, the Wildlife Institute of India, Dehradun, has initiated a longterm research project in the park. Details regarding this project are not known.

Some research was undertaken in the Park area in 1978-79, prior to its establishment: a British-American-Indian team conducted wildlife surveys in the area and produced The Himachal Wildlife Report [Gaston et al., 1981]. Additional wildlife surveys have been undertaken in September-October

1991, led by Dr. P.J. Garson (University of Newcastle, U.K.), Dr. Virinder Sharma (Dept. of Science and Technology, Shimla) and Dr. A.J. Gaston (Canadian Fish and Wildlife Service). A researcher from the Geological Survey of India has undertaken research in the Park.

**Regulation of Entry** - The Park is legally open throughout the year, but becomes less accessible from December to February. Entry permits for tourists are issued by the Park Director. There is very little regulation of local people and others familiar with the Park area, as there are at least nine entry points into the Park, of which only four have manned check-posts. Entry is prohibited at night, but this is largely impossible to enforce [Q.A2].

**NGOs/NGIs Associated with the Park** - There was earlier an Honorary Wildlife Warden, Mr. Virinder Singh, who lives in Shangarh, 8 km to the west of the Park boundary. Currently the NGO's and NGI's working with the parks environment are:

**NGO'S**

1. Iqbal Singh

Society for Advancement of Village Economy

2. Nalin Sharma/Rajiv Bharti

Secretary

The Ecoist

**NGI's**

Raman Mehta (WWF-India), Peter Garson (University of Newcastle Upon Tyne, United Kingdom), Dr. A.J. Gaston (Canadian Wild Life Service, Canada)

### **6.1.3 Ecological Factors**

**Factors Affecting Habitat** - Factors affecting habitat (other than those described in Chapter 4) include fire, water shortages, avalanches and landslides, all of which are described in Section 2.1. However, none of these

factors are considered by Park authorities to be seriously affecting the Park, and all, except fire, are natural occurrences. There is also some growth weeds, especially in areas used by livestock [see 4.1.3].

**Occurrence and Control of Diseases** - There are no Park records of occurrence of disease, although wild animals in the Park have been affected by disease in the past [see 4.1.3]. There is no control of disease by Park authorities. The nearest veterinarians are located at Sainj and Banjar, 12 and 14 km away, respectively from the nearest entry point into the Park. Park authorities have no information on any plant diseases occurring in the Park, but villagers of Manjhan reported that some grasses are affected by a disease that also affects corn [Manjhan VS.]. This year (1996), the park authorities took up vaccination of livestock in the villages adjoining the park.

#### **6.1.4 Human Presence**

**Rights and Leases** - Local people from villages inside the Park and adjacent areas have the following rights in the Park: livestock grazing, fuelwood and fodder collection and NWFP collection [Q.A2 & QQ; but see 4.1.6 regarding legal status of NWFP collection]. In addition, Park villagers have the right to habitation, cultivation and a concession to religious monuments, religious yatra and religious fairs [Q.A2 & QQ]. It is not clear whether the latter is indeed a concession as it is said to be given as per the Management Plan. There is also a discrepancy over whether right of way is a right [Q.A2] or concession [QQ] given to local people and non-local migratory graziers. Notes from the first field visit indicate that Park villagers also have a right to burial grounds [Q.A], but this was not stated in Q.A2 and needs further clarification. Graziers coming from as far as Ani Tahsil to the south, have rights to graze livestock in the Park as well as right of way. The villages and/or individuals who have rights in the Park need to be listed along with full details of the nature of each right.

**Habitation** - There are four small villages inside the Park, one of which is no longer inhabited all year round. According to Park records, there are 23 families with a total population of 170. Habitation is discussed in detail in Sections 2.1.9, 2.2 and 4.1.1.

**Grazing** - Grazing is discussed in detail in Section 4.1.3.

**Offenses and Illegal Activities** - Only one case has been filed till August 1989, against illegal hunting [see Sections 4.1.11].

**Tourism** - The Park is open to visitors throughout the year, but receives very few visitors annually. Only 16 visitors were recorded in 1990-91, of which 15 were Indians and one a foreigner. Some 50 Indian students also visited the Park. Tourists must be accompanied by a Forest Department official. There are no entry charges, but entry permits must be obtained from the Park Director. There is a fee for taking a camera into the Park.

There are no facilities specifically for tourists, but visitors to the Park may be able to use Forest Department resthouses [Annexure 39]. Park authorities will also provide guides for visitors. Visitors may also have access to the following material at Shamshi: maps of the Park, slides, photos and films on wildlife, checklists of wild animals, birds and plants in the Park. There is a proposal to construct a visitor interpretation centre at Shamshi [Q.A1] and at Sai Ropa [Pandey, pers. comm.].

**Use by other Government Agencies** - There is no use of the Park by other Government agencies at present. However, should the Parvati Hydel Project be approved, HPSEB may make use of the Park area (see Section 4.2.).

**Clashes** - There have been no major clashes between Park authorities and Park villagers or other groups of resource users.

**Injury and Death to Humans** - No instances of wild animals injuring or killing humans have been reported in the past four years [Vijay Kumar, pers. comm., 1991 see Annexure 8], but incidents do occur occasionally [FV1 & 2]. Bears, especially when with their young, are particularly dangerous. Park authorities

have not said whether compensation is payable, and if so what are the rates [Q.A2].

**Injury and Death to Livestock** - Compensation is payable for livestock injured or killed by wild animals (usually leopard or bear) either in the Park or in adjacent areas. Rs. 150 is reported to be paid per head of sheep or goat [Vijay Kumar, pers. comm., 1991 see Annexure 8]. Before compensation can be paid, a Forest Department official of the rank of Deputy Ranger or above must visit the site of the incident, do a head count of the number of animals killed, examine the evidence and prepare a map reconstructing the incident [Vijay Kumar, pers. comm., 1991 see Annexure 8]. Seven cases of injury to and/or death of livestock were registered by graziers in 1990-91. All seven have been accepted for compensation [Q.A2]. One notable case had been reported in September 1991: 134 sheep and goats belonging to local graziers died in Tirthan Valley after a leopard attack. The herd is thought to have panicked and jumped off cliffs [Vijay Kumar, pers. comm., 1991].

**Crop Damage** - Crop damage by goral, langurs, macaques, black bear, porcupine and pheasants occurs both within the Park and in adjacent areas, but there is no policy of compensation [Q.A2, FV1, VS-Manjhan]. There are consequently no records of the frequency and extent of damage.

## **6.2 SUMMARY OF MANAGEMENT ISSUES**

### **6.2.1 Main Issues**

Park authorities see their main objective [mp p17-18] as stopping all human activity in the Park. This they are required to do by law, before the Park can be fully notified. Park authorities view relocation and rehabilitation of the Park villages as the most pressing management issue, followed by stopping of herb collection and migratory grazing in the Park.

Park authorities also feel that Park management suffers from insufficient high quality equipment, lack of infrastructure and facilities for staff [FV1]. Park authorities felt that both the amount and the quality of available

equipment was inadequate. They stressed the need for reliable, high quality equipment given the harsh and sometimes dangerous environment in which they have to work. A further problem is that access to equipment is restricted as it is generally stored at Park HQ at Shamshi, some 45 km from the Park. It is suggested [Pandey, pers. comm.] that these perceptions are now changing with the advent of the ecodevelopment project.

## 6.3 OFFICIAL STRATEGIES FOR MANAGEMENT ISSUES

### 6.3.1 *Action Taken/Proposed Action by Park Authorities*

Upto August 1989, there had been little management effort directed at monitoring or regulating pressures on the Park, apart from attempting (unsuccessfully) to get all the crop protection guns in the vicinity of the Park registered. As of 1989-90, there has been some monitoring of herb collection and livestock grazing. Park officials check that all herb collectors and graziers passing through check-posts at Bah and Shansher in the Sainj Range, and Kharongcha, Shungcha, Sarahan and Mashiyar in the Tirthan Range, are right holders. They also record the following information:

- name and address of right holder
- date of entry and exit
- purpose of visit (herb collection, grazing of livestock, etc.)
- forest to be visited
- type and quantity of produce collected, or number of sheep and goat

However, records are frequently incomplete. Many do not have complete dates of entry and exit, and in the case of herb collection only one or two herbs are recorded per collector, although collectors tend to collect several herbs. In fact, the records suggest that only *Dhoop*, *Nihani*, *Patis* and *Hathpanja*, and *Shingli* are collected in the Park. However, collection of *Kadu*, *Mushkbala* and *Mehendi* is also known to be significant. According to the former Park director, records do not provide an accurate picture of the extent and amount of herb collection and livestock grazing in the Park



[Sanjeeva Pandey, pers. comm., 1991 see Annexure 8]. This is likely to be true, as it is very difficult to monitor entry and exit into the Park: many entry points are not via checkpoints, and checkpoints are not always manned.

Park authorities propose to take the following actions, as outlined in the Management Plan:

- i Acquisition/extinguishment of Park villagers rights
- ii Relocation of Park villagers
- iii Acquisition/extinguishment of rights of other local people and migratory graziers
- iv Stopping of activities of non-right holders in the Park.
- v Improving management of the Park including protection

#### **Acquisition of Park Villagers' Rights and Relocation of Park Villages**

Relocation has been in the hands of the Revenue Authorities since 1985, when the first Settlement Officer was appointed (on 5.12.85). There is not much that the Park authorities can do until the Revenue Authorities develop a resettlement and rehabilitation plan that is acceptable to the Park villagers. Details of the action taken by the Revenue Authorities is given in Section 5.1.

#### **Acquisition of Rights of other Local People and Migratory Graziers**

Neither Park authorities nor Revenue Authorities have even started to look at the settlement of rights of local people (other than Park villagers) and migratory graziers

## Improving Management and Protection

Upto August 1989, very few management activities were taking place in the Park. A number of actions are proposed in the Management Plan for improved management of the Park, including strategies for dealing with some of the perceived pressures on the Park. These are described briefly below.

- (i) Compulsory immunization of local cattle. No details given of how this is to be achieved.
- (ii) Increase in staff numbers accompanied by improvements in their living and working conditions, e.g. by being better housed and equipped as outlined in Chapter V and Annexures IV and VI of the Management Plan.
- (iii) Improving the competence of management staff by providing each one with specialised training. No additional details given.
- (iv) Carefully planned and regulated development of infrastructure within the park for facilitating protection, management, research and tourism. This involves the construction of three motorable roads upto the Park boundary:
  - 1. From Ropah to Bah;
  - 2. From Gushaini to Rolla on the Park's southern boundary;
  - 3. From Seund to Pashi in the Jiwa Nal Valley.

Four bridle paths are to be made in the Park and a network of 13 inspection paths [mp:p.23] is to be established.

- (V) Improvement of protection measures by increasing the number of checkpoints and guard huts, erecting boundary pillars particularly on the western and southern boundaries and stringent fire prevention measures. A 100 km fire line is to be made along the southern and western boundaries of the Park.
- (Vi) Regulated development of the buffer zone as multiple use zone. No details are given of how this is to be implemented.

- (Vii) Habitat 'improvement' through planting of areas with grass species palatable to wild herbivores [mp: p.27].
- (Vii) Supplementing food resources of wild animals by planting wheat, maize, and other cereals in "suitable places" [mp: p.28].
- (ix) Supplementing water resources for wild animals by creating water hole [mp:p.28].
- (x) Soil conservation works are to be conducted in 'nallas' and "heavily degraded pastures" [mp: p.17]. Erosion of river banks and subsequent siltation of water courses is to be controlled through the construction of check dams, retaining walls and brushwood dams
- (xi) Appointment of one full time Research Officer, "preferably a biologist" [mp:p.32], one taxidermist, and two lab assistants. Research including census and monitoring to be undertaken regularly [mp:pp.30-31].

The following management actions are in the process of being taken or have been taken since August 1989:

1. 35 salt licks have been provided in the Park
2. A bridle path is being constructed along the Tirthan River.
3. Improved protection through better organized patrolling. Several new inspection huts have been constructed and existing huts and resthouses renovated, e.g. at Nada and Maraur, respectively.
4. Regular wildlife census operations since 1990 in all three wildlife ranges.

Park authorities are not planning to supplement food resources of wild animals or improve habitat, vii and viii above [PD/FV1].

## • 6.4 ASSESSMENT OF MANAGEMENT STRATEGIES AND PERFORMANCE

The main objectives and strategies proposed to achieve these objectives as stated in the management plan are discussed one by one below.

### **1. “To obtain perpetual ecological balance by creating optimum conditions for the development of wild animals and birds and their habitat in the Park area.”**

It is not clear what the “development” of wild animals and birds and their habitat means and thus what the “optimum conditions” for this development are.

Before strategies for maintaining the ecological balance can be formulated there is need for some understanding of the ecological relationships within the Park in order to be able to determine whether the “balance” is being disrupted.

Thus, although objective (3) indicates an awareness of this need, no research has been undertaken by Park authorities as yet, and further more, only one full-time Research Officer is budgeted for (see Objective 4 below).

### **2. “To protect, conserve and multiply the endangered wildlife species such as snow leopard, blue sheep (bharal), Himalayan tahr, musk deer, monal and Western tragopan”.**

Although the conservation of endangered species is an important function of national parks, it does not follow that management should actively promote the population growth of such species within a particular conservation area. A globally endangered species is not necessarily a locally endangered species.

Before actively promoting the population growth of any species, the following should be established:

- (a) what is the justification for such action,
- (b) what is the carrying capacity of the Park (and any available adjoining regions) for the species in question,
- (c) what will be the impact of strategies for promoting population growth of one or more species on other species, both plant and animal, including

how much disturbance will be caused, for example, if habitat improvement works are envisaged.

- (d) whether such manipulation of the ecosystem is compatible with the goals or functions of national parks in general

If what is meant by "[to] multiply endangered wildlife species" is the natural increase in such populations as a consequence of protection, then this may be a valid goal. However, strategies described in Chapter III [mp:27-28] suggest that Park management seeks to actively increase species numbers. These strategies include:

- i) planting a 100 ha annually with fodder species (such that a total area of 1000 ha will have been planted with fodder species by the end of the plan),
- ii) growing wheat, maize and other cereals in "suitable places",
- iii) constructing 20 water points in the higher reaches,
- iv) stacking hay "at convenient places in alpine areas during lean periods".

This last suggestion is rather impracticable as lean periods in such environments are usually in winter when the Park is even less accessible due to snow and ice. In order to implement this proposal, ill-equipped, poorly-paid guards will have to undertake arduous, dangerous, treks through snow and ice carrying loads of hay.

The other proposals (i-iii) appear more workable, but management action which involves changing the natural habitat or interfering with natural processes should not be undertaken without careful consideration. It must first be established whether such human interference is in accordance with the objectives of a national park.

Secondly, there should be some indication that wild animal populations are either not growing or declining and whether this is related to insufficient food and/or water resources. In this case, no quantitative information is available on any of the Park's animal populations. Gaston et al. (1981) reported that musk deer may become locally extinct in this area, but mainly

due to illegal hunting [but see 4.1.10]. They also report that the barking deer population is low and that bear populations appear to be declining. They suggest that barking deer and musk deer, both of which prefer forests with a dense understorey, are adversely affected by grazing of livestock which tends to deplete the understorey. No reasons are suggested for the declining bear populations. Their study suggests that the priority for stopping the decline in musk deer is greater protection. Elimination of livestock grazing within the Park may also favor musk deer as well as barking deer populations. Thus, in two out of the three known instances of population decline in the Park, the appropriate management strategy does not seem to be one of augmenting food resources.

There is also no information on the quality and quantity of food resources available to wild animals. There are apparently water shortages in the upper reaches in the summer (see 2.1.5), but there is no information on how, if at all, this is affecting different populations. Thus, it is difficult to understand why such proposals for augmenting food and water resources of wild animals have, (a) been made in the first place and, (b) been approved uncritically. However, according to the then Park Director, proposals for planting fodder and cereal crops will not be implemented [FV1]. It is not clear who has decided to abandon these strategies, nor on what basis they have been abandoned. If this is indeed the case, perhaps these proposals should be deleted from the Plan.

The provision of salt licks for wild herbivores may have some justification as there are reports from graziers that wild animals use salt that is laid out for their livestock (35 salt licks have been established). However, even this needs to be carefully assessed.

### **3. "To eliminate all such factors as are inhibitory for the development of the National Park and its ecosystem."**

Again, what the desired "development" of the National Park and its ecosystem is, is not clear. The factors which are considered to be "inhibitory"

are presumably the various human activities to be eliminated which are outlined in the paragraph after Objective 6 (see below). Other such factors may include soil erosion, fire, avalanches and landslides, as detailed strategies are provided for these events in the Management Plan. However, as most of these are natural phenomena, it is not clear why they should be "eliminated".

**4. "To provide for wildlife census and its scientific study."**

Wildlife census and research are integral components of any wildlife management programme. Wildlife census was started in 1990, but no research has been undertaken as yet. Proposed numbers of research staff (1 full-time research officer who need not be a biologist, 1 taxidermist, 1 veterinary assistant, 2 lab assistants and 2 stock assistants) may be inadequate given the following:

- (a) the shortage of detailed information on the Park's wildlife,
- (b) the number of important animal species which need to be censused and studied,
- (c) the size of Great Himalayan National Park, and
- (d) the working conditions, i.e. difficult terrain, harsh climate, etc.,

**5. "To cater to the recreational and educational aspects of wildlife management especially for students and tourists both local as well as foreign."**

Detailed proposals for building accommodation, paths, training guides, etc. are given in the Management Plan. Some accommodation is available [see Annexure 39] and a new bridle path is being constructed along the Tirthan.

**6. "To specifically provide for employment opportunities to the local people who used to exercise rights in the park area for generations."**

No details are given of what kind of employment or how much employment will be provided.

In the paragraphs following the six main management objectives, 13 strategies for attaining the primary goals or secondary objectives are stated, 11 of which are contained in a single paragraph:

**“In order to achieve these objects, the staff has to be adequate and better equipped for the job. The villages from core area have to be shifted and various kinds of rights shall be acquired by paying compensation. Grazing, both local and migratory, and collection of medicinal herbs have to be dispensed with. Motorable roads shall only be constructed up to the boundary of the park area. These will be substituted by well aligned bridle paths inside the core area. At present there are practically no buildings for the staff, not to speak of Inspection huts or rest houses for tourists. Therefore, a network of such buildings shall be constructed. Also a number of checkpoints are to be constructed around the periphery of the park in order to exercise proper control on the possible illegal activities of undesirable elements.”**

Camping sites are to be developed inside the park for nature and wildlife lovers including students.

Control measures are also to be strictly enforced in the buffer zone in order to safeguard the core area.” [mp:pp 16-17]

For clarity's sake, each proposed strategy or secondary objective should have been listed separately with details of how each was to be implemented.

These strategies and secondary objectives are listed and discussed below. Any details of implementation found elsewhere in the Plan are incorporated and discussed here.

#### **1. Adequate Staff Numbers :**

Numbers of staff are significantly lower than the numbers proposed in the management plan [mp:Chapter V and this report: Section 6.1.2.5]. However, present protection staff numbers were thought to be adequate by the Park Director in 1989. Are the quantity of staff overestimated in the Plan or was the



previous Park Director underestimating the number required for effective management of the Park?

## **2. Adequate Equipment for Staff :**

A long list of proposed equipment is given in Annexure I of the Plan. Most of the listed items are appropriate and necessary for effective management of the Park (although the need for fishing tackles is surprising). However, very little equipment had been purchased by November 1991 (see 6.1.2.6). Ideally, an experienced wildlife manager should review the list of proposed equipment to check whether it is comprehensive and if proposed quantities are likely to be sufficient. Ideally also, the make of each type of equipment should be given. The whole team should review the list of proposed equipment.

## **3. Relocation of Park Villages :**

No details of the relocation plans for the Park villages are given, other than to state that they will be relocated and that compensation will be paid. No time schedule for relocation, details of the human populations to be shifted, or the amount and nature of the compensation to be given are provided, other than to state that relocated villagers will be given preferential employment (see below). However, as this is to be a major management operation, a detailed relocation plan should have either been included in the management plan or produced separately, but no such document exists.

## **4. Acquisition of Rights of Park Villagers by Paying Compensation :**

Only the different types of rights exercised by villagers (and other locals) are enumerated in the Plan. There are no details of how many people exercise which rights and over what areas, other than that grazing is prohibited in the Rolla Forest of Tirthan Valley. Details of the amount and type of compensation are not given except as above. Furthermore, the objective as it is stated in the "Objects of Management Section" is misleading as local people other than Park villagers also have rights within the Park which have also to be acquired.

## **5. Elimination of Grazing by Local and Migratory Cattle [Livestock]<sup>7</sup>**

Again no details are given of the extent of grazing pressure nor of its impact, other than the potential for disease transmission, as has happened in the past, and presumed competition with wild herbivores [mp:p.15]. It is not clear how many and which graziers will be affected by this action nor whether they will be compensated.

## **6. Elimination of Medicinal Herb Collection :**

Once again no details are provided of approximately how many herb collectors there are, who they are, what types of herbs are collected, what the impact of stopping herb collection will be on the collectors, and what compensation, if any, will be paid.

## **7. Construction of Motorable Roads Upto the Park Boundary**

Sufficient detail is given of the three roads to be built [mp:p.23]. It must be remembered that the construction of such roads will make the Park much more accessible and to larger numbers of people. Although this need not be a negative effect, it could increase the extent of illegal use of the Park. However, mobility of staff is also important for effective management. As roads are to be built only upto three points on the Park boundary, these could, in theory, be quite easily monitored.

## **8. Construction of “Well-aligned” Bridle Paths Inside the Park :**

See mp: Annexure V & p. 23 for details.

## **9. Construction of Buildings for Staff**

See mp: Annexure IV for full details.

## **10. Construction of a “Network” of Inspection Huts and Resthouses for Officials and Tourists**

See mp: Annexure IV for full details.

## **11. Establishment of Checkposts on the Periphery of the Park**

See mp: Annexure IV for full details.

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<sup>7</sup> Although the term cattle is used in the Management Plan, it is mainly sheep and goats which graze in the Park

## **12. Development of Camping Sites for Tourists**

No details given in mp.

## **13. Strict Regulation of Activity in the Buffer Area in Order to Protect the Park**

No details given in mp.

The final paragraph of the section "Objects of Management" provides the rationale for having a management plan which covers a period of ten years, although the norm is five years. However, it could be argued it is precisely because it is the first such plan for the area and because it is based on so little data, that a plan covering a much shorter period of time should be in use. After a few years on data collection of the Park's flora and fauna a more rational and detailed management plan could be formulated. Also, because so much work is required in Great Himalayan NP, not just in terms of research, but also in terms of setting up infrastructure, eliminating human disturbance, etc., it may be advisable to have a plan covering a shorter period of time in order to conduct a thorough assessment of what progress has been made by the end of the plan period. However, a ten-year plan could provide a framework for preparing detailed annual plans, which in addition to details of budget allocations and proposed expenditure, also provided information on management issues, the time schedule for implementing management proposals as well as an evaluation of progress.

The main limitations of the plan are summarized below:

- (I) failure to state clearly the objectives of national parks in general
- (ii) failure to discuss the specific values of Great Himalayan NP
- (iii) lack of specificity of some of the stated management objectives
- (iv) failure to give justifications/rationale for various proposed management objectives and strategies
- (v) failure to clearly identify the nature and extent of management problems or to state the need for doing so

- (vi) failure to identify areas of pressing concern or prioritize objectives and provide a schedule for implementing the proposals
- (vii) limited reference to wildlife ecology and management
- (viii) failure to consider the need for monitoring progress in implementing proposals within the specified period of time and the achievement of the stated objectives
- (ix) failure to include any maps of the Park including topographical, vegetation and soil maps, as well as a map of the boundaries and administrative division of the Park into ranges
- (x) failure to provide any details of the relocation plans or of the compensation to be provided to local people and migratory graziers for terminating their rights and also failure to recognize the need for conducting extension work with local people
- (xi) given the above limitations of the plan, the inadequacy of the plan for the ten years for which it is intended
- (xii) failure to understand and emphasize the need to assess the status and distribution of the Park's natural resources in order to determine whether the desired state is present or if not, what strategies are required in order to attain the desired state

7. RECOMMENDATIONS

7.1 SUMMARY OF RECOMMENDATIONS FOR GREAT HIMALAYAN NATIONAL PARK

As already mentioned earlier in this report, before the study could be completed, the IIPA was requested by the Ministry of Environment and Forests to formulate an ecodevelopment plan for GHNP. Given below is a summary of the issues and problems being faced by GHNP, and the possible strategies to be followed for resolving these issues/problems. These were identified in the process of developing the ecodevelopment plan. A detailed description of these issues and strategies is given after the summary.

ISSUES	RECOMMENDED STRATEGIES
Developing a Management Plan.  # The current management plan for GHNP is old and needs to be substantially rewritten	Drawing up of a new management plan is a top priority. There is need to set up processes and Institutions that can ensure the increasing involvement of the local people in planning for, and managing, GHNP.

ISSUES	RECOMMENDED STRATEGIES
<p>Pressures from herb and mushroom collection.</p> <p># Only three villages Dhar, Sharnira and Shungcha have recorded rights for collection of herbs and mushrooms.</p> <p>Current estimates are that 2500 people enter the park for herb-mushroom collection.</p> <p># Many species collected earlier are no longer found.</p>	<p>Income generation activities should be started in the villages to provide alternate sources of income to the villagers.</p> <p>Research and development efforts should be made to see whether these herbs can be cultivated, naturally or through tissue culture, outside the park. If successful, herb and mushroom cultivation can become another income generation activity for the villagers.</p>

ISSUES	RECOMMENDED STRATEGIES
<p>Pressures from seasonal grazing sheep and goats.</p> <p># It is estimated that 25,000-30,000 sheep and goats graze inside the park every summer.</p> <p># Grazing has been going on from 1886 and perhaps from even before.</p> <p># However, in recent times the numbers have significantly increased. It is therefore important to control grazing and protect the 'thatches' from over grazing.</p>	<p>The traditional grazing areas of the park should initially be notified only as a sanctuary so that controlled grazing can be permitted.</p> <p>Villagers should be persuaded to cut down on their flocks, in return for ecodevelopment inputs of their choice.</p> <p>Alternate 'ghasnis' or grazing lands should be developed outside the PA.</p> <p>There should be research relating to 'thatches'. An assessment should be made of the impact of grazing on biodiversity of the Park. On the basis of this an assessment of the carrying capacity would emerge leading to an appropriate management strategy.</p> <p>Research should be conducted to independently confirm the villagers' assertion that 'thatches' have highly nutritious grass varieties. If so, efforts should be made to develop methods for cultivating the nutritious varieties of grass outside the park.</p>

ISSUES	RECOMMENDED STRATEGIES
<p>Habitation within the park.</p> <p># Out of the four original hamlets inside, two have shifted out.</p>	<p>Considering the remoteness of the area, it would be difficult to find foresters and guards willing to be based inside the PA. As such, it would make sense to recruit the villagers, who are already living within the PA, as guards to help in the proper management of the PA. The population inside is very small with hardly any negative impact on the PA. In fact, it is likely that their relocation and the consequent posting of outsiders as guards might cause greater disturbance.</p> <p>If and when the villagers inside themselves want to shift out, a proper rehabilitation package must be worked out with their approval and participation.</p>
<p>Poaching of wild animals, especially the Musk deer and the Snow leopard</p> <p># There have been a few reported incidents of poaching. However, due to the remoteness of the area it is difficult to assess the actual incidence.</p>	<p>The monitoring network of the park should be strengthened, with the involvement of local people.</p> <p>Anti poaching squads should be strengthened with better communication network.</p>



ISSUES	RECOMMENDED STRATEGIES
Research and monitoring	<p>GHNP should be developed into a site for research into Western Himalayan high altitude ecosystem. The branch of the GB Pant Institute for Himalayan Ecology, at Shamshi on the outskirts of the Park, should be made full use of.</p> <p>R&amp;D is also needed to solve some of the major problems facing the PA, especially by developing alternatives to the high altitude fodder and by establishing cultivations for major medicinal herbs currently being collected from the PA.</p> <p>Detailed monitoring of the ecosystem is required, especially to assess the impact of grazing and herb collection.</p>
Exchange of knowledge	<p>Local knowledge of the area should be recorded and shared with scientists and others from outside.</p> <p>Similarly, information about national and global environmental concerns should be shared with the local villagers. They should also be involved in discussions about the ecological value of GHNP.</p>

ISSUES	RECOMMENDED STRATEGIES
Crop damage and injury or death of livestock.	Though these are not widespread, most villages complain of at least some incidence. Appropriate compensation for crop damage and livestock injury or death must be speedily paid. There is also a need to develop innovative methods of crop protection.
Poor communication in the region	<p>Though there has been a demand for building motorable roads within the PA, this might not be advisable as both the construction and the existence of roads would pose a threat to the ecology of the PA. However, communications can be facilitated by constructing bridle paths connecting selected villages to each other and to the existing motorable roads.</p> <p>Also, there can be a provision for mules and ponies to facilitate transportation of goods.</p>

ISSUES	RECOMMENDED STRATEGIES
<p>Possible future pressures from slate quarrying.</p> <p># This is already a major activity around Sainj</p>	<p>Awareness programmes need to be initiated to make the people understand the hazards of mining on steep hill slopes.</p> <p>The Environmental (Protection) Act needs to be invoked to regulate potentially destructive activities around the PA.</p>
<p>Pressures from fuelwood collection.</p> <p># These are currently restricted to the periphery of the PA, near human habitations.</p>	<p>In order to anticipate future increased pressure for fuelwood it is essential to develop mixed fuel and fodder plantations in areas adjacent to the villages, outside the PA.</p> <p>Also, JFM of degraded forests in adjacent areas should be instituted to enhance local access to fuelwood.</p>

ISSUES	RECOMMENDED STRATEGIES
<p>Developing alternatives to the biomass and income resources of GHNP</p>	<p>Though various possibilities for income generation exist, and have been described in the detailed recommendations, the focus for GHNP needs to be highlighted. For one, there is potential for ecotourism activities in GHNP and these should be developed for the benefit of the local people.</p> <p>There is also potential for wages in afforestation, terracing and other soil and water conservation works. Traditional activities of the region, including the organic cultivation of vegetables, bee keeping, and artisanal activities need to be strengthened and, wherever appropriate, developed into sources of cash income.</p>

## **7.2 DETAILED DESCRIPTION**

### **7.2.1. *Protected Area Management***

Ecodevelopment planning is a part of management planning, for any protected area, and must go hand in hand. There must be a clear interface between the management plan, specifying managerial and protection objectives and strategies within the protected area, and the eco-development plan which identifies strategies to divert human pressures from without.

Just as management without eco-development is often futile, so is eco-development without proper management. The formulation and execution of an adequate management plan is not only a prerequisite for proper eco-development, for it is the management plan which specifies the park priorities, it also ensures that the gains from eco-development in terms of reduced pressures are consolidated for the betterment of the protected area.

The initiation of an eco-development project should, therefore, be preceded by the process of drawing up a management plan and the allocation of adequate funds to implement it. The current management plan for GHNP is old and needs to be substantially re-written.

There is also a need to set up processes and institutions that can ensure the increasing involvement of the local people in the planning and management of the protected area.

## **PA Management**

GHNP is an area with comparatively few management issues. The northern and eastern boundary of the park are under permanent snow and mostly impassable. The southern boundary is along a high ridge, and almost impassable. The remaining surrounds are sparsely populated with harsh terrain and poor communications.

The major management issues and pressures are:

1. Pressure of herbs and mushroom collection.
2. Pressure of seasonal, migrant, grazing of sheep and goats.
3. Habitation within the Park
4. Occasional poaching

In addition, some of the management issues that need consideration are:

5. Promotion of appropriate tourism and interpretation in the park.
6. Research and monitoring
7. Extension and education

There are no significant pressures of the park on the people, except some crop depredation and injury to livestock by wild animals.

### **Herbs and Mushroom Collection**

This is the most destructive of the various pressures on the park. The collection of medicinal and aromatic herbs and of mushrooms (guchhis) has been going on for many years, despite the fact that there are no recorded rights permitting this, except for three villages, namely Dhar, Sharnira, and Shungcha.

It is estimated that most of these herbs have been over exploited, as is obvious from the fact that they are becoming harder and harder to find (fv, Gaston & Garson 92). Some of the species collected earlier are no longer found and might even have become locally extinct. Current estimates suggest that almost 2500 people enter the park each year for herbs and mushroom collection.

Herb collection is carried out primarily to earn a cash income, especially during the summer months. An informal estimate by the local wildlife authorities suggest that herb collectors make a total of ten lakhs of rupees a year from the sale of herbs collected from the park. But, considering the number of people entering the park, for this purpose, the total amount is likely to be three or four times higher. Obviously, the final value of these herbs, when they come to urban centres, is far more.

Any management strategy for the park must tackle the problem of herb collection on a priority basis. It is proposed to adopt a dual approach to tackling this problem.

First, income generation alternatives should be progressively developed for the herb collectors, in their villages. Detailed interviews with herb collectors establish that almost all of them would be happy to give up herb collection if they had alternative sources of income. This is mainly because it is tedious, often dangerous work involving a lot of time. Income generation activities should be funded for their villages on the condition that they give up herb and mushroom collection.

Secondly, research and development efforts should be made to see whether these herbs and mushrooms can be cultivated, naturally or through tissue culture, outside the park. Already some of the herbs have been cultivated under laboratory conditions. Field trials will be initiated and, if successful, then herb and guchi cultivation can become another income generation activity for the villagers.

#### **Grazing :**

Alex Anderson, in his forest settlement exercise, had recorded, in 1886, grazing rights for families and villages in the region. Unfortunately, these rights were never updated and, today, all the villages from where even a single family had a right are assuming that all of the villagers have grazing rights. Consequently, an estimated 25,000 to 30,000 sheep and goats graze in the park every summer.

As grazing has been going on at least since 1886, and perhaps from even before, arguably the ecosystem has become adapted to it. Therefore, there appears no urgency to stop all grazing. However, over the years the number of sheep and goats entering the park seems to have increased. It is, therefore, important to control the numbers and to ensure that grazing is restricted to the traditionally grazed areas without allowing the "thatches" (high altitude alpine pastures) to get overgrazed. The management initiatives envisaged are the following.

First, the traditional grazing areas of the proposed park should be initially notified as a sanctuary so that there is no legal impediment to allowing controlled grazing. The Tirthan valley in the south is already a part of the Tirthan sanctuary, and its status needs no change. Part of the Sainj valley in the north, which is the other traditional grazing area, should now be notified as a sanctuary.

Secondly, a process of voluntary revocation of rights should be encouraged. Villages should be persuaded to give up their grazing rights in return for ecodevelopment inputs of their choice. At present, there appears to be mixed feelings about grazing, with some villages wanting and willing to abandon it if alternative avenues of income generation were made available, and others feeling that there were no real alternatives to sheep and goat rearing. The attitude towards grazing also seems to be influenced by the location of the village. Villages with good soil and access to water, especially the north facing villages, seem less dependent on their flock. However, villages with poor land, steep slopes or water scarcity appear more dependent.

Nevertheless, it seems likely that if, initially, only those villages opted out that were already so inclined, the pressure on the park should decrease substantially. As ecodevelopment activities succeeded in these villages, perhaps other villagers should also want to follow suit.



· Thirdly, there should be research relating to the “thatches” and other alpine pastures in the park. By rotation and the use of control samples, an assessment should be made of the impact that grazing has on the biodiversity of the park.

On the basis of this, a more appropriate management strategy and a better understanding of the carrying capacity should emerge.

Fourthly, research should also be conducted to analyse the grasses and other feed available to the livestock within the park. The villagers believe that the high altitude “thatches” have some grasses which are so nutritional that it is worth taking the sheep and goats up long distances to feed on them.

In the medium and long term, research will have to be done to see whether this nutritional value, if present, can be replicated by artificial feeds so that co-operative sheep farming can be encouraged, thereby further reducing the pressure on the park.

#### **Habitation within the Park :**

There were four hamlets within the proposed park, two in the Sainj valley and two in the Jiwa Nala valley. However, the two hamlets in Jiwa Nala have now been abandoned and the people from there have shifted near two hamlets called Majharna and Pashi, outside the park.

Though the remaining two hamlets have almost no impact on the park (except on their immediate surrounds), they can, if not properly managed, become a problem in the future.

The area of these hamlets should now be in the proposed (Sainj) sanctuary and, therefore, they can be allowed to stay there if they want.

As there is a need to post some foresters or other park personnel there, and as the remoteness of these villages would make it difficult to get people to agree to live there, the existing population of these two villages, or at least a part of it, can be asked to perform this role. They can be the representatives of the wildlife authorities and keep a watch out for poachers, unauthorised graziers and herb collectors. They could also be trained to

manage a series of huts where researchers, tourists and forest staff could stay.

If and when they themselves want to shift out, a rehabilitation package can be provided for them.

### **Poaching :**

There have been reports of occasional poaching of wild animals and birds. Whereas, in a park as large and inaccessible as GHNP, it might be impossible to totally stop an occasional case of poaching, efforts have to be made to see that this does not become too frequent, or organised, commercial, poaching.

There are many animals in the park which have high commercial value for their furs and skin, or their musk (musk deer).

The monitoring network of the park should be strengthened, with the involvement of the local people as guards and members of anti-poaching squads. There should be more frequent patrolling and better communications through the provision of a wireless network.

### **Tourism and Interpretation :**

There is a potential and perhaps the desirability of promoting appropriate tourism in GHNP. Apart from providing employment opportunities to the local people, especially as tourist guides, and by providing accommodation and food to visitors, it would also benefit the park to have an increasing number of supporters committed to its conservation.

For the purpose, it is proposed to develop the existing trails so that they can be used by tourists on foot. The villages inside should be the location for visitor huts, managed by the local population.

The difficulty of the terrain would, in any case, limit the number of visitors. However, an upper limit should be prescribed to ensure that the carrying capacity is not exceeded. Tourists should only be allowed in the existing and proposed sanctuary portion of the area

At the entrance to the park an interpretation centre will be set up. As at present, no motorable road should be built to or inside the park.

#### **Research and Monitoring :**

Apart from the research activities already mentioned, related to the management of the park, GHNP should be developed into a site for research into the Western Himalayan high altitude ecosystems. For this purpose, some research facilities including a research centre outside the park, should be set up.

Organisations like the Wildlife Institute of India, the Bombay Natural History Society or the World Wide Fund for Nature should be invited to collaborate with the wildlife department in research and monitoring activities.

#### **Extension and Education :**

The people living in and around the park have a lot of knowledge about the park and its fauna and flora. It is important to record this information and make it available to visitors and to the larger world (what is the local name of plants and animals? What use are some of the plants? What changes have occurred in the area, over years? What is the religious and cultural significance of the trees, the flowers, the animals, the rocks, among other things, in the park? What myths surround it? What does it mean to them?).

Similarly, there are many things that modern science has discovered, which should be shared with them (the meaning and value of biodiversity. What are the "western" systems of classifying plants and animals? What does the area look like from a satellite? What types of rocks, stone and soil lie beneath the park? What is the significance and value of the park in the regional, national and global context?)

A dynamic system of educational exchange should be set up to learn and inform.

#### **Crop Depredation and Livestock Injury :**

Though the incidence of crop depredation is not high, with inputs through the proposed ecodevelopment activities the value of crops in the region is

expected to increase significantly. It is, therefore, important that compensation be given for crop depredation. Compensation is already being given for injury or death of livestock.

### **7.2.2. Ecodevelopment**

Each of the proposed eco-development activities are being listed below, along with their description, the basis and rationale for selecting the particular activity, which of the impacts on the protected area it is expected to mitigate, how much and what segments of the population would it cater to, its phase and duration, any pre-requisites to its success.

#### **Some General Observations**

A. The economic activities of the people living in the periphery of GHNP (see map) can be divided into two broad categories. These are:

- I. Subsistence activities
- II. Activities for earning cash

The two major economic activities which fall in the first category are agriculture and pastoralism. Of the two, the people depend upon the resources of GHNP for pastoralism. Almost everyone in the area rears sheep and goats. Between June and October, large flocks of these goats and sheep from almost every village in the area, go up to the alpine pastures in GHNP, and graze. The people find it essential to maintain at least some goats and sheep since their wool is used for making clothes as well as other items which are used during the bitterly cold winter months. Another reason for maintaining flocks of goats and sheep is that these animals are the source of valuable manure which is used in the fields. In addition, sheep and goats are assets which can be sold off for cash in times of crisis.

The major economic activities which fall in the second category listed above are extraction of medicinal herbs and aromatic plants (from hereon referred to as herb collection) and the collection of Guchis (Morchella esculenta). Both these activities are undertaken inside GHNP and, for many

of the villagers, are the only source of cash income. These activities are undertaken between the months of April and November, and constitute a major pressure on GHNP. An indirect impact of these activities is the growing scarcity of deadwood for fuel in the Park, especially in the alpine zone since the herb collectors light big bonfires to keep themselves warm.

This deadwood is also used by the Guchi collectors for lighting fires, which also pose a fire hazard.

B. The villages situated at higher altitudes of the south-facing slopes in the area attach a much greater importance to goats and sheep, as compared to other villages, especially those situated on the north-facing slopes. This is because, as a general rule, the soil on the north facing slopes is richer and better able to support agriculture, as compared to soil on the south facing slopes. Also, forest cover is richer and more extensive on the north-facing slopes as compared to the south-facing slopes.

C. At present, the local people do not have any problems arising out of GHNP having been notified, because they have so far not been restricted by the Park authorities from exercising their traditional rights and carrying out traditional activities.

Therefore, the creation of GHNP has so far not had any adverse impact on the local people.

D. In general, the people, except in Nahin and Sharan, were quite sure that ecodevelopment inputs in the area would be able to divert pressures from the Park. This is because although the income they are able to generate from extraction of Guchis and herbs is high, it involves a lot of hard labour and at times is even life threatening. They would prefer to be able to make their money in their village if they could. Also, the returns with respect to the input of labour are beginning to diminish, since the productivity of the herbs is declining due to over-exploitation.

E. The people in every village/hamlet visited, including Nahin and Sharan, had a sense of belonging towards the Park, and wanted to participate in protecting it.

F. In every single village/hamlet visited, the first demand of the people in lieu of the resources of the Park was a motorable, preferably metalled, road. When asked why they needed a road, the standard response was something like this "We want the road because we want to grow apples here. Without a road we can not do so because the cost of transportation is very high."

However, further probing seemed to suggest that the two interconnected demands of a road and apples, are not the outcome of a well thought out process of weighing the various feasible development strategies which can be used for the area. These demands are manifestations of the urge to emulate the development model being followed in the Kullu valley and other parts of Himachal Pradesh, like Shimla and Kotgarh. Unfortunately, the model of development being followed in the Kullu valley and elsewhere is neither socially just nor environmentally sound.

Therefore, even though some of the options for ecodevelopment listed below have not been suggested by the people, these options appear less destructive ecologically, socially, and culturally. Needless to say, before they can be finalised or implemented, the people of the region will have to consider and accept them.

### **7.2.3 Issues**

Impact of GHNP on the Villages<sup>8</sup>: As already mentioned, currently there is no impact of GHNP on the people except for some minor incidents of crop

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<sup>8</sup> The research team held nine meetings with the people living in the adjacent area of GHNP. These meetings were held at Tindar, Nahin, Lagcha, Pekhri, Sharan, Suchen, Shangarh, Lapah, and Neuli. Except in the case of meetings held at Suchen, Shangarh, and Neuli, the people spoken to belonged to the hamlet where the meeting was held. In case of Suchen, Shangarh, and Neuli, the people spoken to represented various hamlets in the revenue villages of Suchen, Shangarh and Shenshar respectively. A list of hamlets for each of the above three revenue villages from which people came for our meetings is given below:

damage by monkeys, bears, and porcupine, or livestock injury by jungle cat reported by the people at Nahin, and leopards and bears which was reported by people of Lagcha and Shenshar. At present, injury to livestock is compensated in cash by the Park authorities, if such injury occurs within the boundary of the Park. In case injury to livestock occurs outside the boundary of the Park, it is compensated in cash by the Territorial Wing of the Forest Department. Crop damage, however, is not presently being compensated.

Impact of Villages on GHNP: There is considerable impact of the people on GHNP. The major economic activities of people, carried out mainly during the summer months and exerting pressure on the Park are:

- A. Grazing of goats and sheep.
- B. Herb collection.
- C. Guchi collection.

Of the above, the people of Lagcha felt that for them grazing is the most important of these activities. The people of Pekhri, on the other hand, identified herb collection to be the most important. For the rest, all the three activities were almost equally important.

In addition to the above, the people of Lapah, Lagcha, and Tindar reported that they collected grass from GHNP for use during the winter months, but the importance attached to it was low.

Possible future pressures of the people on the Park could be slate quarrying, since this is already a major activity around Sainj. Also, many villages, especially on the south-facing slopes, have a shortage of fuelwood. They could pose a potential future pressure on the Park.

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Suchen , Girshaira, Narvali, Seri, Ropa, and Tungru.

Shangarh Kahna, Birashangarh, Madana, Katawali, Dagara, Patara, Dharali, and Virshangarh

Shenshar Manara, Chinairi, Khain, Tung, Taliara, Bajara, Guidi, Rehara, Damairi, Jungla, Bhalru Duar, Seri, Kainthage, Dartha, Seen, Shefari, Pachairi, Neuli, Gouli, Patara, Banogi, Bagishari, Satesh, Dharmera, Karail, Rera, and Jyalu

## **7.2.4 Other Recommendations**

### **# Human Resources Development**

The park officials and the local communities will need to be trained in park management and in ecodevelopment. Specifically, ecodevelopment beneficiaries need to be trained in specific skills for income generation.

### **# Research and Development**

Various research activities have already been identified, like the nutritional content of high altitude grass, methods of cultivating medicinal herbs found in the area, research and development related to the setting up of sheep farms, etc. Other research needs would be identified in the process of micro-planning and discussions with the local people. Total project allocation for R&D, in the IDA sponsored ecodevelopment project is over Rs. 1 crore [Anon. 1994].

### **# Awareness Programmes**

As has already been described, there has to be a sharing of information between the local villagers and outsiders. Where as the local villagers would have much to tell about the ecology and culture of the area, they might benefit from discussion regarding sustainable development strategies and regional, national and even global environmental issues.

It is proposed to organised educational and scientific expeditions (like 'jathas') to visit the villages and both learn and communicate ideas of science, culture and environment.

### **# Monitoring and Evaluation**

As already described, there should be ongoing monitoring and periodic evaluation of the management and ecodevelopment activities. The findings from such monitoring and evaluation should be used for future planning and to modify and improve the proposed activities, as required.

### **# Institutional Structures**

The men in all the hamlets/villages except Nahin, Sharan and Tindar, welcomed the idea of an ecodevelopment committee. The women said that



they would prefer this to happen through the Mahila Mandal. However, they were not averse to the idea of an ecodevelopment committee. In Tindar, the men were indifferent to whether ecodevelopment inputs should be routed through the Panchayat or through the ecodevelopment committee. However, the women of Tindar wanted the inputs to come through the Panchayat. In Nahin and Sharan, this question was not asked because the people did not agree to look at ecodevelopment inputs as alternatives to pressures on the Park, but wanted them as increments to income from the Park.

In all the hamlets/villages where the idea of an ecodevelopment committee was supported, people wanted the committee to be organised for each hamlet, except in Shangarh. The men in Shangarh wanted the committee to be formed for all villages in Shangarh Panchayat, but with representation of each of these villages. In effect, the committee would then become a parallel institution to the Panchayat but the difference would be that each village would be allowed to elect/nominate a member to the committee. The women, however, wanted the ecodevelopment inputs to come through the existing mahila mandals in the area.

One of the demands of the people in both Shangarh and Lapah was that since their panchayat would lose out on the royalty of herbs and Guchis being exported<sup>9</sup>, it should be compensated by the Government.

Some of the earnings of the communities could be shared with the Panchayats, but the details would have to be worked out between the Panchayats and the ecodevelopment committees, as and when they are set up.

At the district level, there could be a District Co-ordination Committee, chaired by the Collector. Also, as already mentioned, there is a need to set up

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<sup>9</sup> When any person wants to transport herbs or Guchis to any place outside the boundary of a panchayat whose rightholders have extracted them, he has to pay a certain amount of royalty to that panchayat. For almost all the panchayats in the area, this is a major, and sometimes the only source of revenue.

a marketing co-operative, with some young professional help, as also a tourist hospitality co-operative.

### **# Transition Period Activities**

When asked about options for the transition period, people in all the villages, except in Nahin and Sharan for reasons already mentioned above, replied that while the bridle paths were being built, they could get employed there. This would be viable for about one or two years. Meanwhile, they would be able to establish themselves in some activity with a short gestation period, for example, poultry, or cultivation of peas or potatoes.

In order to establish themselves in an activity which has a long gestation period or has a large capital outlay, they might need a loan on favourable terms from the Government.

The people in Shangarh also said that, in the interim, they would use the resources of the forests in the adjacent area of the Park to tide over the transition. There are possibilities of a JFM kind of arrangement in this case.

Also, if as many people as possible were to be employed in the Park as soon as possible, it would help.

In addition, some of the activities like mixed fuel and fodder plantations, people's nurseries, joint forest management, and the building up of irrigation channels, all of which have a wage labour component, would help the people to tide over the transition period.

### **# Organisation and Management**

#### **Planning**

Ecodevelopment planning is seen as a participatory and ongoing process. Essentially, micro-level site specific plans have to be evolved with the active participation of the local communities. In fact, the objective is to encourage the local communities to plan for themselves, with the availability of macro level data and other inputs that they might want from research institutions and the government.

Also, it is recognised that, given the experimental nature of the ecodevelopment approach and the value of flexibility, the planning process should be an ongoing one where a minimum of long and medium term objectives and strategies are identified at the start, and the detailed planning is done as the activities develop.

There are two phases of planning. There is the preliminary, indicative, planning being carried out prior to and for project appraisal. The second phase of planning would be the detailed, ongoing, planning, which should commence at the initiation of the project activities. This should be done by planning teams initially of representatives of the park authority (Range officers), and representatives of NGOs. They should be trained in participatory and rapid rural appraisal techniques, in interpersonal communication skills and in elements of ecodevelopment and wildlife management planning. It should be their responsibility to initiate the process of ecodevelopment planning by starting interactions with the local communities. These teams should, in the process, identify village and community institutions which can increasingly take on the responsibility of ecodevelopment planning and implementation for their own area. The local NGOs and the local wildlife officials should also be continually involved in the process, in so far as they are required by the village community.

Efforts should be made to include those members of the local community who show an interest and penchant for the work. It is hoped that, within a year, the planning team should have many members of the local community who can continue the task of village interactions independently or with minimal help from the local NGOs.

This planning team should be supported by specialists, on call, who could be requested to give their inputs on specialised issues, like poultry development or water harvesting, etc. Where a particular expertise is going to be in high demand (for example vegetable and fruit farming in GHNP and poultry development in KMTR), the concerned expert can be taken on

deputation or otherwise attached to the park for the first year or two, depending on the requirement.

#### Human Resources Development

Ecodevelopment and management training should be organised by professional institutions and NGOs like the Wildlife Institute of India and the Society for Promotion of Wastelands Development. State Government and Central Government extension services, as well as NGOs with the relevant expertise, will have to be identified for training in income generation skills.

Specialised NGOs would have to be identified to set up educational exchange activities, as described earlier.

#### **# Policy Issues**

- i) The Wild Life (Protection) Act, as amended in 1991, allows the conditional recognition of rights, and permits sustainable levels of grazing inside a sanctuary. It also permits, in a sanctuary and a national park, activities related to the management of the park. Ecodevelopment must be seen as a strategy to help uphold the Act by providing viable alternative sources of biomass and income to the people using the protected area in violation of the Act.

Off the shelf, ready to implement, income generation schemes should be provided to tide over the loss of income during the transitional phase, before the various sustainable income generation activities get established and begin to give returns. Similarly, alternate arrangements should be made for any biomass requirement that is denied because of the application of the Act.

- ii) Appropriate provisions of the Environment (Protection) Act, 1986, should be invoked, along with provisions of other, relevant, State Acts, to ensure that the surrounds of protected areas including the project area are not subjected to any unsustainable activities. The provisions of these acts should also be invoked, where necessary, to assist in establishing a sustainable development model in the areas and in

ensuring that the economic benefits from the protected area and the ecodevelopment project (like earnings from tourism or employment in jobs and as wage labour) go first to the local communities who have suffered deprivations due to the setting up of the protected area.

- iii) The State Government should allow the joint participatory management of forests in and around the project area in order to promote the protection of these forests and the sharing of benefits.
- iv) The state Governments should attempt to assist in providing a market for the products of ecodevelopment income generation activities by ensuring, as far as possible, that government gives preference to them in its own purchases.
- v) The State Government should recruit women forest guards and other women staff, for management and ecodevelopment work, both in order to provide an opportunity to the women to get employment and making interaction with women members of the community more effective.
- vi) The State Government should try and channelise other development schemes available to the project area in a way that these are complementary to the ecodevelopment project.
- vii) The State Government should provide adequate compensation, as per their rules, for crop damage or livestock and human injury or death, by wild animals, in the periphery of the protected area and in the project area.
- viii) The State Government should ensure a process of participatory planning, as proposed.

ANNEXURE 1: ADJACENT AREA VILLAGE SCHEDULE

Schedule No. : HP/N/GRE

Interviewer : Recorder :  
Place:  
Start time:  
Date:

Name of the village/hamlet/cluster: \_\_\_\_\_

Legal status: Revenue/Forest/Other (define) \_\_\_\_\_

Panchayat \_\_\_\_\_ Tehsil \_\_\_\_\_ PO \_\_\_\_\_

Police station \_\_\_\_\_ Sub-Tehsil \_\_\_\_\_

Designation, Name, Age, and Sex of Person(s) talked to: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I. DESCRIPTION OF THE VILLAGE AND SURROUNDS

Visual description of the village by the team. Also ask the villagers to draw a map of the village and its surrounding areas. Take pictures of the village and its surrounds.

Visual Description \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1. How much area does the village occupy?

\_\_\_\_\_ settlement \_\_\_\_\_ agricultural land

\_\_\_\_\_ fallow land \_\_\_\_\_ grass land

\_\_\_\_\_ forest land \_\_\_\_\_ water bodies

\_\_\_\_\_ others(specify)

Total \_\_\_\_\_ (specify/define units)

2. Population size: \_\_\_\_\_ individuals

\_\_\_\_\_ families

\_\_\_\_\_ households

\_\_\_\_\_ adults

[Individuals or families sharing a kitchen form a household]

## II. VALUES AND OBJECTIVES OF THE PARK

3. Were you aware of the existence of the national park in your area? \_\_\_\_\_

4. ~~4.~~ If yes, do you know when, and for what objective(s) it was notified? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. Do you think a park should have been notified in this area? Is it in any way useful to you? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

6. What according to you should have been the objectives or the park? \_\_\_\_\_

\_\_\_\_\_

7. Were you consulted before the park was established? If so, how and when? \_\_\_\_\_

8. What is the significance of caste or religion in the economic status of communities in the village?

Religion	Caste/ Sub-group (give no. of households in brackets)	Occupation	Land holding	Livestock holding [Cows(C), Buffaloes (B) Goats (G), Sheep (S), Oxen (OX), Others (OT)]	Number of households
Hindu					
Others (specify)					



9. What are the important occupations in the village?

[illegible]

10. Are there any skills which are special/traditional?

Type of skill	Religion/ Caste	Gender/ Age	Types of products/ services	Current Domestic / Commercial Use
Weaving	_____	_____	_____	_____
Spinning	_____	_____	_____	_____
Wood work	_____	_____	_____	_____
Medicine	_____	_____	_____	_____
Pottery	_____	_____	_____	_____
Basketry	_____	_____	_____	_____
Stone/ Metal	_____	_____	_____	_____
Rope making	_____	_____	_____	_____
Other skill (specify)	_____	_____	_____	_____
	_____	_____	_____	_____

11. Land Holding (In hectares)	Number of village households	Outsiders if any
Landless	_____	_____
(below 4 Bighas)	_____	_____
(4 to 8 Bighas)	_____	_____
(8 to 16 bighas)	_____	_____
(16 to 40 Bighas)	_____	_____
(above 40 Bighas)	_____	_____

\* Add conversion of bighas in acres/ hectares after asking the villagers

12. Livestock holding in village?

Type of animal	Number of households having no goats or sheep	Number of households owning less than 10 goats or sheep	Number of households owning between 11 and 20 goats or sheep	Number of households owning between 21 and 40 goats or sheep	Number of households owning above 41 goats or sheep
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Goats \_\_\_\_\_

Sheep \_\_\_\_\_

Type of animal	Number of households having no cows	Number of households owning less than 5 cows	Number of households owning between 6 and 10 cows	Number of households owning between 11 and 20 cows	Number of households owning above 21 cows
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Cows \_\_\_\_\_

Type of animal	Number of households having no other animals	Number of households owning other animals
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Others (specify) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### III. PRESSURES ON THE PARK BY VILLAGERS

[The activities/occupations which are, or might in the future become, pressures on the park include Grazing, Herb collection, MFP collection, etc]

#### **GRAZING :**

##### Legal Status

13. Do the villagers have a right to graze in this area ? If so how are they in possession of their rights (Individually, family wise, or village wise)?

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If Y: a. Where recorded \_\_\_\_\_

b. When issued \_\_\_\_\_

c. Period of validity \_\_\_\_\_

d. Where in the park/other area can the holder go to \_\_\_\_\_

e. For how long can he go \_\_\_\_\_

f. How many heads of livestock can he bring \_\_\_\_\_

g. Other details \_\_\_\_\_

If N: a. How do the villagers enter the Park? \_\_\_\_\_

14. How are these rights transferred/inherited? \_\_\_\_\_

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15. Can such rights be bought or sold by the holder?

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16. Have the villagers bought any rights or know someone who might have bought or sold a right? What were the terms of the transaction?

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17. Has there been any increase/decrease in number of livestock owned? Yes. \_\_\_ No \_\_\_

a. If yes, then give reasons (Reproduction, Trade, Inheritance, Disease, Predation, Trade, Others)?

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b. When did these changes take place?

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## ECONOMICS:-

### 18. Turnover [Previous year {1993}]

<u>Goat</u>	Quantity		Rate
	Used	Sold	
Milk	_____	_____	_____
Wool	_____	_____	_____
Meat	_____	_____	_____
Male Kid	_____	_____	_____
Female Kid	_____	_____	_____
Male Adult	_____	_____	_____
Female Adult	_____	_____	_____
<u>Sheep</u>			
Milk	_____	_____	_____
Wool	_____	_____	_____
Meat	_____	_____	_____
Male lamb	_____	_____	_____
Female lamb	_____	_____	_____
Male Adult	_____	_____	_____
Female Adult	_____	_____	_____

19. What is the system of payment for grazing livestock of other villages? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

20. What is the system of payment if you keep your flock overnight in somebody's field en route? \_\_\_\_\_



24. Has the route which is taken been changed? Yes    No   

If yes then why and since when? \_\_\_\_\_

If not, then what is the basis of following this route? \_\_\_\_\_

## PRESSURE ON PARK

25. What is the per day (or any other unit) consumption of fodder by the goats and sheep in your flock?

	Goats	Sheep
Grasses		
leaves		
others		

26. What are the other resources used by the respondent in the Park?

Resource	Quantity (specify units and time period)
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Fuelwood

NWFP

Others \_\_\_\_\_

27. Have there been any changes in the availability of resources used from the Park?  
Since when? \_\_\_\_\_



## MONITORING AND REGULATION

28. Have the villagers been stopped from:-

a. Using their traditional route? Yes\_\_\_\_ No\_\_\_\_

If yes, then when and where? \_\_\_\_\_

b. Grazing their flock in a certain area? Yes\_\_\_\_ No\_\_\_\_

If yes, then when and where? \_\_\_\_\_

c. Taking in more than a certain number of livestock into the park?

Yes\_\_\_\_ No\_\_\_\_ If yes, then when and how much? \_\_\_\_\_

d. Taking livestock during a certain time of the year into the park?

Yes\_\_\_\_ No\_\_\_\_ If yes, then when and for which Period? \_\_\_\_\_

e. Any other restrictions apart from the above? \_\_\_\_\_

f. Have the villagers been checked by the authorities for the number of livestock they take into the Park? Yes\_\_\_\_ No\_\_\_\_

If yes, then where and when? \_\_\_\_\_

g. Any other impacts of the Park? \_\_\_\_\_

## HISTORY

29. How many people are currently engaged in migratory grazing? Have the number of people who do migratory grazing increased or decreased over the past few years? If so, what are the reasons for the above if any?

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30. Has there been a change in the areas over which livestock is being grazed? If so, what are the reasons for the above? \_\_\_\_\_

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31. Has there been any change in the quantum of livestock being grazed? If so, what are the reasons for the above? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

HERB COLLECTION

32. Turnover [Previous Season {1993}]

Herb	Quantity	Price
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

33. Costs What were the total costs incurred on herb collection in the previous season {1993}? \_\_\_\_\_

\_\_\_\_\_

34. Which are the markets to which the villagers supply herbs?

\_\_\_\_\_

AREAS OF HERBS COLLECTION

35. Which entry points do the villagers use to go to which locations in the Park?

\_\_\_\_\_

36.        Location        Herbs extracted [Previous season {1991}]


#### HISTORY

37.        Since when have the villagers been involved in herb collection?

\_\_\_\_\_

#### MONITORING AND REGULATION

38.        Have the villagers been stopped from:-

a.        Collecting herbs in a certain area? Yes\_\_\_\_ No\_\_\_\_

          If yes, then where? \_\_\_\_\_

b.        Collecting more than a certain quantity of herbs? Yes\_\_\_\_ No\_\_\_\_

          If yes, then how much? \_\_\_\_\_

c.        Collecting a certain herb? Yes\_\_\_\_ No\_\_\_\_

          If yes, then which? \_\_\_\_\_

d.        Collecting herbs during a certain time of the year? Yes\_\_\_\_ No\_\_\_\_

          If yes, then which time? \_\_\_\_\_

e.        Other restrictions if any? \_\_\_\_\_

39.        Have the villagers been checked by authorities for a right/permit while coming in to the Park? Yes\_\_\_\_ No\_\_\_\_

          a. If yes, then where? \_\_\_\_\_



#### 45. ECOLOGICAL STATUS OF HERBS

[illegible]

- A = Abundant; R = Rare; E = Extinct

## ECONOMICS

46. Describe the economic chain starting from the herb collector leading upto the final buyer and the monetary dealings known to the villagers

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## HISTORY

47. How many people are engaged in herb collection: \_\_\_\_\_

Has the number increased or decreased over the years?

\_\_\_\_\_

Reason for increase or decrease \_\_\_\_\_

48. Has there been a change in the areas of herb extraction \_\_\_\_\_

Since When? \_\_\_\_\_

What are the reasons for the above if any? \_\_\_\_\_

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49. Has there been any change in the quantum of herbs being extracted?

Since when? \_\_\_\_\_

What are the reasons? \_\_\_\_\_

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50. Since when has herb collection become your main income generating activity ?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

OTHER ACTIVITIES/SOURCES OF INCOME

51. What is the respondents annual economic activity cycle?

Months of Year	Activities
March-April/Chait	_____
April-May/Baisakh	_____
May-June/Jaith	_____
June-July/Aashaad	_____
July-August/Sawan	_____
Aug.-Sept./Bhadon	_____
Sept.-Oct./Sauj	_____
Oct.-Nov./Kartik	_____
Nov.-Dec./Mankshar	_____
Dec.-Jan./Poh	_____
Jan.-Feb./Maagh	_____
Feb.-March/Phagun	_____

52. Of the above, what are the respondents' cash income generating activities besides Grazing and Herb collection?

Activities	Income
_____	_____
_____	_____
_____	_____

## AGRICULTURE

53. Crops grown

Crop yields

- |            |       |
|------------|-------|
| i. _____   | _____ |
| ii. _____  | _____ |
| iii. _____ | _____ |
| iv. _____  | _____ |
| v. _____   | _____ |
| vi. _____  | _____ |
| vii. _____ | _____ |

54. Changes in crop yields if any? Also specify number of years over which changes in crop yields may have taken place

Crops grown earlier

Crops grown presently

Period of change

- |            |       |       |
|------------|-------|-------|
| i. _____   | _____ | _____ |
| ii. _____  | _____ | _____ |
| iii. _____ | _____ | _____ |
| iv. _____  | _____ | _____ |
| v. _____   | _____ | _____ |
| vi. _____  | _____ | _____ |
| vii. _____ | _____ | _____ |

55. a) Are crops damaged by wild animals in your village? Yes\_\_\_\_ No\_\_\_\_

If yes, then what is the extent of damage? \_\_\_\_\_

b) Has there been any change in crop damage in the past few years(specify years\_\_\_\_\_)? Yes\_\_\_\_ No\_\_\_\_

c) Is compensation for crop damage asked for? Yes\_\_\_\_ No\_\_\_\_

Is it given? Yes\_\_\_\_ No\_\_\_\_ If yes, then how much? \_\_\_\_\_

If not, then why not (details)? \_\_\_\_\_



56. What steps are taken for protection of crops in the village?

1. Making Noise \_\_\_\_\_ 2. Bursting crackers \_\_\_\_\_  
3. Firing blanks \_\_\_\_\_ 4. Attacking animals \_\_\_\_\_  
5. Others \_\_\_\_\_

57. Have any restrictions been imposed on the above? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, then give details \_\_\_\_\_  
\_\_\_\_\_

58. What steps if any, would you like to take for protection of crops, but are unable to, because of restrictions by the Park authorities?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

59. Was the village informed or consulted before the above restrictions were applied?  
Yes \_\_\_\_\_ No \_\_\_\_\_

60. Which species are responsible for the loss of crops?

- a Monkeys \_\_\_\_\_ b Bears \_\_\_\_\_ c Pheasants \_\_\_\_\_ d Porcupines \_\_\_\_\_  
e Others \_\_\_\_\_

61. Which crops if any, are favoured by the animals? \_\_\_\_\_  
\_\_\_\_\_

#### IV. PROBLEMS AND POTENTIALS

62. What is the major problems which the village is facing? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

63. What are seen as solutions to these problems? \_\_\_\_\_

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64. If the activities of the village taking place in the Park are to be phased out, what alternatives could be possible (discuss JFM)?

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65. Is there an acknowledged leader in your village or panchayat?

Yes \_\_\_\_\_ No \_\_\_\_\_

Is there any women's representation in the Gram Panchayat, Panchayat samiti, and Zila parishads?

Yes \_\_\_\_\_ No \_\_\_\_\_ Name \_\_\_\_\_

66. Are there any local NGO's/NGI's working in your village?

Yes \_\_\_\_\_ No \_\_\_\_\_

67. Do people feel confident about cooperating with the government/forest department?

Yes \_\_\_\_\_ No \_\_\_\_\_

68. Can people cooperate with each other in the village and with other villages despite differences of caste and economic status?

If yes, then please give details? \_\_\_\_\_

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69. Is there any land around your village which can be used to provide your or other village's fuelwood and fodder requirements? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, where is this land located? \_\_\_\_\_

How much is the area ? \_\_\_\_\_

What is its legal status? \_\_\_\_\_

Who is using this land at the moment? \_\_\_\_\_

What kind of vegetation does this land support at the moment?

\_\_\_\_\_

Is there any root stock? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, is it Heavy \_\_\_\_\_ Moderate \_\_\_\_\_ Light \_\_\_\_\_

and what are the species \_\_\_\_\_

What steps can be taken to regenerate this land? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

70. Is it possible to make an activity like agriculture or pastoralism more productive (hybrid seeds or cattle) so that needs from the Park/Forests can be minimised?

\_\_\_\_\_

\_\_\_\_\_

71. What are the comparative merits or demerits of hybrid and traditional seeds and cattle?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

72. Are there any traditional occupations which can be taken up as full time income earning activities (e.g.artisanal activities?)

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73. What other alternatives (eg smokeless chulas, biogas plants, solar cookers etc) can be considered, and may be viable?\_\_\_\_\_

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74. Have there been any traditional practices for the protection and regeneration of herbs and grazing lands? If yes please describe\_\_\_\_\_

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75. Are these methods still in practice? If not, why have they been terminated?

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76. Is the respondent aware of any attempts to artificially grow herbs?

- a. Herb(s) \_\_\_\_\_
- b. When \_\_\_\_\_
- c. Where \_\_\_\_\_
- d. By whom \_\_\_\_\_
- e. Results/Present status \_\_\_\_\_

End time:

ANNEXURE 2: HOUSEHOLD SCHEDULE

Schedule No. : HP/N/GRE

Interviewer : Recorder :

Place:

Start time:

Date:

Name of the village: \_\_\_\_\_ Hamlet: \_\_\_\_\_

Name of head of household: \_\_\_\_\_

Religion \_\_\_\_\_ Caste \_\_\_\_\_

Person spoken to: \_\_\_\_\_

I. DESCRIPTION OF THE HOUSEHOLD

1. Household size: \_\_\_\_\_ individuals

\_\_\_\_\_ adults

\_\_\_\_\_ families

[Individuals or families sharing a kitchen form a household]

2. Land Holding (In hectares)	Livestock holding [Cows-C, Buffaloes-B, Sheep-S, Goat-G, Others-O]	House ownership (no. of houses as well as other structures owned) specify kuccha, pucca structures and joint ownership	Other assets [tractors trucks jeep others]
_____	_____	_____	_____
_____	_____	_____	_____

\* Add conversion of bighas in acres/ hectares after asking the villagers

Give main occupations of the household:

Agriculture \_\_\_\_\_ Herb Collection \_\_\_\_\_

Others \_\_\_\_\_  
(specify)

Yearly income of household (in Rupees) -  
(specify if more than one source of income)

3. Are there any skills which are special/traditional?

Type of skill	Gender/ Age	Types of products/ services	Current Domestic / Commercial Use
Weaving	_____	_____	_____
Spinning	_____	_____	_____
Wood work	_____	_____	_____
Medicine	_____	_____	_____
Pottery	_____	_____	_____
Basketry	_____	_____	_____
Stone/Metal	_____	_____	_____
Rope making	_____	_____	_____
Other skill (specify)	_____	_____	_____
	_____	_____	_____

## II LEGAL STATUS

4. Are you the right holders of this area ? If so how are you in possession of these rights (Individually, family wise, or village wise)?

\_\_\_\_\_

\_\_\_\_\_

If Y: a. Where recorded \_\_\_\_\_

b. When issued \_\_\_\_\_

c. Period of validity \_\_\_\_\_

d. Where in the park/other area can the holder go to \_\_\_\_\_

e. For how long can he go \_\_\_\_\_

f. How many heads of livestock can he bring \_\_\_\_\_

g. Other details \_\_\_\_\_

If N: a. How does the respondent enter the Park? \_\_\_\_\_

5. How are these rights transferred/inherited? \_\_\_\_\_

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6. Can such rights be bought or sold by the holder?

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7. Have the villagers bought any rights or know someone who might have bought or sold a right? What were the terms of the transaction? \_\_\_\_\_

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### III. VALUES AND OBJECTIVES OF THE PARK

8. Are you aware of the existence of the national park in your area? \_\_\_\_\_

9. If yes, do you know when, and for what objective(s) it was notified? \_\_\_\_\_

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---

10. Do you think a park should have been notified in this area? Is it in any way useful to you? \_\_\_\_\_

---



11. What according to you should have been the objectives of the park? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

12. Were you consulted before the park was established? If so, how and when? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## II PRESSURES ON THE PARK

[The activities/occupations which are, or might in the future become, pressures on the park include Grazing, Herb collection, MFP collection, etc.]

### GRAZING

13. What is the per day (or any other unit) consumption of fodder by the goats and sheep in your flock?

Goats

Sheep

Grasses \_\_\_\_\_

leaves \_\_\_\_\_

others \_\_\_\_\_

14. Do you collect fodder when in the Park? Yes\_\_\_\_ No\_\_\_\_

If yes then how much?

Goats

Sheep

Grasses \_\_\_\_\_

leaves \_\_\_\_\_

others \_\_\_\_\_

15. What are the other resources used by you in the Park?

Resource      Quantity (specify units and time period)

Fuelwood \_\_\_\_\_

\_\_\_\_\_

NWFP \_\_\_\_\_

\_\_\_\_\_

Others \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

16. Have there been any changes in the availability of resources used from the Park?  
Since when? \_\_\_\_\_

\_\_\_\_\_

#### MONITORING AND REGULATION

17. Has the graziers been stopped from:-

a. Using the traditional route? Yes \_\_\_\_ No \_\_\_\_

If yes, then when and where? \_\_\_\_\_

b. Grazing the flock in a certain area? Yes \_\_\_\_ No \_\_\_\_

If yes, then when and where? \_\_\_\_\_

c. Taking in more than a certain number of livestock into the park? Yes \_\_\_\_ No \_\_\_\_

If yes, then when and how much? \_\_\_\_\_

d. Taking livestock during a certain time of the year into the park? Yes \_\_\_\_ No \_\_\_\_

If yes, then when and for which period? \_\_\_\_\_

e. Any other restrictions apart from the above? \_\_\_\_\_

f. Has the respondent been checked by the authorities for the number of livestock he takes into the Park? Yes\_\_\_\_ No\_\_\_\_

If yes, then where and when? \_\_\_\_\_

g. Any other impacts of the Park? \_\_\_\_\_

#### AREAS OF HERBS COLLECTION

18. Which entry and exit points does the respondent use to go to which locations in the Park?

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19.      Location      Herbs extracted [Previous season {1991}]

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

#### HISTORY

20. Since when has the respondent been involved in herb collection?

---

#### MONITORING AND REGULATION

21. Has the respondent been stopped from:-

a. Collecting herbs in a certain area? Yes\_\_\_\_ No\_\_\_\_

If yes, then where? \_\_\_\_\_

b. Collecting more than a certain quantity of herbs? Yes\_\_\_\_ No\_\_\_\_

If yes, then how much? \_\_\_\_\_

c. Collecting a certain herb? Yes \_\_\_\_ No \_\_\_\_

If yes, then which? \_\_\_\_\_

d. Collecting herbs during a certain time of the year? Yes \_\_\_\_ No \_\_\_\_

If yes, then which time? \_\_\_\_\_

e. Other restrictions if any? \_\_\_\_\_

22. Has the respondent been checked by authorities for a right/permit while coming in to the Park? Yes \_\_\_\_ No \_\_\_\_

a. If yes, then where? \_\_\_\_\_

23. Has the respondent been checked by authorities for the kind of herbs and the quantities they are carrying out of the Park? Yes \_\_\_\_ No \_\_\_\_

b. If yes, then where? \_\_\_\_\_

24. What proportion of the respondents cash income comes from herb collection?

\_\_\_\_\_  
\_\_\_\_\_

#### AGRICULTURE

25.                      Crops grown                      Crop yields

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

v. \_\_\_\_\_

26. Changes in crop yields if any? Also specify number of years over which changes in crop yields may have taken place \_\_\_\_\_

Crops grown earlier

Crops grown presently

i. \_\_\_\_\_

ii. \_\_\_\_\_

27. a) Are your crops damaged by wild animals? Yes\_\_\_ No\_\_\_

If yes, then what is the extent of damage? \_\_\_\_\_

b) Has there been any change in crop damage in the past few years (specify years \_\_\_\_\_)? Yes\_\_\_ No\_\_\_

c) Is compensation for crop damage asked for? Yes\_\_\_ No\_\_\_

Is it given? Yes\_\_\_ No\_\_\_ If yes, then how much? \_\_\_\_\_

If not, then why not (details)? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

28. What steps are taken for protection of crops in the village?

1. Making Noise\_\_\_\_\_ 2. Bursting crackers\_\_\_\_\_

3. Firing blanks\_\_\_\_\_ 4. Attacking animals\_\_\_\_\_

5. Others\_\_\_\_\_

29. Have any restrictions been imposed on the above? Yes\_\_\_ No\_\_\_

If yes, then give details\_\_\_\_\_

\_\_\_\_\_

30. What steps if any, would you like to take for protection of crops, but are unable to, because of restrictions by the Park authorities?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

31. Was the village informed or consulted before the above restrictions were applied?  
Yes\_\_\_ No\_\_\_

32. Which species are responsible for the loss of crops?

a Monkeys \_\_\_\_\_ b Bears \_\_\_\_\_ c Pheasants \_\_\_\_\_

d Porcupines \_\_\_\_\_ e Others \_\_\_\_\_

33. Which crops if any, are favoured by the animals? \_\_\_\_\_

\_\_\_\_\_

### PROBLEMS AND POTENTIALS

34. What is the major problems which the village is facing? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

35. What are seen as solutions to these problems? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

36. If the activities of the village taking place in the Park are to be phased out, what alternatives could be possible (discuss JFM)?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

37. Can people cooperate with each other in the village and with other villages despite differences of caste and economic status? Has this ever been done before? Yes \_\_\_\_\_  
No \_\_\_\_\_

If yes, then please give details? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

38. Is it possible to make an activity like agriculture or pastoralism more productive (hybrid seeds or cattle) so that needs from the Park/Forests can be minimised? What are the comparative merits or demerits of hybrid and traditional seeds and cattle? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

End time:

## ANNEXURE 3: ADJACENT AREA HOUSEHOLD SCHEDULE

Schedule No. : HP/N/GRE

Interviewer : Recorder :

Place:

Start time:

Date:

Name of the village: \_\_\_\_\_ Hamlet: \_\_\_\_\_

Name of head of household: \_\_\_\_\_

Religion \_\_\_\_\_ Caste \_\_\_\_\_

Person spoken to: \_\_\_\_\_

### I. DESCRIPTION OF THE HOUSEHOLD

1. Household size: \_\_\_\_\_ individuals

\_\_\_\_\_ adults

\_\_\_\_\_ families

[Individuals or families sharing a kitchen form a household]

2. Land Holding (in hectares)	Livestock holding [Cows-C, Buffaloes-B, Sheep-S, Goat-G, Others-O]	House ownership (no. of houses as well as other structures owned) specify kuccha and pucca structures and joint ownership	Other assets [tractors trucks jeep others]
----------------------------------	---	---	--

\* Add conversion of bighas in acres/ hectares after asking the villagers

3. Give main occupations of the household:

Agriculture \_\_\_\_\_ Herb Collection \_\_\_\_\_ Pastoralism \_\_\_\_\_

Others \_\_\_\_\_ Types of products /services \_\_\_\_\_  
(give details)

Current domestic /commercial use \_\_\_\_\_

Yearly income of household (in Rupees) \_\_\_\_\_  
(specify if more than one source of income)



## II. VALUES AND OBJECTIVES OF THE PARK

4. Are you aware of the existence of the national park in your area? \_\_\_\_\_
5. If yes, do you know when, and for what objective(s) it was notified? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. Do you think a park should have been notified in this area? Is it in any way useful to you? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. What according to you should have been the objectives of the park? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
8. Were you consulted before the park was established? If so, how and when? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### III PRESSURES ON THE PARK

[The activities/occupations which are, or might in the future become, pressures on the park include Grazing, Herb collection, MFP collection, etc.]

#### GRAZING AND HERB COLLECTION:

Legal Status

9. Do you have the right to graze inside the park? If so how are you in possession of these rights (Individually, family wise)?

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If Y: a. Where recorded \_\_\_\_\_

c

b. When issued \_\_\_\_\_

c. Period of validity: \_\_\_\_\_

d. Where in the park/other area can the holder go to \_\_\_\_\_

e. For how long can he go \_\_\_\_\_

f. How many heads of livestock can he bring \_\_\_\_\_

g. Other details \_\_\_\_\_

If N: a. How does the respondent enter the Park? \_\_\_\_\_

10. How are these rights transferred/inherited? \_\_\_\_\_

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11. Can such rights be bought or sold by the holder?

---

---

12. Has the respondent bought any rights or knows someone who might have bought or sold a right? What were the terms of the transaction?

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---

13. What is the per day (or any other unit) consumption of fodder by the goats and sheep in your flock?

Goats

Sheep

Grasses 

---

leaves 

---

others 

---

14. What are the other resources used by you in the Park when you have gone there to graze livestock ?

Resource      Quantity (specify units and time period)

Fuelwood 

---

---

NWFP 

---

---

Others 

---

---



---

15. Have there been any changes in the availability of resources used from the Park? Since when? 

---

---

16. Which entry and exit points does the respondent use to go to which locations in the Park?

Grazing

Herb Collection

_____	_____
_____	_____

17. Location:    Grazing    \_\_\_\_\_  
                         Herb Collection \_\_\_\_\_  
                         Herbs Collected \_\_\_\_\_

HISTORY

18. Since when has the respondent been involved in

Herb collection \_\_\_\_\_ Grazing \_\_\_\_\_

MONITORING AND REGULATION : Grazing

19. Has the graziers been stopped from:-

a. Using the traditional route? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, then when and where? \_\_\_\_\_

b. Grazing the flock in a certain area? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, then when and where? \_\_\_\_\_

c. Taking in more than a certain number of livestock into the park? Yes \_\_\_\_\_

No \_\_\_\_\_ If yes, then when and how much? \_\_\_\_\_

d. Taking livestock during a certain time of the year into the park? Yes \_\_\_\_\_

No \_\_\_\_\_ If yes, then when and for which period? \_\_\_\_\_

e. Any other restrictions apart from the above? \_\_\_\_\_

f. Has the respondent been checked by the authorities for the number of livestock taken into the Park? Yes\_\_\_\_ No\_\_\_\_

If yes, then where and when?\_\_\_\_\_

g. Any other impacts of the Park?\_\_\_\_\_

#### MONITORING AND REGULATION : Herb Collection

20. Has the respondent been stopped from:-

a. Collecting herbs in a certain area? Yes\_\_\_\_ No\_\_\_\_

If yes, then where?\_\_\_\_\_ Since when?\_\_\_\_\_

b. Collecting more than a certain quantity of herbs? Yes\_\_\_\_ No\_\_\_\_

If yes, then how much?\_\_\_\_\_ Since when?\_\_\_\_\_

c. Collecting a certain herb? Yes\_\_\_\_ No\_\_\_\_

If yes, then which?\_\_\_\_\_ Since when?\_\_\_\_\_

d. Collecting herbs during a certain time of the year? Yes\_\_\_\_ No\_\_\_\_

If yes, then which year?\_\_\_\_\_

e. Other restrictions if any?\_\_\_\_\_

21. Has the respondent been checked by authorities for a right/permit while coming in to the Park? Yes\_\_\_\_ No\_\_\_\_

a. If yes, then where?\_\_\_\_\_ b. Since when \_\_\_\_\_

22. Has the respondent been checked by authorities for the kind of herbs and the quantities they are carrying out of the Park? Yes\_\_\_\_ No\_\_\_\_

a. If yes, then where?\_\_\_\_\_ b. Since when \_\_\_\_\_

23. What proportion of the respondents cash income comes from herb collection?

\_\_\_\_\_

## AGRICULTURE

24. Crops grown

Crop yields

- |      |       |       |
|------|-------|-------|
| i.   | _____ | _____ |
| ii.  | _____ | _____ |
| iii. | _____ | _____ |
| iv.  | _____ | _____ |
| vii. | _____ | _____ |

25. Changes in crop yields if any? Also specify number of years over which changes in crop yields may have taken place \_\_\_\_\_

Crops grown earlier

Crops grown presently

- |      |       |       |
|------|-------|-------|
| i.   | _____ | _____ |
| ii.  | _____ | _____ |
| iii. | _____ | _____ |
| iv.  | _____ | _____ |
| v.   | _____ | _____ |
| vi.  | _____ | _____ |
| vii. | _____ | _____ |

26. Are your crops damaged by wild animals? Yes \_\_\_ No \_\_\_

If yes, then what is the extent of damage? \_\_\_\_\_

27. Which species are responsible for the loss of crops?

a Monkeys \_\_\_\_\_ b Bears \_\_\_\_\_ c Pheasants \_\_\_\_\_

d Porcupines \_\_\_\_\_ e Others \_\_\_\_\_

28. Which crops if any, are favoured by the animals? \_\_\_\_\_

29. a) Has there been any change in crop damage in the past few years (specify years \_\_\_\_\_)? Yes \_\_\_ No \_\_\_

b) Is compensation for crop damage asked for? Yes\_\_\_\_ No\_\_\_\_

Is it given? Yes\_\_\_\_ No\_\_\_\_ If yes, then how much?\_\_\_\_\_

If not, then why not (details)?\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

30. What steps are taken for protection of crops in the village?

1. Making Noise\_\_\_\_\_ 2. Bursting crackers\_\_\_\_\_

3. Firing blanks\_\_\_\_\_ 4. Attacking animals\_\_\_\_\_

5. Others\_\_\_\_\_

31. Have any restrictions been imposed on the above? Yes\_\_\_\_ No\_\_\_\_

If yes, then give details\_\_\_\_\_

\_\_\_\_\_

32. What steps if any, would you like to take for protection of crops, but are unable to, because of restrictions by the Park authorities?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

33. Was the village informed or consulted before the above restrictions were applied? Yes\_\_\_\_ No\_\_\_\_

#### PROBLEMS AND POTENTIALS

34. What is the major problems which the village is facing?\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

35. What are seen as solutions to these problems? \_\_\_\_\_

---

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---

---

36. If the activities of the village taking place in the Park are to be phased out, what alternatives could be possible (discuss JFM)? \_\_\_\_\_

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---

---

---

37. Can people cooperate with each other in the village and with other villages despite differences of caste and economic status? Has this ever been done before?  
Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, then please give details? \_\_\_\_\_

---

---

---

38. Is it possible to make an activity like agriculture or pastoralism more productive (hybrid seeds or cattle) so that needs from the Park/Forests can be minimised? What are the comparative merits or demerits of hybrid and traditional seeds and cattle? \_\_\_\_\_

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End time:



ANNEXURE 4: GRAZIER'S SCHEDULE

Date :  
Place:  
Interviewer:  
Start Time:

Schedule No:  
  
Recorder:

Name	Age	Religion/ caste	Village	Panchayat	Tehsil	Kothi/Phati

2. Remaining livestock

Village/Panchayat/ Tehsil	Sheep	Goat	Others (specify)

3. Has these been any increase/decrease in number of livestock owned? Yes\_\_\_ No\_\_\_

a. If yes, then give reasons (Reproduction, Trade, Inheritance, Disease, Predation, Trade, Others)? \_\_\_\_\_

\_\_\_\_\_

b. When did these changes take place?

\_\_\_\_\_

\_\_\_\_\_

## ECONOMICS

### 4. Turnover [Previous year {1991}]

<u>Goat</u>	Quantity		Rate
	Used	Sold	
Milk	_____	_____	_____
Wool	_____	_____	_____
Meat	_____	_____	_____
Male Kid	_____	_____	_____
Female Kid	_____	_____	_____
Male Adult	_____	_____	_____
Female Adult	_____	_____	_____
<u>Sheep</u>			
Milk	_____	_____	_____
Wool	_____	_____	_____
Meat	_____	_____	_____
Male lamb	_____	_____	_____
Female lamb	_____	_____	_____
Male Adult	_____	_____	_____
Female Adult	_____	_____	_____

5. What is the system of payment for grazing livestock of other individuals/families/villages? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

6. What is the system of payment if you keep your flock overnight in somebody's field en route? \_\_\_\_\_

\_\_\_\_\_

7. Any other transactions which take place? \_\_\_\_\_

---

### COSTS

8. What were the total costs incurred last year by you on maintaining and grazing your flock? \_\_\_\_\_

---

### AREAS OF GRAZING

9. a. Place of origin and approx. date \_\_\_\_\_

b. Place of destination and approx. date \_\_\_\_\_

c. Route while coming up

Route while going down

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

10. Has the route which is taken been changed? If yes then why? If not, then what is the basis of following this route? \_\_\_\_\_

#### PRESSURE ON PARK

11. What is the per day (or any other unit) consumption of fodder by the goats and sheep in your flock?

	Goats	Sheep
Grasses	_____	_____
leaves	_____	_____
others	_____	_____

12. Do you collect fodder when in the Park? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes then how much?

	Goats	Sheep
Grasses	_____	_____
leaves	_____	_____
others	_____	_____

13. What are the other resources used by the respondent in the Park?

Resource	Quantity (specify units and time period)
----------	--

Fuelwood	_____
----------	-------

NWFP	_____
------	-------

Others	_____
--------	-------

\_\_\_\_\_

\_\_\_\_\_

14. Have there been any changes in the availability of resources used from the Park? Since when? \_\_\_\_\_

\_\_\_\_\_

## LEGAL STATUS

15. Is the respondent a rightholder: Yes/No

If Y: a. Where recorded \_\_\_\_\_

b. When issued \_\_\_\_\_

c. Period of validity \_\_\_\_\_

d. Where in the park/other area can the holder go to \_\_\_\_\_

e. For how long can he go \_\_\_\_\_

f. How many heads of livestock can he bring \_\_\_\_\_

g. Other details \_\_\_\_\_

If N: a. How did the respondent enter the Park? \_\_\_\_\_

16. How is the respondent in possession of his right (Individually, family wise, or village wise)? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

17. How can these rights be transferred/inherited? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

18. Can such rights be bought or sold by the holder?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

19. Has the respondent bought any rights or knows someone who might have bought or sold a right? What were the terms of the transaction? \_\_\_\_\_

---

---

---

---

#### MONITORING AND REGULATION

20. Has the grazier been stopped from:-

a. Using his traditional route? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, then when and where? \_\_\_\_\_

b. Grazing his flock in a certain area? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, then when and where? \_\_\_\_\_

c. Bringing in more than a certain number of livestock? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, then when and how much? \_\_\_\_\_

d. Bringing in his livestock during a certain time of the year? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, then when and for which period? \_\_\_\_\_

e. Any other restrictions apart from the above? \_\_\_\_\_

f. Has the respondent been checked by the authorities for the number of livestock he brings into the Park? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, then where and when? \_\_\_\_\_

g. Any other impacts of the Park? \_\_\_\_\_

#### HISTORY

21. How many people are currently engaged in migratory grazing? Have the number of people who do migratory grazing increased or decreased over the past few years? If so, what are the reasons for the above if any?

---

22. Has there been an change in the areas over which livestock is being grazed? If so, what are the reasons for the above? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

23. Has there been any change in the quantum of livestock being grazed? If so, what are the reasons for the above? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

OTHER ACTIVITIES/SOURCES OF INCOME

24. What is the respondents annual economic activity cycle?

Months of Year	Activities
March-April/Chait	_____
April-May/Baisakh	_____
May-June/Jaith	_____
June-July/Aashaad	_____
July-August/Sawan	_____
Aug.-Sept./Bhadon	_____
Sept.-Oct./Sauj	_____
Oct.-Nov./Kartik	_____
Nov.-Dec./Mankshar	_____
Dec.-Jan./Poh	_____
Jan.-Feb./Maagh	_____
Feb.-March/Phagun	_____

25. Of the above, what are the respondents' cash income generating activities besides Pastoralism?

Activities	Income
_____	_____
_____	_____
_____	_____
_____	_____

VALUES AND OBJECTIVES OF PARK

26. Are you aware of the existence of the national park? Yes\_\_\_ No\_\_\_

a. If yes, then when and how did you come to know?\_\_\_\_\_

27. Should a national park have been notified in this area? Give reasons for your views

\_\_\_\_\_

\_\_\_\_\_

28. Are you aware of the objectives with which this Park was set up? Yes\_\_\_ No\_\_\_

a. If yes, What are these?\_\_\_\_\_

b. Do you agree with these objectives? Yes\_\_\_ No\_\_\_

c. If not, then what according to you should have been the objectives?

\_\_\_\_\_

ALTERNATIVES

29. Have there been any traditional practices for protection and promoting regeneration of grazing lands? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

End time:



ANNEXURE 5: **MIGRATORY OR SEASONAL GRAZIER'S SCHEDULE**  
**LEVEL 1**

Sl. no.: \_\_\_\_\_

Date: \_\_\_\_\_

Time from : \_\_\_\_\_ to: \_\_\_\_\_

Place of interview: \_\_\_\_\_

1. Name of respondent/s      Sex      Age      Religion      Caste

_____	M/F	_____	_____	_____
_____	M/F	_____	_____	_____
_____	M/F	_____	_____	_____
_____	M/F	_____	_____	_____
	(2.2.4)	(2.2.3)		

2. Composition of grazier group: (4.1.3.1, 4.1.3.4)

Name and sex	Relationship to leader #	Village(V) or Town(T) * (specify)	ask last R/L/C/P/other
_____	M/F leader	_____	V/T _____
_____	M/F	_____	V/T _____
_____	M/F	_____	V/T _____
_____	M/F	_____	V/T _____
_____	M/F	_____	V/T _____
_____	M/F	_____	V/T _____

# If unrelated write "UR"

\* If permanently nomadic, state "nomadic". If small village, also mention nearest town, identify in map. Detailed address and approach to above villages

\_\_\_\_\_  
\_\_\_\_\_

3. a) Name the thaches/ forest blocks in and around the Park where you graze your livestock. (4.1.3.5) -

Location	Nearest village	Time of year	Approx. no. of days
_____	_____	CZ/BZ _____	_____
_____	_____	CZ/BZ _____	_____
_____	_____	CZ/BZ _____	_____
_____	_____	CZ/BZ _____	_____

\* Please mark on a map

b) If the areas of fodder collection are not adjacent to the grazing areas, name them: (4.1.3.5)

\_\_\_\_\_

c) What routes within the park did you use (mark in a map)? \_\_\_\_\_

\_\_\_\_\_

4. Composition, ownership and legal status of livestock in the flock: (4.1.3.1, 4.1.3.4, 4.1.3.5)

Owner of livestock	Village of origin	No. owned of goats sheep cows others (specify)			
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Total no. of \_\_\_\_\_

No. of unauthorised \_\_\_\_\_

Grazing fee/head (Rs.) \_\_\_\_\_

5. What is the reason for this composition of livestock? Why do you have more of (the largest category) and less of (the smallest)?

6. a) Describe you annual travel programme/ routes followed:

Route/Place	Travel/ stay	Period settled if at all	Activities
Jan. _____	T/S	_____	_____
Feb. _____	T/S	_____	_____
Mar. _____	T/S	_____	_____
Apr. _____	T/S	_____	_____
May _____	T/S	_____	_____
June _____	T/S	_____	_____
July _____	T/S	_____	_____
Aug. _____	T/S	_____	_____
Sept. _____	T/S	_____	_____
Oct. _____	T/S	_____	_____
Nov. _____	T/S	_____	_____
Dec. _____	T/S	_____	_____

b) Are these regular routes or do they change every year?

7. a) Income generated by major activities

Activities	Income Earned (Amount & Proportions)
_____	_____
_____	_____
_____	_____
_____	_____

b) Any other sources of income? \_\_\_\_\_

8. This year (19\_\_), when did you enter the Park? When do you plan to leave?

**Description of pressures on the Park:** (4.1.3.1)

9. Which species of forage and fodder are the preferred food of the livestock? (4.1.3.1)

forage	fodder
--------	--------

sheep \_\_\_\_\_

\_\_\_\_\_

goats \_\_\_\_\_

\_\_\_\_\_

cows \_\_\_\_\_

\_\_\_\_\_

• Others \_\_\_\_\_  
(specify)

\_\_\_\_\_

10. Other animals brought into the Park :

Mules/Ponies/Dogs/Others (specify) \_\_\_\_\_ (4.1.3.1)

**History and trends (pressures on the Park):** (4.1.3.2)

11. a) For how long have you/your family/group been coming to this area (Inner Seraj and Waziri Rupi) to graze your cattle?

\_\_\_\_\_

\_\_\_\_\_

b) Have you been forced to come to this area because your other/previous grazing grounds are no longer available or viable? Give details

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

12. Has there been an increase or decrease in

a) livestock numbers    increase/decrease

b) area under grazing    -in the Park    increase/decrease  
   -in general    increase/decrease

c) What are the reasons for the above?

---

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**Legal Status**

(4.1.3.4)

13. Do you have a right/lease/concession/permit to graze livestock (include all members of the grp)? if no, explain.

Name	R/L/C/P	Recorded where and when/issued by whom?
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>

**Socio-economic linkages and justification**

14. Income from livestock    (4.1.3.7)

Products (Specify from which species)	Amount p.a. (Specify Unit)	Selling Price	Buyer/ Market in demand	Annual Income	Increase/ decrease
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

\* Over the past five years

15. Input into livestock

	Goats	Sheep	Cows	Other (specify)	Total
Medicine	_____	_____	_____	_____	_____
Transport	_____	_____	_____	_____	_____
Hired labour	_____	_____	_____	_____	_____
Feed	_____	_____	_____	_____	_____
Household labour	_____	_____	_____	_____	_____
Buildings/Space	_____	_____	_____	_____	_____
Land	_____	_____	_____	_____	_____
Other	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____

**RESTRICTION ON MIGRATORY GRAZING?**

(5.2.1-3)

**History and Process of its impositions:**

(5.2.1.4)

16. a) Do you know that this area has been declared a National Park? How did you find out?  
From whom? When? (5.2.1.4)

---



---

- b) What do you think is the function of the Park? Do you agree with the reasons for restricting grazing? (5.2.1.7)

---



---

17. a) Have you been informed of the impending restrictions on grazing? How, by whom, when? (if not, record reaction) (5.2.1.4)

---

---

- b) Do you agree with the reasons given for restricting grazing?

---

---

18. a) Do you know whether you are to be compensated? Yes/No  
If yes, what are the terms? (5.2.1.4)

---

---

- b) Were you consulted regarding terms of compensation? Do you feel that the compensation is adequate? If not, what have you done about it? (5.2.1.7)

**Nature and Quantum of Impact**

19. a) What are the impacts on your activities due to the restrictions on grazing? (5.2.1.5)

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---

- b) What other impacts (economic, physical, psychological) (5.2.1.5)

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**Alternatives proposed/provided (to grazing the park)**

20. a) Describe other areas where your livestock could be grazed? (5.2.1.6)

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---

b) Are these areas free or occupied by other graziers/others? (5.2.1.6)

---

22. Have you considered going in for improved breeds of animals and for stall feeding them, buying fodder from the market? (5.2.1.6)

---

---

23. Is there any other profession you are familiar with and which you can take up apart from pastoralism? (5.2.1.6)

---

---

24. Would you consider leading a settled life if provided with the necessary resources? What would these resources be? (5.2.1.6)

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25. What future would you like for your children? (5.2.1.6)

---

---



**Perceptions and reactions of graziers to the impending restrictions on grazing:**

26. If you are grazing legally, what do you feel about illegal graziers? (5.2.1.7)

---

---

27. If you're grazing illegally or partially illegally, what circumstances have made you do this? (5.2.1.7)

---

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28. a) Is there any monitoring/regulation by Park/forest officials? Yes/No (4.1.3.4)

---

---

b) How is monitoring/regulation of grazing carried out?

i) random spot checks \_\_\_\_\_

ii) at entry points \_\_\_\_\_

iii) others (specify) \_\_\_\_\_

29. Describe any traditional practices aimed at promoting regeneration of fodder and forage, including rotation of grazing grounds. (4.1.3.5, 4.1.3.9, 4.1.3.6)

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30. Describe any difficulties you may have had with any of the government authorities (particularly park and forest). How were they resolved, if at all? How do you suggest such problems could be resolved in the future? (5.2.1.7)

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## MIGRATORY GRAZERS SCHEDULE LEVEL 2

31. a) What are your group leader's functions? (2.2.6)

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b) How was he selected? (2.2.6)

---

32. How does your group make decisions? Give examples (regarding routes to take, etc.) (2.2.6)

---

---

33. What factors decide the routes you take and grazing grounds you use: (2.2.6, 2.2.7)

a) tradition 

---

b) legal authorisation and arbitration by authorities R/L/C/P

---

c) negotiation with other grazer groups 

---

d) other (specify) 

---

Which of the above is most common?

34. Do you move in the same group every year or does the composition of the group change? (2.2.6)

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35. Has the composition of the flock changed in terms of species (Yes/No) or breed (Yes/No) of the livestock? Any introduced breeds? If yes, why?

---

36. Are rights carried down from generation to generation? How? (Father to oldest son? Divided amongst sons, or does each son inherit full rights? What about daughters?) (4.1.3.4)

---

---

37. Impact on park due to grazing activity (4.1.3.9)

- i) Have you noticed any change over the years in the vegetation along your route and at the thaches? (Describe) (4.1.3.9, 2.1.5, 2.1.9)

- change in the prevalence of species of glasses and shurbs
- weeds
- change in the heights of trees along the way, lopping of lower branches
- others

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- ii) Which are the most heavily grazed areas in and around the park? (4.1.3.9, 2.1.8, 2.1.9)

- CZ \_\_\_\_\_ BZ \_\_\_\_\_

- iii) Have you noticed any impacts on the wildlife in the areas (4.1.3.9, 2.1.10)

- diseases
- cross breeding with livestock
- limiting the availability of water and food to wild animals impact on movement of wildlife, etc.
- others

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- iv) Impacts such as soil erosion, water pollution. (4.1.3.9, 2.1.1, 2.1.7, 2.1.8,)

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38. Resources consumed from the Park: (4.1.3.5)

	Species used	Amt. extracted/ day	Method of extraction
Fodder			
Firewood			
Timber			
Herbs			
MFP			
Others (Specify)			

Food for dogs \_\_\_\_\_

\_\_\_\_\_

Food for ponies/mules \_\_\_\_\_

\_\_\_\_\_

Others (specify) \_\_\_\_\_

\_\_\_\_\_

39. Describe your relationship with Park and forest officials: (5.2.1.7)

a) Are the officials easily accessible? \_\_\_\_\_

\_\_\_\_\_

b) Do they listen to your problems? \_\_\_\_\_

\_\_\_\_\_

c) Are they helpful in solving the problems? \_\_\_\_\_

\_\_\_\_\_

d) Do you find regulations imposed by the authorities reasonable? Are they followed?

\_\_\_\_\_

40. a) What wild animals have you seen on this visit and where (ask description of animal)  
(4.1.3.9, 2.1.10)

Animal	Nos. seen	Location	Time of Day
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

b) Describe if the years have you noticed any change in the frequency and type of animal seen? (4.1.3.9, 2.1.1, 2.1.10)

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ANNEXURE 6: HERB COLLECTORS' SCHEDULE

Date :

Place:

Interviewer:

Start Time:

Schedule No:

Recorder:

1. Name	Age	Religion/ caste	Village	Panchayat	Tehsil	Kothi/Phati

Purpose of this visit

2. Areas already visited or to be visited in Park on this trip

Place already visited	No. of days

Place already to be visited	No. of days

3. Any other purpose of this visit?

4. Herb in possession or to be collected	Quantity [Dry (D)]	Quantity [Wet (W)]

ECONOMICS

5. Turnover [Previous Season {1991}]

Herb	Quantity	Price

6. Costs

What were the total costs incurred on herb collection in the previous season {1991}? \_\_\_\_\_

\_\_\_\_\_

7. Which are the markets to which the respondent supplies herbs?

\_\_\_\_\_



## AREAS OF HERBS COLLECTION

8. Which entry points do you use to go to which locations in the Park?

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9. Which exit points do you use to go to which places out of the Park?

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10.    Location    Herbs extracted [Previous season {1991}]

_____	_____
_____	_____
_____	_____
_____	_____

## HISTORY

11. Since when has the respondent been involved in herb collection?

---

## LEGAL STATUS

12. Is the respondent a rightholder for this area? Yes \_\_\_\_\_ No \_\_\_\_\_

If Y: a. Where recorded \_\_\_\_\_

b. When issued \_\_\_\_\_

c. Period of validity \_\_\_\_\_

d. Where in the park/other area can the holder go to \_\_\_\_\_

e. How often can he go \_\_\_\_\_

f. What can he collect \_\_\_\_\_

g. How much can he collect \_\_\_\_\_

h. Other details \_\_\_\_\_

If N: a. How does respondent manage to come in and since when?

\_\_\_\_\_  
\_\_\_\_\_

#### MONITORING AND REGULATION

13. Has the respondent been stopped from:-

a. Collecting herbs in a certain area? Yes \_\_\_\_ No \_\_\_\_

If yes, then where? \_\_\_\_\_

b. Collecting more than a certain quantity of herbs? Yes \_\_\_\_ No \_\_\_\_

If yes, then how much? \_\_\_\_\_

c. Collecting a certain herb? Yes \_\_\_\_ No \_\_\_\_

If yes, then which? \_\_\_\_\_

d. Collecting herbs during a certain time of the year? Yes \_\_\_\_ No \_\_\_\_

If yes, then which time? \_\_\_\_\_

e. Other restrictions if any? \_\_\_\_\_

14. Has the respondent been checked by authorities for a right/permit while coming in to the Park? Yes \_\_\_\_ No \_\_\_\_

a. If yes, then where? \_\_\_\_\_

15. Has the respondent been checked by authorities for the kind of herbs and the quantities he is carrying out of the Park? Yes \_\_\_\_ No \_\_\_\_

b. If yes, then where? \_\_\_\_\_

16. Other impacts of Park if any? \_\_\_\_\_

## OTHER ACTIVITIES/SOURCES OF INCOME

17. What is the respondents annual activity cycle?

Months of Year	Activities
March-April/Chait	_____
April-May/Baisakh	_____
May-June/Jaith	_____
June-July/Aashaad	_____
July-August/Sawan	_____
Aug.-Sept./Bhadon	_____
Sept.-Oct./Sauj	_____
Oct.-Nov./Kartik	_____
Nov.-Dec./Mankshar	_____
Dec.-Jan./Poh	_____
Jan.-Feb./Maagh	_____
Feb.-March/Phagun	_____

18. Of the above, what are the respondents' income generating activities besides herb collection? [Previous Season {1991}]

Activities	Income
_____	_____
_____	_____
_____	_____
_____	_____

19. What are the factors which determine/influence the duration of the herb collection season? \_\_\_\_\_

\_\_\_\_\_

20. What proportion of your cash income comes from herb collection?

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PRESSURE ON PARK (Other than herb collection)

21. What are the other resources used by the respondent in the Park?

Resource      Quantity (specify units and time period)

Fuelwood      

---

NWFP      

---

Others      

---

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---

22. Have there been any changes in the availability of resources used from the Park? 

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VALUES AND OBJECTIVES OF PARK

23. Are you aware of the existence of the national park? Yes \_\_\_\_ No \_\_\_\_

a. If yes, then when and how did you come to know? 

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24. Do you think that a national park should have been notified in this area? Give reasons if any for your views 

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25. Are you aware of the objectives with which this Park was set up? Yes\_\_\_ No\_\_\_

a. If yes, what are these? \_\_\_\_\_

b. Do you agree with these objectives? Yes\_\_\_ No\_\_\_

c. If not, then what according to you should have been the objectives?

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#### ALTERNATIVES

26. Have there been any traditional practices for protection and promoting regeneration of herbs? \_\_\_\_\_

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27. Are these methods still in practice? If not, why have they been terminated?

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28. Is the respondent aware of any attempts to artificially grow herbs?

a. Herb(s) \_\_\_\_\_

b. When \_\_\_\_\_

c. Where \_\_\_\_\_

d. By whom \_\_\_\_\_

e. Results/Present status \_\_\_\_\_

29. What alternatives if any, does the respondent think can be made available to herb collection as an income generating activity? Which would be the most preferable alternative of the above? \_\_\_\_\_

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End time:

## **ANNEXURE 7: PRELIMINARY - FIELD VISIT 1 (AUGUST 1989)**

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### **1. Details of the Field Visit**

Field Visit Dates: 15th-25th August, 1989

Duration of Field

Visit: 19th-22nd August (inclusive)

Field Visitors: Ashish Kothari, Raman Mehta, Farhad Vania,  
Sultana Bashir

### **People Interviewed**

Officials: Shri P.P. Madan; Park Director  
Shri M.P. Sharma, Range Officer, Sainj  
Shri Katoch, ADM, Kullu, and Settlement Officer

Others: Some inhabitants of Shakti and Maraur villages and a group of 8-10 graziers  
from Lapah, Shangarh and Tirthan at Dhela Thach

### **2. Methodology used for the Field Visit**

Two copies of Questionnaire A were completed as far as possible by separately interviewing the Park Director and Range Officer M.P. Sharma, one of the three Range Officers at the Park. A list of management problems identified by the team through secondary sources was discussed separately with the Park Director and R O Sharma.

The team talked to some of the inhabitants of the village Shakti for approximately 1 hour. More time, 2-3 hours, was spent talking to the villagers of Maraur. In Maraur, a walk was undertaken along the banks of the river Sainj for 2-3 hours in order to collect impressionistic information about the Park. Some bird and plant identification was carried out during the walk.

The team visited Dhela Thach in order to talk to some migratory graziers. Dhela Thach was selected because it was the most accessible place from Maraur, in the time available, where it would be possible to meet migratory graziers. Because of rain and a tight schedule, the team were able to speak to the graziers for only 45 minutes.

The various Schedules for recording village profiles and perceptions of displacement and/or loss of rights and relations with Forest Department officials were not used while talking to either the villagers or the graziers as it was felt that this might inhibit discussion. However, the questions contained in the schedules were kept in mind during discussions.

General observations were made of the Park, particularly its habitat and avifauna, throughout the course of the team's site visit, not only while trekking from one place to another, but also early morning and evening at each place of stay when possible. The team had the opportunity to talk at length with RO Sharma, as well as two forest guards and the local people, including one villager from Maraur (Bodhu Ram), who accompanied the team throughout their site visit as guides and porters.

After the site visit, two team members met the Park Director again to provide some feedback on their visit. They also tried to interview the Settlement Officer, the Additional Dt. Magistrate of Kullu, but it was only possible to speak to him briefly as he was very busy.

### 3. Limitations of Methodology

i) Methodology suffered from insufficient preparation and planning. Preparatory work included some amount of group discussion and the compilation of a list of perceived problems to be discussed with Park authorities. However, it was difficult to decide on a detailed plan of action from Delhi, especially as this was the first, preliminary, visit. Details of the actual visit to the Park could only be decided on site with the help of the Park authorities, for example, logistics, who would accompany the team as guides, what provisions and equipment should be taken, etc. Thus, in retrospect, it might have been useful to have sent a team member to Kullu and back, to obtain more information before organizing the trip.

Many of the other constraints on the study stem from this primary limitation of insufficient planning and preparation.

ii) Perhaps the second most important limitation of the study was the inadequate amount of time available for the field visit given the following conditions:

(a) the amount of information to be collected, particularly as the various sources of data were highly dispersed, e.g. the Settlements Officer at Kullu is located some 10 km from the Park Director at Shamshi, which is more than 60 km from the first village (Shakti) the team was to visit

(b) the amount of time (and hardship!) involved in getting from A to B largely because the Park could only be visited on foot and terrain is very difficult; but even in vehicles, distances outside the Park could only be covered relatively slowly due to the poor condition of the roads

As the majority of the time was spent travelling, only two out of the four villages within the Park could be visited. Moreover, only limited information was collected from each of those, partly because insufficient time was spent at each site.

## ANNEXURE 8: FIELD VISIT 2 (SEPTEMBER-NOVEMBER 1991)

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### I Details of the Field Visit

Field Visitors: Raman Mehta, Ravi Bhalla, Sultana Bashir, Farhad Vania

Period of Visit: 15 Sept. to 4 Nov., 1991

Areas Visited: In the park: 1. Jiwa Nal Valley  
2. Tirthan Valley

Adjacent areas: 1. Railah, Pashi  
2. Sainj  
3. Gushaini, Bathad

Others : Kullu, Shamshi

A chronology of the field visit and a list of people met and offices visited are given at the end of this annexure.

### II Objectives of the Field Visit

The specific objectives of this field visit were the following:

- i To complete village and household surveys for all the Park villages i.e. Kundar and Manjhan in Jiwa Nal, and Shakti and Maraur in Sainj Valley.
- ii To assess the practice of local/migratory grazing and herb collection in terms of the quantum and extent of these activities and their impact on habitat (in collaboration with Gaston & Garson), as well as a socio-economic profile of those dependent on these activities for their livelihood.
- iii To complete Questionnaire A and the queries questionnaire with the Park authorities.
- iv To collect information from various levels of the District Administration on relocation of Park villages, administrative break-up (i.e. kothi/phati/Panchayat) of the region and human/livestock populations of villages in the adjacent area.



## 411 The Methodology

Key: VS - Village schedule  
HHS - Household schedule  
MGS - Migratory graziers schedule  
HCS - Herb collectors schedule  
AVS - Abbreviated village schedule

### 1. Introduction

The methodology presently being used in the study of "Human-Nature Interaction in and around National Parks in India" has been evolved over the last two years, on the basis of field visits to Sariska, Rajaji, and Great Himalayan National Parks and in discussion with other associates at IIPA.

Basically, Questionnaire - A has become the principal method of obtaining primary information from park authorities, while a series of schedules, administered through interviews, are used for obtaining information from people living in and around national parks. This note is limited to comments on the schedules and interview method used in village and household surveys, and with herb collectors and migratory graziers, in Great Himalayan NP.

### 2. Proposed Methodology

In discussions held during pre-visit preparations, several points were raised about how to structure interview schedules. Initially, it was felt that they should be drafted respondent-wise aimed at all those directly and indirectly associated with either the 'causes' or the management of the Park's problems. This was followed by a suggestion that the schedules should be drafted problem-wise, with each problem being looked at from the point of view of its history, location, scale and intensity, management effort directed at the problem and possible solutions to the problem. At this point, a report structure for the final report on each national park was also drafted. Finally, the schedules were drawn up on the basis of the major problems of the national parks being studied and linked up with the report structure.

In the initial round of schedule-making discussions, it was felt that some of the schedules, e.g. VS, AVS and HHS, should be applicable to all national parks, while some would be specific to the problems of individual national parks, e.g. HCS and MGS for Great Himalayan NP. However, this idea was later dropped so that the team could concentrate its efforts on one park at a time. Thus, for the field visit for Great Himalayan NP, the following schedules were drafted:

1. Village Schedule - for Park villages (56 pages).
2. Household Schedule - for household surveys in Park villages (37 pages).

3. Migratory Graziers Schedule - split into two levels, in anticipation of the limited time available with respondents (Level I, 9 pages; Level II, 4 pages).
4. Herb Collectors Schedule - split into two levels for the same reasons as in 3 (Level I, 4 pages; Level II, 7 pages).
5. Abbreviated Village Schedule - for herb collectors and migratory graziers (7 pages).

### 3. Methodology Used

Contact with our respondents was generally established through the following procedure, with some variation depending on the specific situation. In most cases, we were introduced to our respondents by local people, e.g. our porters, or Forest Department staff accompanying us. We would then spend some time explaining the purpose of our visit, details of the study and its objectives, and what we wished to obtain from our respondent(s). The way we were introduced inevitably left us being identified with either the Forest Department or the government, rather than as independent researchers.

The actual administration of schedules was done at different locations. For example, in Manjhan all schedules were administered in the same location outside one of the respondent's houses; graziers were interviewed variously on paths, in fields and at bus stops. In most cases one person administered the schedule, while another recorded responses. The number of people responding to a schedule varied considerably, e.g. the HCS was administered to a single respondent, while most MGS (Two to Six) and the VS were administered to groups of respondents. Sometimes, schedules were administered to a group of respondents in the presence of unassociated people who would also participate in the interview, e.g. MGS One & Seven (see Annexure 2 for details). Although we attempted to record responses in the spaces provided in the schedule, these were often inadequate and additional notes had to be made separately. After administering a schedule, the team would later hold discussions to check on accuracy of recording of responses and to sort out discrepancies. All information relating to a particular schedule would then be consolidated.

All the interview schedules drawn up prior to the visit were used in the field. Specific problems were encountered with each schedule, while some problems were common to all the schedules and to the interview method used. Some modifications were made to the schedules in the field after discussion by the team: changes related to the order of certain questions, and the omission of repetitions of similar questions or questions for which it was difficult to obtain responses in the time available.

## 2. Problems with respondents

- 2.1 **Non-availability of respondents:-** This problem was encountered throughout the visit. In Manjhan, all the adult men (i.e. not old) and many of the younger people had gone either to villages outside the park, or for herb collection, or grazing. Migratory graziers could not be met in **thaches** inside the Park, where they are reported to stay for upto a month, as they had already started moving down by the time the team was ready to enter the Park. This was also the case with herb collectors, as the peak season of collection was coming to an end in September. During the Kullu Mela, the team was informed that many of the villagers of Shakti and Maraur would be in Kullu.
- 2.2 **Time available with respondents:-** The time required for completing schedules, especially the VS and HHS, was so long that respondents often had to interrupt the interview in order to carry out their daily activities. The shortest period of time available for filling in schedules was with the graziers, who either had to move between answering questions and managing their flock, or were in a hurry to move on. Some ANNEXURE 2 schedules were completed over a period of several days, at different locations, e.g. the HCS started in Railah and completed in Manjhan. In Manjhan, the women were more articulate and seemed better informed than the two old men, but they were available only for short periods in the morning and evening. The attention span of the respondents and the ability to concentrate on the schedules were found to be limited and often led to inconclusive responses or a termination of the interview on account of sheer weariness of the respondent, e.g. VS followed by HHS with same respondent in Manjhan (94 pages in all).
- 2.3 **Inability to perceive abstract quantities:-** This problem was faced especially with regard to questions on incomes and weights. Several of these questions required a figure for annual income earned or total weight collected of a particular agricultural or forest produce. The respondents had probably never had to make such calculations or keep such records in the past, and they did not find it easy to arrive at these totals. Thus, the reliability of responses to such questions is unclear.
- 2.4 **Perception of concepts:-** Many of the questions asked dealt with concepts that were either unfamiliar to the respondent or that were expressed in such a way that the respondent(s) may not have been able to relate to them e.g. national park, economic linkages etc.
- 2.5 **Multiple respondents:-** Sometimes more than one respondent was interviewed for the same schedule, but at different times, e.g. HHS- in Manjhan. On other occasions, a crowd of local people would gather around the respondent(s), sometimes leading the conversation astray but more often prompting the respondent on what answers to give e.g. MGS-One & Seven in Gushaini (see Annexure 2).
- 2.6 **Disparities in responses:-** Similar questions, and especially questions relating to the same thing but asked in different ways at different points in the schedule,

often resulted in inconsistent responses e.g. In other instances, the interviewers changed e.g. VS in Manjhan. It was not always clear whether responses pertained to the individual respondent, his or her family or household, or to the village, and this also gave rise to disparities. The schedule did not clearly specify where what kind of response would be appropriate.

#### V Details of Schedule Administration

Schedule	Number of schedules	Location	Interviewer/ Recorder	Dates	Time Taken	Remarks
VS	1	Majhan	RM/RB	26-27 Sept	2 days	6 hrs on Day 1 & 4 hrs on Day 2
HHS	2	Majhan	RM & RB/ RB & FV	27-28 Sept	See Annexure 3	
HCS	1	Railah/ Manjhan	RM/RB & FV	23 & 28 Sept	2 <sup>c</sup> days	4 hrs on Day 1 & 2 hrs on Day 2
MGS	7	Bathad & Gushaini	See Annexure 2			Level I - 7 Level II- 3
AVS	1	Railah	FV/SB & FV	22 Sept	3 hrs	

#### VI Details of MGS Administration

Schedule # Location code	Interviewer/ Recorder	Dates	Time taken	Remarks
One: Bathad - 1	RM/FV	5 Oct	40 mins	
Two: Bathad - 2	FV/SB	7-8 Oct	2 days	3 hrs Day 1 & 1 hr Day 2
Three: Gushaini - 1	RM/RB	7 Oct	30 mins	
Four: Chikani Pani - 1	RM/RB	7 Oct	1 hr	
Five: Gushaini - 2	RM/RB	7 Oct	45 mins	
Six: Dualikhet - 1	RM/RB & FV	8 Oct	40 mins	
Seven: Gushaini - 3	RM/RB & FV	9 Oct	30 mins	

Note: The order of Schedule # and Location code given here are as per the Migratory Grazing Collation Table

## **VII Details of HHS Administration**

Schedule #	Interviewer/ Recorder	Dates	Time taken	Remarks
HHS-I	RM/FV	27-28 Sept	2 days	6 hrs on Day 1 & 1 hr on Day 2
HHS-II	RB/RB	27-28 Sept	2 days	6 hrs on Day 1 & 2 hrs on Day 2

## **VIII A Chronology of the Great Himalayan National Park Field Visit, 1991**

**Key:** MG - Migratory Grazier  
AV - Abbreviated Village  
HC - Herb Collectors

- 15 Sept. Dpt. Delhi
- 16 Sept. Arr. Park headquarters at Shamshi. Met acting Park Director, Mr Vijay Kumar. Also met D.F.O. (WL), Mr Jain, and the Tirthan Range Officer, Mr B.R. Negi in Kullu. General discussion about our work and about the new local nature club, the Devdar Nature Club.
- 17 Sept. Further discussion with the Park Director and RO, Negi. We learn that Peter Garson returned to Kullu the previous evening and is very ill. Also learn from him that most of the herb collection is over and that the graziers have begun their homeward journey. Discussion with some members of local nature club regarding how to get funding, etc.
- 18 Sept. Presentation at Kullu College on NP Study and KV/NGOs organized by Devdar Nature Club. Make plans with Sainj Range Officer, M.P. Sharma, and Park Director about where to go first. Decide to first intercept graziers coming from Sainj and Tirthan Valleys in Bathad and Gushaini, as it is too late to catch them in the thaches.
- 19 Sept. Plans revised as M.P. Sharma had been quoting the wrong dates regarding the graziers' movements. Decide to go to Kunder and Manjhan first as otherwise we will be too early for the graziers. Plan to return to Shamshi/Kullu by 1st Oct. at the latest, and to reach Bathad by 2nd/3rd Oct. Start buying provisions.
- 20 Sept. Finish buying provisions. Arr. Sainj along with ex-Garson team, now led by Virinder Sharma, who are also going to the Jiwa Nal Valley.
- 21 Sept. Very slow start: much confusion over porters because of other team. We learn over 20-21st that linking up with another team, even temporarily, can be quite a pain and lead to a lot of time wastage, because Forest Department have limited staff and resources and because greater organization and coordination is required.

Leave Sainj for Seund (4 km away) and trek to Railah (3 km, 2-3 hours). Meet some of the villagers including the two school teachers,

- 22 Sept. RM and RB start filling herb collectors' schedule with our porter, Khem Raj, a resident of Railah. FV and SB complete Abbreviated Village Schedule with the school teacher, Tek Chand Ram. Have general discussion about resource use with a group of villagers who had gathered around the mandir to watch/participate in the preparations for the evening's mela. Meet Mr Negi, the Palsarah, owner of the only local shop and of a cloth shop in Sainj, and a very dominant member of the village. We go through the AV Schedule with Mr Negi as well. He is educated and also speaks English well. All night mela from 20.30 after the arrival of the Devta and Devi.
- 23 Sept. Trek to Pashi village (c. 6 km from Railah, c. 3.5 hours).
- 24 Sept. Trek to Gatipat (c. 8 km from Pashi, c. 4 hours).
- 25 Sept. Trek to Manjhan village (c. 4 km from Gatipat, c. 4 hour walk). See Kundar on the way and discover that it is no longer inhabited, although people still come on a seasonal basis to cultivate their land. In Manjhan, we meet Kandshi Ram, an old man who is the head of one of the two resident households. Members of the remaining 11 households only come to the village in order to cultivate their fields and live in buffer villages for much of the year.
- 26 Sept. to  
28 Sept. We complete two household schedules and one village schedule. Also make sketches of the village and surrounding hill sides. Prepare a descriptive account of the state of the surrounding habitat on the basis of what we can see from our camp area and a few walks around the village. HC schedule completed with Khem Raj.
- 29 Sept. Leave Manjhan for Pashi.
- 30 Sept. Trek to Sainj via Sharan (c. 10 km, 4 hours).
- 1st Oct. Arrive Shamshi. Meet Park Director in Kullu and report on our visit. We learn that Kulu Dussehra will start on the 18th and last one week. Most people from villages in the area will attend. The villagers of Shakti and Maraur will be attending the festival and it will be impossible to get porters during this period. As there will not be enough time after the Bathad trip to complete a survey of Shakti and Maraur before Dussehra, we decide to visit the Tirthan Valley after Bathad in order to see a new part of the Park.
- 2nd Oct. Gandhi Jayanthi. Many shops closed much of the day. Buy provisions in evening.
- 3rd Oct. Arrive Bathad (70 km from Kullu). Meet two Forest Guards, Bupinder Singh and Ranjit Singh Thakur, posted in Tirthan Sanctuary. Also meet Sher Singh, Deputy Range Officer, Tirthan Range.

- 4th Oct. Confirm that graziers should start arriving from 5th onwards. Meet some local people, including Jalli Ram, son of the local Pradan.
- 5th Oct. Informal interview with herb dealer from Kullu, Mr Nand Lal, who has bought a huge load of Nihani. First group of graziers come through late morning. Manage to complete only Part I of MG Schedule. No time for anymore as graziers impatient to move on. Meet Pradan and ask about local administration.
- 6th Oct. Discuss problems encountered with MG Schedule. Decide to leave out some questions and add others. Change order of some questions. Second group of graziers arrive from Chipni in late evening. (Two of the group arrive earlier to organize things.) The sheep and goats stay overnight in Jalli Ram's field in order to fertilize it. The field is just below the PWD resthouse where we are staying, so we are ideally located to watch proceedings. Establish good rapport with the graziers and stay up late talking around the bonfire in Jalli Ram's field. Jalli Ram also present.
- 7th Oct. RM & RB meet two groups of graziers in Gushaini and administer schedules. FV & SB start administering schedule to graziers staying in Jalli Ram's field. Accompany graziers in the afternoon to camp site above Bathad where they are to stay overnight in another villager's fields (a relative of one of the graziers).
- 8th Oct. RM & RB interview graziers in Gushaini. FV & SB complete MG schedule with same graziers as previous day. Trek to Gushaini (10km, 1hr 45 mins.) and meet a group of graziers en route who are stopping overnight in a local landowner's fields - Duali Keth. RM & RB had previously met the landowner, Sukh Ram, in Gushaini, where he had been quite hostile to them. He was again hostile initially, but the graziers were friendly and Sukh Ram also softened. Manage to complete Part I of MG Schedule before graziers have to go for their meal.
- 9th Oct. Briefly meet RO Negi and Tony Gaston in Gushaini. Gaston introduces us to Ranjiv Bharti, whose father, a former MLA and MP, had strongly supported the establishment of the Park. Trek to Sai Ropa to the Forest Dept. resthouse (4 km). Return to Gushaini and visit Ranjiv Bharti.
- 10 Oct. Further discussions with Ranjiv Bharti.
- 11 Oct. Buy provisions in Gushaini. Trek to Khrongcha (7km, 2.5 hours). Stay in Forest Dept. Inspection Hut.
- 12 Oct. Trek to Chalocha via Rolla (7km, c. 3 hours).
- 13 Oct. Trek to Nada Thach (c. 5hours; alt. 3250 m). See a goral on the way. Flush lots of monal. Walk part way to Hada Thach (below Nada) and see a mouse-hare (pika). Temperature falls below zero at night.

- 14 Oct. FV & RM and RB & SB go on different routes to Kobri Thach (c. 3.5 hrs, alt. 3900 m; tree-line at c. 3700 m). FV & RM see herd of 5 blue sheep (bharal). Both groups see lots of monal.
- 15 Oct. FV & SB return to Kobri and go beyond to last peak before Gargarasan Dhar (alt. 4250 m). See monal, chukor partridge and snow cock.
- 16 Oct. Trek to Rolla (c. 4 hrs). FV & SB see one goral near Chalocha. See another goral near Rolla in the evening. Meet Ranjiv Bharti and a party of some 16 tourists from Chandigarh who are also staying overnight in the Inspection Hut. Nika Ram Bharti from Bathad, also a good friend of Ranjiv Bharti's, turns up accompanied by an extraordinary looking German with long, flowing hair and beard and an iridescent, pink and black silky outfit: he had come overland from Germany in search of wild apricots, in order to use them in the production of cold cream, shampoo and sun tan lotion in Germany; the last wild apricots he had seen were in Afghanistan.
- 17 Oct. See one Himalayan weasel near the river at Rolla. Trek to Gushaini (c. 2 hours) and later to Sai Ropa.
- 18 Oct. Arrive Kullu in time to see Rath Yatra at the Mela. Meet Park Director. Meet Kanwar Singh from Gushaini. Stay in wildlife office in Kullu.
- 19 Oct. Move to Park Office in Shamshi. Attend Mela. Relax at a friend's in Kullu. Earthquake.
- 20 Oct. Massive laundry session in the Beas. Attend Mela. FV gets food poisoning.
- 21 Oct. RM & RB go to Kullu to try and find people from Railah, Shakti, Maraur.
- 22 Oct. Meeting with Tony Gaston and Park Director. Gaston stays with us in Shamshi so opportunity for further discussion.
- 23-24 Oct. Attend Mela. Meet Ranjiv Bharti, and people from Railah and Manjhan. Mela ends on 24th with sacrifice of a buffalo. Plan to meet Railah people who are to be our porters in Sainj on 28th and to start trek on 29th.
- 25 Oct. Meeting with Tony Gaston, Mr Vijay Kumar, the new Park Director, Mr Manoj Bhaik and Virender Sharma. Start collecting information from Park files.
- 26 Oct. Information collection continues.
- 27 Oct. Sunday. Holiday.
- 28 Oct. Obtained copy of Anderson's Settlement of Rights from Territorial Division through Mr Vijay Kumar. Incomplete, but copied some sections. Met new ADM, Mr T.D Negi, who is also Settlements Officer. Tried to get more information on



relocation of Park Villages. Very little readily available. New ADM didn't know the latest. Also met DM, Mr Jeevanand Jeevan.

- 29 Oct. Everyone wiped out. Discussion with RO Negi and M.P. Sharma and new Park Director. Get back completed Q. A and queries questionnaire from the Range Officers. Go to Sainj in the evening with M.P. Sharma.
- 30 Oct. RM not well. The rest go to Agricultural Marketing Committee in Kullu. Also go to Animal Husbandry Office, Panchayat Samiti Office.
- 31st Oct. Go to Revenue Office, Tehsildar's Office, District Statistical Officer and Panchayat Office.
- 1st Nov. RM leaves for Delhi. The rest wind up things in Kullu/Shamshi and go to Sainj with M.P. Sharma.
- 2nd Nov. Meet Naib Tehsildar, Sainj and get livestock figures for all the villages in the sub-tehsil. Walk part way to Deori in the afternoon.
- 3rd Nov. RB leaves for Chandigarh. FV & SB leave for Delhi.

#### **IX List of People Met and Offices Visited during Field Visit to Great Himalayan National Park, September-November 1991**

##### Park Authorities

1. Shri Vijay Kumar ACF (WL), Kullu, and acting Park Director during most of our visit.
2. Shri Manoj Bhaik, current Park Director, as of end-October.
3. Shri B.R. Negi, Range Officer, Tirthan Range
4. Shri M.P. Sharma, Range Officer, Sainj Range
5. Shri M.S. Jain, DFO (WL), Shimla Division, formerly DFO (WL), Kullu Division
6. Shri Diwan Chand, Forest Guard
7. Shri Jaidev, Forest Guard, Ghumtarao Beat
8. Shri Bupinder Singh, Forest Guard, Tirthan Sanctuary
9. Shri Ranjit Singh Thakur, Forest Guard, Tirthan Sanctuary
10. Shri Keshav Ram, Forest Guard, Pashi Beat

11. Shri Roshan, Forest Guard
12. Shri Inder Singh Rana, Superintendent, Park headquarters
13. Shri Sanjeeva Pandey, former Park Director

#### Local People

1. Shri Vishal Bhopal and other members of Devdar Nature Club, Kullu
2. Shri Tek Chand Verma, primary school teacher, Railah
3. Shri Jagdish Sharma, middle school teacher, Railah
4. Shri Sunder Singh Thakur, HPSEB engineer, Railah
5. Shri Khem Raj, herb collector, Railah (also our porter to Manjhan)
6. Shri Negi, Palsra, owner of only local shop, Railah
7. Shrimati Bal Dassi and family, Railah
8. Shri Khub Ram, Pashi (our porter to Manjhan)
9. Shri Jagdish Ram, Bakshaal, (our porter to Manjhan)
10. Shri Kandshi Ram and family, Manjhan
11. Shri Bala Ram and family, Manjhan
12. Up-Pradan, Bathad
13. Pradan, Bathad
14. Shri Jhalli Ram, son of Pradan, Bathad
15. Shri Nikka Ram Bharti, Bathad
16. Shri Sukh Ram, Duali
17. Shri Ranjiv Bharti, Gushaini
18. Shri Kanwar Singh, Gushaini
19. Shri Ishwardas, Khrongcha, (our porter to Nada Thach)
20. Shri Parasaram, Khrongcha, (our porter to Nada Thach)

21. Shri Vikram Singh, s/o Shri Maheshwar Singh, ex-Hon. WL Warden, Shangarh

22. Shri Nand Lal, herb dealer, Kullu

District Administration

1. Shri Jivanand Jivan, Distict Collector, Kullu

2. Shri T.D. Negi, ADM and Settlement Officer, Kullu

3. Tehsildar, Kullu

4. Shri Gyan Chand, District Statistical Officer, Kullu

5. District Revenue Office, Kullu

6. District Panchayat Office, Kullu

7. Panchayat Samiti Office, Kullu

8. Shri Y.P.S. Verma, Naiib Tehsildar, Sainj

Other:

1. Dr Tony Gaston

## ANNEXURE 9: REPORT ON FIELD VISIT TO GREAT HIMALAYAN NATIONAL PARK, JUNE-JULY, 1992

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Field Visitor: Farhad Vania

Period of Visit: 26 June-16 July, 1992

Persons Met: Shri Manoj Bhaik, Park Director  
Shri M.P. Sharma, Range Officer, Sainj  
Shri B.R. Negi, Range Officer, Tirthan  
Shri Narotam Singh, Forest Guard, Maraur Beat  
Shri V.K. Singh, ex-Honorary Wildlife Warden

4 seasonal grazier groups  
1 herb collectors group

Residents of Shakti and Maraur (Park villages)  
Residents of several villages in the adjacent area

Area Visited: Sainj Valley of Great Himalayan National Park

### INTRODUCTION

This visit to Great Himalayan National Park (GHNP), the third since 1989, was undertaken with the following specific objectives:

- I. Seasonal graziers survey
- II. Herb collectors survey
- III. Obtain demographic and administrative information on villages in the adjacent area

The graziers and herb collectors surveys would be carried out inside the Park while the activities were in progress. Two of the three main valleys of the Park i.e. Sainj and Tirthan, were to be covered by one field visitor each. The demographic and administrative information on villages in the adjacent area was to be obtained from various tahsil headquarters. This report deals only with objectives I & II and is based on information obtained from the Sainj valley.

### SEASONAL GRAZIER'S SURVEY

#### Methodology

The exact number of seasonal graziers coming to the Park from villages in the adjacent area and from Ani thasil are not known. From information obtained on previous field visits it seems roughly 60 grazier groups are visiting the Park each year.

It was estimated if upto 15 grazier groups could be met in each valley it would make a reasonable sample.

The interviews with graziers were to be carried out using a briefer version of the Sept.'91 Migratory Graziers schedule. The final schedule (SG schedule) covered the following heads:

- Flock composition
- Turnover & costs
- Areas of grazing
- Pressure on Park
- Legal status
- Monitoring & regulation
- History
- Sources of income
- Values and objectives of Park
- Alternatives

Prior to the field visit the following assumptions were made regarding seasonal grazing:

1. Grazing pressure on the Park primarily comes from two sources i.e. villages in the adjacent area and villages in Ani Tahsil.
2. Pastoralism is not an exclusive activity i.e. 12 months a year, among those who are using in the Park, therefore they are not migratory graziers.
3. Only sheep and goat are being grazed in the Park.

Four SG schedules were filled, of which 3 groups were from Ani Tahsil out of a possible 5, and one group was from Ropa, a village in the adjacent area of the Park. A summary of the information obtained from the grazier's met is given below.

#### **Legal status**

All the respondents were rightholders though none had any documentary evidence of the same. Some claimed that they did possess papers but they had left them in their home villages. One group was not grazing in an area that their village originally had a right for since to get there several streams had to be crossed. No bridges existed across these streams and they had lost many head of livestock and one grazer had also died in previous years attempting the crossing. They were instead, going to another area and the right to do so had been transferred to them by the original owner.

The transfer was recorded on stamp paper that they claimed made the transaction legal. Yet another group possessed receipts for timi (grazing fee) they had paid in 1976, and according to them proved that they had a right.

## **Impact on Park**

None of the respondents reported knowing how much grass and fodder their livestock consumed when in the Park. Use of fuelwood varies depending upon number of persons constituting the group and natural availability of wood. On an average 15-20 kg fuelwood is consumed every day. Some of the groups reported that grass in the thaches had been reducing over the last few years and was being replaced by other inedible or not so preferred species. There was no satisfactory explanation for this occurrence though some of the respondents felt it was due to the increase in the number of herb collectors.

## **Alternatives**

A government job is the most preferred alternative to grazing though most respondents reported not even having considered any yet. According to the graziers the by products of pastoralism were more important for their own use than as a source of monetary income. These include wool for winter clothing, milk, and dung for fertilizer. One group reported that if agricultural productivity could be improved they would opt out of pastoralism.

## **Monitoring and regulation**

All the respondents reported being stopped by Forest Guards, either at Maraur or en route, to have their names and number of livestock recorded. But there was no limit on the number of livestock they could bring.

## **Trends**

The number of grazer groups coming to the area has declined. According to a local, upto 20 years ago there were 12 groups coming from Outer Seraj (Ani tahsil) with several thousand head of livestock each. Now they have been reduced to 5 and only a few have livestock numbering over a thousand. The graziers reported that job opportunities, education and a lack of inclination among the younger generation to make the seasonal trek were some of the reasons why pastoralism was on the decline.

On the other hand more and more people were now keeping sheep and goat in small numbers and grazing them in forests and pastures around their resident villages.

## **Economics**

The income from pastoralism alone ranges between Rs. 10-15,000 to Rs. 20-25,000 for the Ani tahsil graziers. The only local grazer met reported an income of Rs. 7000 from pastoralism. costs ranged between Rs. 750-Rs. 1500 per head for the entire grazing season. This included rations, salt medicine, carriage charges, travel etc. In addition some of the graziers from Ani tahsil also reported an income from cultivation of peas, potatoes and some fruit.

## **Other Information**

A potentially disturbing aspect of seasonal grazing this year was the presence of two gaddis from Kangra District in the Park. They were accompanying Shri Brikamchand of Ropa village, located about 6 km from the Park boundary, and had merged their flock with his. Brikamchand has a right to graze in Shtokni thach in the Sainj valley of GHNP, but is not a regular grazier. He came this year to the Park only because he had the gaddi's with him which made the flock size viable and added helping hands.

The gaddis had come to this area for the first time for summer grazing. In previous years their sheep and goat used to go to Lahaul District. The reason why they chose to come to GHNP this year was a) grass in their traditional grazing grounds has progressively diminished and b) GHNP is much closer than Lahaul in terms of distance from their home villages in Kangra District. They had heard of this region and the fact grazing takes place here, some years ago. Subsequently they sought out people who were rightholders and finally struck a deal for this season with Brikamchand of Ropa.

This year there were only two gaddis who were encountered with about 180 head of livestock between them, but it may set an undesirable precedence with more coming in subsequent years.

## **HERB COLLECTOR'S SURVEY**

### **Methodology**

From previous field visits and records maintained by the Park authorities it was estimated that upto several hundred herb collectors are possibly visiting the Park annually through the season i.e. May-June to September-October. As no reliable information was available on the distribution of the activity across the Park, it was assumed that the three valleys i.e. & Jiwanal , Saving and Tirthan were supporting roughly an equal number of collectors. herb collectors. It was felt if 20 herb collectors could be met on this visit to the Sainj and Tirthan valleys, it would make a fairly representative sample.

Prior to the field visit, the following assumptions were made regarding herb collection.

1. The herb collection season would be well under way and the activity would be at it's peak in July
2. Herb collection is an exclusively male activity
3. Herb collector's would be met inside the Park either in thatches and forests where herbs are found, or en route.

The interviews with herb collector's were also to be carried out on the basis of an interview schedule (HC schedule) . A considerably shortened version of the Sept.'91 schedule was prepared essentially covering the following heads:

- Turnover & costs
- Area(s) of collection
- Legal status
- Monitoring and regulation
- Annual activity cycle and other sources of income
- Impact on Park
- Values and objectives of Park
- Alternatives

Although this schedule was considered complete in itself several additional questions on herb collection were incorporated into a separate schedule (AQHC schedule). This schedule was to be selectively administered by the field visitor wherever it was felt that either a respondent, or any other individual, was a person who was knowledgeable about the activity and was willing to provide the required information. This schedule covered the following heads:

- Herbs and their local use
- Ecological status
- Historical trends
- Legal status

Only one HC schedule and one AQHC schedule were filled as herb collection has yet to commence in earnest in the Sainj Valley. Several people were spoken to in this regard and the following reasons emerged as being responsible for the activity not having started yet:

1. Last winter the area received exceptionally heavy snowfall and the snowmelt has taken that much longer through the summer.
2. As a result herbs and other plants both in thaches and forests are still very small and it is not viable to collect them yet.
3. Irregular rainfall has caused more than normal weed growth in fields and people are still engaged in various agricultural activities not giving them adequate time for herb collection.
4. The number of sunny days, essential for drying herbs once they have been collected, have become unpredictable as a result of the onset of the monsoons in the region. The next run of clear weather will come only at the end of August at which time, reportedly, regular herb collection will also begin.

Nevertheless, information obtained from both these schedules has been summarised below.



## Monitoring and regulation

There have been no restrictions on quantity, species, or area(s) of herb collection. The period of collection is from Jaith (May-June) to Kartik (Oct-Nov.) and herbs may not be collected before or after these months. Quantity and species of herbs are checked by Forests Guards at Maraur and sometimes at Bah.

## Legal status

There did not appear to be any definite knowledge of rights among the respondents. They believe it was given to the village some generations ago and anyone from that village qualifies as a rightholder. The extends upto the Sainj headwaters.

## Trends

Upto 2500 "rightholders" come to the Sainj valley annually, and the number is increasing every year. Nepali settlers are also reported to be doing herb collection now.

New areas of herb collection inside the Park are being opened up constantly as herbs become scarcer in existing areas.

Total quantity of herbs being extracted per annum has increased primarily due to the increase in the number of collectors.

The herb market went commercial at different points in time for different species of herbs. It varies between 40-45 yrs at the earliest for Nihanu (*Valeriana jatamansi*) and 2-3 yrs at the latest for Glaeucda (scientific name not known).

## Ecological status of herbs

Most herbs are now not as abundantly available as before. Also their quality seems to have deteriorated considerably. For example, 6-8 yrs. ago Dhoop roots used to be as thick as a persons forearm (from a 4-5 yr. old plant) but today are only as thick as a finger (from a 1 yr. old plant). Some of the reasons attributed towards this decline in quality in almost all herbs, are:

- early extraction, before a plant can mature
- extraction before plant can seed properly for regenerations
- rise in market demand for herbs leading to an increase in number of collectors.

## Alternatives

No real alternatives to the activity have been considered but if forced to abandon, a government job would be most preferred. The respondents believe that none of the herbs collected can be artificially grown.

## **Economics**

Herb collection yielded an income Rs. 9700 in the 1991 season as against an expenditure of Rs. 1250 for the respondent. It comprises almost 100% of the total annual income other than some from wage labour whenever available.

## **Other information**

One problem with regard to herb collection in the Sainj valley is the increasing number of non-rightholding and illegal collectors coming to the area. As it is the definition of "right" and who exactly qualifies as a "rightholder" has never been very clear. Now there seems to be scant regard for them, and most people go everywhere in the valley where herbs are known to exist. In Maraur village the local people said illegal collectors, pre-season extraction, and general over-extraction had almost completely wiped out herbs in the area.

## **OTHER ISSUES**

### **Poaching**

There appears to have been a marked increase in poaching in the Sainj valley in the past few years. It must be clarified that this statement is being made more as an impression on the basis of conversations with different people and less as a fact, arrived at using a given method of inquiry.

Shri V. Singh, erstwhile Honorary Wildlife Warden GHNP, of Shangarh village, reported 42 Musk deer being killed last winter inside the Park along with an indefinite number of different species of pheasants. He has apparently verified the figure with several independent sources.

Shri Narotam Singh, Forest Guard Maraur Beat, also confirmed increase in Musk deer poaching in the last few years. According to him the poachers have now adopted new tactics to evade the authorities. They are reported to move in groups of upto 10 into the Park and only on moonlit nights. Weapons would already have been deposited at predetermined destinations. Once there, the group splits into two's and three's moving off in different directions. The hunt does not last more than 1 to 2 days at the end of which the musk pods, which are small and easy to conceal, are extracted and the carcasses left behind. According to Shri Narotam Singh the presence of Shakti and Maraur villages inside the Park are a major hinderance to any protection measures that may be envisaged for the area. Most people if encountered on paths or at checkposts claim that they are visiting relatives living in the villages mentioned. He also stated that at present one Forest Guard has far too large an area to cover, with no helpers, arms, equipment or effective system of communications. Reports of poaching were also given by people from various villages adjacent to the park and by some groups of seasonal graziers.

### **Yew leaves smuggling**

Several unconfirmed reports were received of large scale smuggling of leaves of the yew tree (*Taxus baccata*) from all over the National Park. Some of the most dense stands of yew are located around Manjhan village in Jiwa Nal. The Tirthan valley has some scattered trees and in the Sainj there are virtually none. There is apparently a single buyer who has been moving from village to village attempting to identify those willing to supply yew leaves. The final destination of these leaves is reported to be a pharmaceutical firm in Italy.

### **Slate extraction**

Yet another problem reported from the adjacent area of the Park has been the marked increase in slate extraction. The present system involves the government auctioning areas with potential for slate mining to the highest bidder for a given period. All the slate is exported out of the District to markets in Delhi and Bombay, where it is further refined and sold as tiles. Those who do not have the capital to bid for full mines in the open auction are permitted to extract slate in small quantities from any area they wish to. Apparently it is this kind of extraction which is becoming rampant leading to soil degradation. Also tiles for roofing, for the local people, are becoming increasingly difficult to obtain since all that is extracted is being exported.

## ANNEXURE 10: FIELD VISIT 3 (JUNE-JULY, 1994)

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Methodology: Field Visit 3 (June-July 1994)

1. Details of the Field Visit:

Field visit dates: 28th June - 7th July 1994

Duration of site visits: 30th June - 6th July (inclusive)

Field visitors: Anita Dabral, Dev Bahadur, Raman Mehta, Saloni Suri, Vishaish Uppal

People interviewed:

Officials: Shri A.C. Sharma (Field Director)

Others: Some inhabitants of the villages we visited.

2. Methodology used for the Field Visit

The total number of villages in Kullu and Banjar Tahsil falling in the 10 kms belt adjacent to Great Himalayan National Park were 189 villages. The total study area was then divided into four zones i.e. North North West, North West West, South West West, and South South West based on the geographical centre of the park. In each zone all the sample villages were located in the 5 km and 10 km distance away from the park, depending on the number of villages that fell in each sub-category a 5 percent sample was then chosen. We were then able to zero down our study to 9 villages. Out of these nine villages three had earlier been covered by one team which had done a PRA exercise there, therefore, they were excluded from our present sample. The village schedule was administered after all the villagers (mainly males) had been collected. The elders of the village were particularly consulted. The respondents of the household schedule were mainly women, and subsequent analysis did show that their perspective on many issues was quite different to that of the male member of their households.

Villages Surveyed: A Profile:

Finally the six villages we were to survey were: Khuna, Keloban, Chamarda (also known as Dhara Patara), Nevli, Rakshuklu and Chipni.

These villages were located in the Sainj and Tirthan valleys.

The first village we went to was Nevli, the field director also accompanied us to help us break the ice with the villagers as he was quite familiar with this particular village.

We were not able to get an answers to our village questionnaire, but they did come out with their problems and possible alternatives.

Khuna and Keloban were two very small villages. Khuna has only one household and gave a very satisfactory picture of the conditions prevailing in their village. Rakshuklu was the other village with only one house, and since the owner of the house was not available at that point of time, we were unable to administer the village questionnaire. The villagers ofSharan met us in Rakshuklu and urged us to come along with them to their village. As some of our team members had already been to this village, on an earlier field trip, it was easier for them to build up a rapport with the village sarpanch. The villagers also seemed to have confidence in the team's, sincerity of purpose.

In Chipni village the field director wanted us to demonstrate a detailed PRA exercise for the benefit of his staff, therefore two of his field officers came along with us to Chipni. Here information for the village schedule was basically derived from the PRA exercises done.

On the whole the trip was extremely fruitful as we were able to administer all our village schedules and household schedules in our sample. The weather was with us most of the time, although rain did make us lose some time here and there, but no full day was lost because of continuous rain.

ANNEXURE 11: LOCAL CALENDAR OF MONTHS OF THE YEAR

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Local Name	Equivalent in English Months
Chait	March-April
Baisakh	April-May
Jaith	May-June
Haad	June-July
Sawan	July-August
Bhadon	August-September
Sauj	September-October
Kartik	October-November
Mankshar	November-December
Poh	December-January
Maagh	January-February
Phagun	February-March

## ANNEXURE 12: FOREST TYPES REPORTED FROM GREAT HIMALAYAN NP

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- 1) Ban Oak Forest 12/C1(a)
- 2) Moist Deodar Forest 12/C1(c)
- 3) Western Mixed Coniferous Forest 12/C1(d)
- 4) Moist Temperate Deciduous Forest 12/C1(e)
- 5) Kharsu Oak Forest 12/C2(a)
- 6) Western Himalayan Upper Oak/Fir Forest 12/C2(b)
- 7) Montane Bamboo Brakes 12/DS1
- 8) Himalayan Temperate Parkland 12/DS2
- 9) Himalayan Temperate Pastures 12/DS3
- 10) West Himalayan Sub-Alpine Fir Forest 14/C1(a)
- 11) Sub-Alpine Pastures 14/DS1
- 12) Birch/Rhododendron Scrub Forest 15/C1
- 13) Deciduous Alpine Scrub 15/C2
- 14) Alpine Pastures 15/C3

## ANNEXURE 13: LIST OF PLANT SPECIES REPORTED FROM GREAT HIMALAYAN NP

[Source: dir, Park Authorities/FV2]

Botanical Name	English Name	Family	Local Name	Source
<i>Abies pindrow</i>	Himalayan Silver Fir	Pinaceae	Tos	dir, PA/FV2
<i>Abies spectabilis</i>	East Himalayan Silver Fir	Pinaceae		dir
<i>Acacia catechu</i>	Cutch tree	Fabaceae		dir
<i>Acacia dealbata</i>	Silver Wattle	Fabaceae		dir
<i>Acer villosum</i>	Maple	Mandru		PA/FV2
<i>Acer caesium</i>	Maple	Aceraceae	Mandru	dir, PA/FV2
<i>Acer cappadocicum</i>	Maple	Aceraceae		dir
<i>Acer caudatum</i>	Maple	Aceraceae		dir
<i>Acer oblongum</i>	Himalayan Maple	Aceraceae	Mandru	dir, PA/FV2
<i>Acer pictum</i>	Maple	Aceraceae		dir
<i>Acer thomsonii</i>	Maple	Aceraceae		dir
<i>Aconitum chasmanthum</i>	Indian Napellus	Ranunculaceae		dir
<i>Aconitum heterophyllum</i>	Atis Root	Ranunculaceae	Padish, Mohra	dir, PA/FV2
<i>Acorus calamus</i>	Sweep flag	Barin/Boj		PA/FV2
<i>Adhatoda vasica</i>	Acanthaceae	Basuti		dir, PA/FV2
<i>Adina cordifolia</i>	Rubiaceae			dir
<i>Aegle marmelos</i>	Bael Tree	Rutaceae		dir
<i>Aesculus indica</i>	Indian Horse Chestnut	Sapindaceae	Khanor	dir, PA/FV2
<i>Ainsliaea aptera</i>	Asteraceae	Durwa		dir
<i>Ajuga parviflora</i>	-	Darpatre		PA/FV2
<i>Albizia lebbek</i>	East Indian Walnut	Fabaceae		dir
<i>Albizia odoratissima</i>	Fabaceae	Siris		dir, PA/FV2
<i>Albizia julibrissin</i>		Siris		PA/FV2
<i>Albizia procera</i>		Siris		PA/FV2
<i>Albizia stipulate</i>		Ohi		PA/FV2



Botanical Name	English Name	Family	Local Name	Source
<i>Alnus nepalensis</i>	Indian Alder	Betulaceae		dir
<i>Alnus nitida</i>	Alder	Betulaceae	Kosh	dir, PA/FV2
<i>Anaphalis cinnamomea</i>	-	-		PA/FV2
<i>Anaphalis contorta</i>	-	-		PA/FV2
<i>Anaphalis triplinervis</i>	-	-		PA/FV2
<i>Andropogon halepensis</i>	-		Phulna	PA/FV2
<i>Androsaca rotundifolia</i>	-	-		PA/FV2
<i>Androsace lanuginosa</i>	-	-		PA/FV2
<i>Anemone obtusiloba</i>		Ranunculaceae	-	dir, PA/FV2
<i>Anemone rivularis</i>	-		Carbini mamiri	PA/FV2
<i>Angelica glauca</i>		Apiaceae		dir
<i>Anogeissus latifolia</i>		Combretaceae		dir
<i>Aquilegia pubiflora</i>	Columbine		-	PA/FV2
<i>Aralia cachemirica</i>	-	-		PA/FV2
<i>Argemone mexicana</i>	-	-		PA/FV2
<i>Arisaema helleberifolium</i>	Cobra Plant	Araceae	-	dir, PA/FV2
<i>Arisaema intermedium</i>	-		-	PA/FV2
<i>Arisaema wallichianum</i>	-		-	PA/FV2
<i>Artemisia maritima</i>	Worm Seed	Asteraceae		dir, PA/FV2
<i>Artemisia vestita</i>	-		-	PA/FV2
<i>Artemisia vulgaris</i>	Indian Worm Wood	Asteraceae	Drubsha	dir, PA/FV2
<i>Arundinaria spathiflora</i>	-		Gari, ringal	PA/FV2
<i>Arundinaria falcata</i>		Poaceae	Nirgal	dir, PA/FV2
<i>Asparagus adscendens</i>	-		Sahasimuli	PA/FV2
<i>Aster asperulus</i>	-		-	PA/FV2
<i>Aster molliusculus</i>	-		-	PA/FV2
<i>Atropa belladonna</i>	Belladonna	Solanaceae	Saagngnr	dir, PA/FV2
<i>Bauhinia variegata</i>		Fabaceae		dir
<i>Benthamidia capitata</i>		Cornaceae		dir

Botanical Name	English Name	Family	Local Name	Source
<i>Berberis angulosa</i>		Berberidaceae		dir
<i>Berberis aristata</i>	Indian Barberry	Berberidaceae	Kasmal	dir, PA/FV2
<i>Berberis chitria</i>			Kasmal	PA/FV2
<i>Berberis lycium</i>		Berberidaceae	Kasmal	dir, PA/FV2
<i>Betula alnoides</i>	Indian Birch	Betulaceae	Kosh	dir, PA/FV2
<i>Betula utilis</i>	Himalayan Silver Birch	Betulaceae	Bhujpatar	dir, PA/FV2
<i>Boenninghausenia albiflora</i>	-		Pessumar	PA/FV2
<i>Buddleja paniculata</i>		Buddlejaceae	Safedchindua	dir, PA/FV2
<i>Bupleurum tenue</i>	-		Ban jwain	PA/FV2
<i>Buxus wallichiana</i>	Box Wood	Buxaceae		dir
<i>Caltha palustris</i>		Ranunculaceae	-	dir, PA/FV2
<i>Cannabis sativa</i>	True Hemp	Cannabinaceae	Bhang	dir, PA/FV2
<i>Carpinus viminea</i>	Horn beam	Betulaceae	Khirki	dir, PA/FV2
<i>Carum copticum</i>			Ajwain, Jawain	PA/FV2
<i>Cedrela serrata</i>	Hill Toon	Meliaceae	Darl	dir, PA/FV2
<i>Cedrela toona</i>	Red Cedar	Meliaceae	Tnn	dir, PA/FV2
<i>Cedrus deodara</i>	Deodar	Pinaceae	Dyar	dir, PA/FV2
<i>Celtis australis</i>	Nettle tree	Ulmaceae	Khirk	dir, PA/FV2
<i>Clematis connata</i>	Traveller's Joy	Ranunculaceae	-	dir, PA/FV2
<i>Clematis gouriana</i>	-		Belkangu, Chabru	PA/FV2
<i>Clematis grata</i>	Traveller's Joy	Ranunculaceae	-	dir, PA/FV2
<i>Clematis montana</i>	Traveller's Joy	Ranunculaceae	-	dir, PA/FV2
<i>Cocculus laurifolius</i>	-	-		PA/FV2
<i>Colebrookea oppositifolia</i>		Lamiaceae	Vansa	dir, PA/FV2
<i>Coriaria nepalensis</i>		Coriariaceae	Masuri	dir, PA/FV2
<i>Cornus capitata</i>	Dog wood		Karchhan	PA/FV2
<i>Cornus macrophylla</i>	Dog wood	Comaceae	Karchhan	dir
<i>Corylus colurna</i>	Turkish Hazelnut	Betulaceae	Sharol	dir, PA/FV2
<i>Cotinus coggygria</i>	Indian Sumach	Anacardiaceae		dir

Botanical Name	English Name	Family	Local Name	Source
<i>Cotoneaster acuminata</i>		Rosaceae	Riunsh	dir, PA/FV2
<i>Cotoneaster bacillaris</i>		Rosaceae	Riunsh	dir, PA/FV2
<i>Cotoneaster microphylla</i>		Rosaceae	Rinush	dir, PA/FV2
<i>Cupressus sempervirens</i>	Pyramidal cyprus		Sarn	PA/FV2
<i>Cupressus torulosa</i>	Himalayan Cypress	Pinaceae	Devidiar	dir, PA/FV2
<i>Cuscuta reflexa</i>	-		Akash bel	PA/FV2
<i>Cynodon dactylon</i>	-		Dub	PA/FV2
<i>Dalbergia sissoo</i>	Shisham	Fabaceae	Shisham Tali	dir
<i>Danthonia cachemyriana</i>		Poaceae		dir
<i>Daphne papyracea</i>		Thymelaeaceae	Gandlri	dir, PA/FV2
<i>Datura stramonium</i>	-	Datura		PA/FV2
<i>Delphinium</i>	-		-	PA/FV2
<i>Delphinium elatum</i>	-		-	PA/FV2
<i>Delphinium vestium</i>	-		Kalulu	PA/FV2
<i>Dendrocalamus strictus</i>	Male Bamboo	Poaceae	Bans	dir, PA/FV2
<i>Desmodium sambuense</i>	-		Safed Kethi	PA/FV2
<i>Desmodium tiliaefolium</i>		Fabaceae	Safed Kethi	dir, PA/FV2
<i>Deutzia corymbosa</i>	Wild Syringe	Saxifragaceae	Chruru	dir
<i>Deutzia staminea</i>		Saxifragaceae	Chururu	dir, PA/FV2
<i>Dicliptera bupleuroides</i>	-		-	PA/FV2
<i>Dioscorea belophylla</i>	-		Tardi	PA/FV2
<i>Dioscorea bulbifera</i>	-		-	PA/FV2
<i>Dioscorea deltoidea</i>		Dioscoreaceae	Galendi	dir, PA/FV2
<i>Dipsacus inermis</i>	-		Tori	PA/FV2
<i>Elsholtzia incisa</i>	-		Banjwana	PA/FV2
<i>Elsholtzia polystachya</i>	-		Pothi Jaunkra	PA/FV2
<i>Emblica officinalis</i>	Indian Gooseberry	Euphorbiaceae		dir
<i>Enonymus lacerus</i>	-		-	PA/FV2
<i>Eriophorum comosum</i>	False bhabr		Ghor bagar	PA/FV2

Botanical Name	English Name	Family	Local Name	Source
<i>Euonymus hamiltonianus</i>	Indian Spinola-Tree		Kala Chindwara	PA/FV2
<i>Euonymus tingens</i>	Indián Spinola-Tree		Kala Chindwara	PA/FV2
<i>Euphorbia prolifera</i>	-		-	PA/FV2
<i>Euphorbia royleana</i>		Euphorbiaceae		dir, PA/FV2
<i>Euphorbia tirucalli</i>	-		-	PA/FV2
<i>Festuca rubra</i>		Poaceae		dir
<i>Ficus hispida</i>	Wild Fig		Dagre	PA/FV2
<i>Ficus nemoralis</i>	Wild Fig	Moraceae		dir
<i>Ficus palmata</i>	Wild Fig	Moraceae	Fegra	dir, PA/FV2
<i>Ficus religiosa</i>	Peepal	Moraceae	Pipal	dir, PA/FV2
<i>Fragaria indica</i>		Rosaceae		dir
<i>Fragaria vesca</i>	Alpine Strawberry	Rosaceae	-	dir, PA/FV2
<i>Fraxinus floribunda</i>	Ash	Oleaceae	Angu	dir, PA/FV2
<i>Galium sp.</i>	-		-	PA/FV2
<i>Gentiana kurroo</i>	-		Karu	PA/FV2
<i>Geranium nepalense</i>	Cranio's bill		Tirahni	PA/FV2
<i>Geranium ocellatum</i>	-		-	PA/FV2
<i>Geranium robertianum</i>	Herb robert		-	PA/FV2
<i>Geranium wallichianum</i>	Wallich Cranesbill	Geraniaceae	Chowhri	dir, PA/FV2
<i>Gerbera Januginosa</i>	-		Kopra	PA/FV2
<i>Geum urbanum rosaceae</i>	-		-	PA/FV2
<i>Girardinia heterophylla</i>	Himalayan Nettle	Urticaceae	Bichhu buti	dir, PA/FV2
<i>Gnaphalium luteoalbum</i>	-		-	PA/FV2
<i>Grewia elatitca</i>	-		Bihul	PA/FV2
<i>Grewia oppositifolia</i>		Tiliaceae	Bihul	dir, PA/FV2
<i>Hedera helix</i>	Nepal Ivy	Araliaceae	Grumru	dir, PA/FV2
<i>Ilex dipyrrena</i>		Aquifoliaceae	Kanderu	dir, PA/FV2
<i>Impatiens amphorata</i>	Balsam		-	PA/FV2
<i>Impatiens roylei</i>	Balsam		-	PA/FV2

Botanical Name	English Name	Family	Local Name	Source
<i>Impatiens scabrida</i>	Balsam		-	PA/FV2
<i>Impatiens thomsoni</i>	Balsam		-	PA/FV2
<i>Indigofera gerardiana</i>	Himalayan Indigo	Fabaceae	Kathi	dir, PA/FV2
<i>Indigofera hebeptala</i>		Fabaceae	-	dir, PA/FV2
<i>Indigofera heterantha</i>	-		-	PA/FV2
<i>Indigofera pulchella</i>	Indigofera	Fabaceae	-	dir, PA/FV2
<i>Indula cappa</i>	-		-	PA/FV2
<i>Inula grandiflora</i>	-		-	PA/FV2
<i>Ipomaea spp.</i>	-		-	PA/FV2
<i>Iris nepalensis</i>	-		Kharera/Brechra	PA/FV2
<i>Ischaemum angustifolium</i>	-		Baggar	PA/FV2
<i>Jacaranda ovalifolia</i>	-		Jacranda	PA/FV2
<i>Jasminum humile</i>	Yellow Jasmine	Oleaceae	-	dir, PA/FV2
<i>Jasminum officinale</i>	Common Jasmine	Oleaceae	Banmalti	dir, PA/FV2
<i>Jasminum pubescens</i>	-		Dure	PA/FV2
<i>Jatropha curcas</i>	-		Japlota	PA/FV2
<i>Juglans regia</i>	Walnut	Juglandaceae	Khor	dir, PA/FV2
<i>Juniperus communis</i>	Common Juniper	Pinaceae	Japlota	dir, PA/FV2
<i>Juniperus macropoda</i>	Himalayan Pencil Cedar	Pinaceae		dir
<i>Juniperus squamata</i>	Weeping Blue Juniper	Pinaceae		dir
<i>Jurinea macrocephala</i>		Asteraceae		dir
<i>Lagerstroemia Indica</i>	-		Harshingar	PA/FV2
<i>Lannea grandis</i>	-		Salambra	PA/FV2
<i>Lespedeza floribunda</i>	-		-	PA/FV2
<i>Lilium giganteum</i>	-		-	PA/FV2
<i>Lilium thomsonianum</i>	-		-	PA/FV2
<i>Litsaea chinensis</i>	Laurei		Paror/Chirndi	PA/FV2
<i>Litsaea polyantha</i>	Laurei		Paror/Chirndi	PA/FV2
<i>Litsea umbrosa</i>		Lauraceae	Paror/Chirndi	dir, PA/FV2

Botanical Name	English Name	Family	Local Name	Source
<i>Lonicera angustifolia</i>	Honey suckle	Caprifoliaceae	Changari	dir, PA/FV2
<i>Lonicera parvifolia</i>		Caprifoliaceae	-	dir, PA/FV2
<i>Lonicera quinquelocularis</i>	Himalayan Honey Suckle	Caprifoliaceae	Lhangari	dir, PA/FV2
<i>Machilus duthiei</i>		Lauraceae	Dodru	dir, PA/FV2
<i>Machilus odoratissima</i>		Lauraceae	Dordru	dir, PA/FV2
<i>Malus baccata</i>	Siberian Crab Apple	Rosaceae		dir
<i>Melia azedarach</i>	Persian lilac	Meliaceae	Drek	dir, PA/FV2
<i>Mentha sylvestris</i>	-		Pondina	PA/FV2
<i>Microomeira biflora</i>	-		-	PA/FV2
<i>Morus serrata</i>	Himalayan Mulberry	Moraceae	Pahari Tut	dir, PA/FV2
<i>Myrica esculenta</i>	Box Myrtle	Myricaceae		dir
<i>Myrsine africana</i>		Myrsinaceae	Kanaru, Bandraru	dir, PA/FV2
<i>Nepeta ciliaris</i>	-		Brun	PA/FV2
<i>Nepeta-elliptica</i>	-		-	PA/FV2
<i>Nerium odorum</i>	Oleander		-	PA/FV2
<i>Olea cuspidata</i>	Indian Wild Olive	Oleaceae	Kahu	dir, PA/FV2
<i>Origanum vulgare</i>	-		-	PA/FV2
<i>Parnassia nubicola</i>	-		-	PA/FV2
<i>Pedicularis megalantha</i>	-		-	PA/FV2
<i>Pergularia daemia</i>		Asclepiaceae		dir
<i>Picea smithiana</i>	West Himalayan Spruce	Pinaceae	Rai	dir, PA/FV2
<i>Picrothiza kurroa</i>		Scrophulariaceae		dir
<i>Pieris ovalifolia</i>	-		Bheral/Ehlan	PA/FV2
<i>Pinus roxburghii</i>	Chir Pine	Pinaceae	Chil	dir, PA/FV2
<i>Pinus wallichiana</i>	Blue Pine	Pinaceae	Kail	dir, PA/FV2
<i>Pistacia integrima</i>		Anacardiaceae	Kakar	dir
<i>Plectranthus coetsa</i>	-		Bangra	PA/FV2
<i>Plectranthus rugosus</i>		Lamiaceae	Chichri	dir, PA/FV2
<i>Podophyllum emodi</i>	Indian Podophyllum	Berberidaceae		dir

Botanical Name	English Name	Family	Local Name	Source
<i>Podophyllum hexandrum</i>	Indian Podophyllum	Berberidaceae	Ban Kakri/Papri	dir, PA/FV2
<i>Polygonatum verticillatum</i>	-		Salang mishri	PA/FV2
<i>Polygonum alatum</i>	-		Malora	PA/FV2
<i>Polygonum capitatum</i>	-		-	PA/FV2
<i>Populus ciliata</i>	Himalayan Poplar	Salicaceae	Fuls	dir, PA/FV2
<i>Potentilla argrophylla</i>		Rosaceae	-	dir, PA/FV2
<i>Potentilla fruticosa</i>	-		-	PA/FV2
<i>Potentilla fulgens</i>	-		-	PA/FV2
<i>Potentilla nepalensis</i>		Rosaceae	Dora	dir, PA/FV2
<i>Potentilla rigida</i>	-		-	PA/FV2
<i>Potentilla sibbaldi</i>	-		-	PA/FV2
<i>Primula denticulata</i>		Primulaceae	-	dir, PA/FV2
<i>Primula petiolaris</i>	-		Kauri	PA/FV2
<i>Prinsepia utilis</i>		Rosaceae	Bekhal	dir
<i>Prunus cerasoides</i>	Wild cherry		Paja	PA/FV2
<i>Prunus armeniaca</i>	Common Apricot	Rosaceae	Chnli	dir, PA/FV2
<i>Prunus padus</i>	Himalayan Birdcherry	Rosaceae	Jamu	dir, PA/FV2
<i>Prunus persica</i>	-		Aru	PA/FV2
<i>Prunus prostrata</i>		Rosaceae		dir
<i>Punica granatum</i>	Pomengranate	Punicaceae	Dom	dir, PA/FV2
<i>Pyrus pashia</i>	Wild Madlar	Rosaceae	Shegal Kainth	dir, PA/FV2
<i>Quercus dilatata</i>	Green Oak	Fagaceae	Mohru	dir, PA/FV2
<i>Quercus glauca</i>	Blue Japanese Oak	Fagaceae	Banni	dir, PA/FV2
<i>Quercus incana</i>	Grey Oak	Fagaceae	Ban	dir, PA/FV2
<i>Quercus semecarpifolia</i>	Brown Oak	Fagaceae	Kharus	dir, PA/FV2
<i>Ranunculus arvensis</i>	Butter cup		-	PA/FV2
<i>Reinwardtia trigyna</i>	-		Piyan	PA/FV2
<i>Rhododendron anthopogon</i>		Ericaceae		dir
<i>Rhododendron arboreum</i>	Tree Rhododendron	Ericaceae	Brah	dir, PA/FV2

Botanical Name	English Name	Family	Local Name	Source
<i>Rhododendron arboreum</i>	Red Rhododendron	Ericaceae	Brah	dir
<i>Rhododendron campanulatum</i>	White Rhododendron	Ericaceae	Kashmiri patha	dir, PA/FV2
<i>Rhododendron lepidotum</i>		Ericaceae		dir
<i>Rhus cotinus</i>		Anacardiaceae		dir, PA/FV2
<i>Rhus punjabensis</i>		Anacardiaceae	Titri	dir, PA/FV2
<i>Rhus semi-alata</i>	Smallpox tree		Arkhor	PA/FV2
<i>Rhus semialata</i>	-		Rikhal	PA/FV2
<i>Robinia pseudo-acacia</i>	-		Robinia	PA/FV2
<i>Rosa macrophylla</i>		Rosaceae	Kuja	dir, PA/FV2
<i>Rosa moschata</i>	Wild Rose	Rosaceae	Kuja	dir, PA/FV2
<i>Rubus biflorus</i>	Raspberry Red	Rosaceae		dir, PA/FV2
<i>Rubus ellipticus</i>		Rosaceae	Kala akha	dir, PA/FV2
<i>Rubus lasiocarpus</i>	-		Kalae akha	PA/FV2
<i>Rubus paniculatus</i>	Raspberry Yellow	Rosaceae	Kala-akha	dir, PA/FV2
<i>Rumex hastatus</i>		Polygonaceae	-	dir, PA/FV2
<i>Salix babylonica</i>	Weeping Willow	Salicaceae	Majnu	dir, PA/FV2
<i>Salix daphnoides</i>	Violet Willow	Salicaceae		dir, PA/FV2
<i>Salix denticulata</i>		Salicaceae		dir, PA/FV2
<i>Salix elegans</i>		Salicaceae	Beuns	dir, PA/FV2
<i>Salix hastata</i>	-		Buins	PA/FV2
<i>Salix tetrasperma</i>	Indian Willow	Salicaceae	Beuns	dir, PA/FV2
<i>Salvia malabarica</i>	Cottonwood	Bombacaceae	Semal	dir, PA/FV2
<i>Salvia glutinosa</i>	Dog Flower	Lamiaceae	Gwadra	dir, PA/FV2
<i>Salvia lanata</i>	-		-	PA/FV2
<i>Salvia moorcroftiana</i>		Lamiaceae		dir
<i>Sapindus mukorossi</i>	Northern Soapnut Tree	Sapindaceae	Ritta	dir, PA/FV2
<i>Sarcococca saligna</i>		Buxaceae	Charabri	dir
<i>Satyrium nepalense</i>	-		-	PA/FV2
<i>Saussurea lappa</i>	Costus	Asteraceae		dir



Botanical Name	English Name	Family	Local Name	Source
<i>Saxifraga diversifolia</i>	-		-	PA/FV2
<i>Senecio chrysanthemoides</i>	-		-	PA/FV2
<i>Skimmia laureola</i>	-		Nayr	PA/FV2
<i>Solanum verbascifolium</i>	-		Ban tamakhu	PA/FV2
<i>Spiraea bella</i>		Rosaceae	-	dir, PA/FV2
<i>Spiraea canescens</i>		Rosaceae	Chaku, Khusti	dir, PA/FV2
<i>Spiraea lindlayana</i>	-		Kaltri	PA/FV2
<i>Spiraea sorbifolia</i>		Rosaceae		dir
<i>Spiraea vestita</i>	-		-	PA/FV2
<i>Stellario latifolia</i>	-		-	PA/FV2
<i>Strobilanthes angustifrons</i>	-		-	PA/FV2
<i>Strobilanthes dalhousianus</i>	-		-	PA/FV2
<i>Strobilanthes glutinosus</i>	-		-	PA/FV2
<i>Strobilanthes stropurpureus</i>	-		Mashna	PA/FV2
<i>Swertia paniculata</i>	-		Charaita	PA/FV2
<i>Swertia cordata</i>	-		Charaita	PA/FV2
<i>Swertia chirata</i>	-		Charaita	PA/FV2
<i>Symplocos crataegoides</i>	-		-	PA/FV2
<i>Syringa emodi</i>	-		-	PA/FV2
<i>Tamarix gallica</i>	-		Jhao	PA/FV2
<i>Taxus baccata</i>	Common Yew	Taxaceae	Barmi/Rakhal	dir, PA/FV2
<i>Thalictrum chelidonii</i>	-		-	PA/FV2
<i>Thalictrum foliolosum</i>		Ranunculaceae	-	dir, PA/FV2
<i>Thalictrum neurocarpum</i>	-		Barmot	PA/FV2
<i>Thalictrum javanicum</i>	-		-	PA/FV2
<i>Thermopsis barbata</i>	-		-	PA/FV2
<i>Thymus serpyllum</i>	Wild Thyme	Lamiaceae	Ban ajwayan	dir, PA/FV2
<i>Trifolium minus</i>	Yellow Suckling Clover	Fabaceae		dir
<i>Ulmus laevis</i>	Small leaf elm		Marinu	PA/FV2

Botanical Name	English Name	Family	Local Name	Source
<i>Ulmus wallichiana</i>	Big Leaved Elm	Ulmaceae	Marinu	dir, PA/FV2
<i>Valeriana hardwickii</i>		Valerianaceae	Nihani-Nakh	dir, PA/FV2
<i>Valeriana pyrolaefolia</i>	-		-	PA/FV2
<i>Valeriana wallichii</i>		Valerianaceae	Mushkbala	dir, PA/FV2
<i>Valeriana jatamansi</i>	Indian Valerian	Valerianaceae		dir
<i>Viburnum coriaceum</i>	-		Diha	PA/FV2
<i>Viburnum cotinifolium</i>		Caprifoliaceae	Dab	dir, PA/FV2
<i>Viburnum grandiflorum</i>		Caprifoliaceae		dir
<i>Viburnum mullaha</i>		Caprifoliaceae		dir
<i>Viburnum nervosum</i>		Caprifoliaceae		dir, PA/FV2
<i>Viburnum satellulatum</i>	-		-	PA/FV2
<i>Viola odorata</i>		Violaceae		dir
<i>Viola patrinii</i>	Violet		Banajsha	PA/FV2
<i>Viola serpens</i>	Violet		Banajsha	PA/FV2
<i>Vitex negundo</i>		Verbenaceae	Banka	dir, PA/FV2
<i>Vitis himalayana</i>		Vitaceae		dir
<i>Vitis semicordata</i>	-	Mizao		PA/FV2
<i>Woodfordia fruticosa</i>	Fire-flame Bush	Lythraceae		dir, PA/FV2
<i>Zanthoxylum armatum</i>		Rutaceae		dir, PA/FV2

## ANNEXURE 14: SOME DETAILS OF THE DISTRIBUTION OF FOREST TYPES AND FLORA IN GREAT HIMALAYAN

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[Source: Extracts from Management Plan]

**Flora** The vegetation in Sainj valley is remarkably similar to that of Tirthan valley. Northerly aspects are clothed with dense forest (mostly temperate forests) dominated below 2000m by Blue pine, and higher up by a diverse deciduous broad leaved crop on moderately sloping area and Fir on steep areas. The Tirthan Valley, between Bandal and Rolla, also supports small areas of lower altitude Oak forests. Southerly aspects are generally made up of stands of blue pine and Deodar, is interspersed in grass lands above 2000 meters elevation, Kharsu-Oak occurs in pure form. There are extensive meadows above the line, particularly on the southern side of Sainj valley above Shangarh and Dela Thach, & above Lapah.

The following major types of forests have been distinguished for the National Park area and as per champion and Seth's classification of Forests:-

### 12/C1a Moist Deodar Forests

This forests type is not very common in the park area. But scattered patches do occur around Lapah, Shangarh and above Deori village in the buffer area. This type occurs most commonly from 1700 meters to 2500 meters.

Overwood consists of Deodar and Occasional blue pine. Middle storey is of sporadic *Quercus incana*. The other deciduous associates, especially in depressions, are *Quercus dilatata*, *Celtis australis*, *Cedrella serrata*, *Ulmua wallichiana*, *Juglans regia* and *Aesculus indica*.

Undergrowth is not much pronounced but the most frequently distributed species are *parrotia jacquemontiana*, *Viburnum contifolium*, *Indifofera geradiana*, *Desmodium species*, *Rubus spp.*, *Lonicera quinqueloculari*, *Rosa moschata*, *Jasminum officinale* and *Daphne papyrace*

Ground cover commonly consists of *viola canescene*, *Aremesia vulgaris*, *Valeriana spp.*, *Sarcococa*, Ferns and grasses.

### 12/C1d. Western Mixed Coniferous Forests

This type covers the major part of the total forested park area. These forests occur above 2200 metres, more commonly between 2400-3000 metres, and are much more pronounced on the Northern aspects. Overwood consists of *Picea smithiana*, *Cedrus deodara*, *Abies pindrew* and *Pinus wallichiana*.

Middle story consists of *Quercus*, *Acer*, *Aesculus indica*, *Juglans regia*, *Celtis australis*.

Some of the plant species found at the shrub level are *Ionicera*, *Spiraea species*, *Deutzia*, *Contoneaster*, *Berberis species*, *Viburnum*, *Indigofera spp.*

The under story consists of *Viola*, *Potentilla*, *valeriana*, *Fragaria*, *Salvia glutinosa* and other Ferns and grass spp.

12/Cla. Ban Oak-Forests (*Quercus incana*)

This type occurs in patches in between Bandal and Rolla and in Shangarh/Nyul/Lapah and Garsa valley. It is frequently associated with *Quercus dilatata*, *Cedrus deodara* and Blue pine towards upper limit, and Chil Pine towards lower limit. *Rhododendron arboreum*, *Lyonia dipyrena*, *Ilex dipyrens*, *Viburnum*, *Desmodium*, *Indigofera*, *Rubus spp.* are other associates.

12/C le. Moist Temperate Deciduous Forests

This type extends upto 2700 metres in moist hollows and depressions often as strips along the streams of Tirthan and Sainj Valleys. Predominant species are *Aesculus indica*, *Acer pictu*, *Acer caesium*, *Ulmus*, *Betula*, *Fraxinus*, *Juglans*, *Quercus* and *Prunus*.

12/C (2 a) Kharsu Oak-Forests (*Quercus semecarpifolia*)

This type occurs between 2500 m to 3300 m particularly along southern aspects of Parvati, Hurla, Sainj, Tirthan, and Bathad valleys. It is typically gregarious forming pure crops but it is frequently mixed with *Picea amithiana*, *Abies pindrow*, *Quercus dilatata* and *Betula species* etc.

12/C(2 b) Western Himalayan Upper Oak-Fir Forests.

This is conspicuous in the higher ranges above 2600m in Sainj and Tirthan Valleys. It is typically a two storey high forest with Silver fir standing singly or in groups with Oak and other broad leaved trees. The overwood consists of *Abies indrow* with occasional *Picea semecarpifolia*. The middle storey consist of *Qercus semecarpifolia*, *Quercus dilatata*, *Rhedodendron*, *Acer*, *Betula*, *Ilex* etc.

15/C Birch Rhododendron Scrub Forests

This type occurs above 3500m in Parvati, Tirthan and Sainj Valleys. Vegetation consists entirely of *Rhododendrons* with some Birch and other deciduous trees.

15/C 2 Deciduous Alpine Scrub

This type is typical above 3350m elevations. It is not a tree forest type. It consists of low deciduous scrub formation usually forming a dense cover. Extensive patches of dwarf Rhododendron and Betula do occur.

15/C 3 Alpine Pastures

These are found above the three line and locally called "Thaches". Alpine pastures are especially preferred by migratory graziers. A number of medicinal plants and herbs grow in these areas, collection of which during summer leads to much ecological disturbance.

12 DS 1 Montana Bamboo brakes (*Arandinana falcata* & *Arandinana sparthiflora*)

These two bamboos occur as undergrowth in the mixed coniferous, moist deodar & Ban Oak forests. *A. falcata* is confined to lower zone. & *A. sparthiflora* occurs in spruce & silver fir zones. They occupy generally moist northern slopes and form thick growth excluding all other shrubs. These are prominent in Tirthan and Sainj Valleys.

12 Ds 2 Himalayan Temperate Park lands:

This type generally occurs in fir & Kharsu zones. These are grass lands with scattered trees of silver fir, bird cherry, maple & Kharsu. Ground is covered by *Anemone*, *Potentilla*, *Fragaria*, *Viola*, *Delphinium*, *Primula*, *Polygonum*, *Trifolium* species. They are frequently met with in Jiwa, Sainj and Tirthan valleys.

c 12 DS 3 Himalayan Temperate Pasture:

This type occurs in fir Kharsu oak zones & is characterised by the absence of tree growth. The same type of flora is met with here as in Park lands Himalayan temperate . All the three valleys, namely Jiwa, Tirthan, & Sainj, are dotted with such pastures.

14 Cl a Western Himalayan Sub Alpine fir forests

This type occurs above 3000m high level. Silver fir is found in small groups with some kharsu & Birch. The under growth is the same as found in kharsu oak forest. This type is also met with in all three valleys.

14 DS I Sub Alpine Pastures:

These are summer grazing ground, with occasional bushes of Rhododendron. The ground flora comprises of *Primula*, *Caltha*, *Potentilla* and *Ranunculus* species. There are extensive pastures of this type in the core area.

Land Use:

Out of total 620 sq. kms - of core area, as already stated 619.3 sq.kms. is Forest area and 90.7 sq. kms. are at present included cultivations.

The forest area has numerous extensive thatches & alpine pastures where local and migratory grazing taken place in summer. Most of the forests being inaccessible have remained un-worked & are almost in a virgin state. The alpine thatches are the sources of medicinal plants which are extracted by the local inhabitants, Who dig them out.

## ANNEXURE 15: SCIENTIFIC, LOCAL AND ENGLISH NAMES OF HERBS REPORTED FROM GREAT HIMALAYAN NP

(Source: PA, HC S1, FV1, FV2, A.J. Gaston, A. Rastogi)

SCIENTIFIC NAME	LOCAL NAME	ENGLISH NAME
	Chunker (PA/FV1)	
	Mathosal (PA/FV1)	
	Anjbar (PA/FV1)	
	Sothi (PA/FV1)	
	Duji maora	
	Burinchuri	
	Galai kara	
	Thunt	
	Parshoshan (PA/FV1)	
	Haldi maora	
	Lalchuri	
	Mehendi	
	Bajh rosts (PA/FV1)	
		Barnunculum root (PA/FV1)
	Banchora (PA/FV1)	
Aconitum heterophyllum	Ateas, Atis, Patis	
Acorus calamus (PA/FV1)	Bach	
Ainsliaea aptera (PA/FV1)	Karaibuti, Sathjalari	
Angelica glauca	Chora	

SCIENTIFIC NAME	LOCAL NAME	ENGLISH NAME
<i>Artemisia maritima</i> (PA/FV1)	Seski, Kirmala	
<i>Atropa acuminata</i> (PA/FV1)	Jharka?	Belladonna
<i>Berberis lycium</i> (PA/FV1)	Kasmal, Kirmora	
<i>Cuminum cyminum</i> / <i>Carum carvi</i> ?	Kala jeera (PA/FV1)	
<i>Dactylorhiza hatagirea</i>	Hathpanja, Salam Panja, Hathjari	
<i>Dioscorea deltoidea</i>	Shingli mingli	
<i>Girardiana heterophylla</i>	Bichhu booti, Chikri	Nettle
<i>Jurinea macrocephala</i>	Dhoop, Gugal	
<i>Kaemferia galanga</i> (PA/FV1)	Kapoor kachri, Chandra moola	
<i>Leptadenia reticulata</i> (PA/FV1)	Dori	
<i>Morchella esculenta</i>	Gucchi	Morell mushroom
<i>Nardostachys jatamansi</i> (PA/FV1)	Jatamansi, Balchora	
<i>Physochilaina praealata</i> (PA/FV1)	Bajar bang, Laltang	
<i>Picrorhiza kurroa</i>	Karoo, Kutki	
<i>Pistacia integerrima</i>	Kakra, Kakri, Kakkar Singi	
<i>Podophyllum hexandrum</i> (PA/FV1)	Ban kakri, Bakrachimaka, Bhavanbakua, Papra, Papri	
<i>Polygonatum verticillatum</i> (PA/FV1)	Salam misri	
<i>Rheum emodi</i> (PA/FV1)	Reward chini, Dolu	
<i>Salvia moorcroftiana</i>	Thooth, Thunt	

SCIENTIFIC NAME	LOCAL NAME	ENGLISH NAME
Saussurea lappa/costus? (PA/FV1)	Kuth, Kur, Pachak	
Sida acuta (PA/FV1)	Bariala, Bariara	
Thalictrum foliolosum (PA/FV1)	Gurbiani, Pilazari, Mamiri	
Thymus serpyllum (PA/FV1)	Banajwain	Wild thyme
Valeriana jatamansi	Mushkbala, Nihani	
Viola odorata/serpens	Banafsha	
Zanthoxylum armatum (PA/FV1)	Timru, Tezbal, Nepali dhania	
	Maora kala	
	Losar	
	Banajaan	
	Wild ajwain (HCS1)	
	Tardi	
	Mungo	
	Baria	
	Talash/Sharbul	
	Shabla	
	Kaodakat	
	Masangur	
	Berthad	
	Stundi/Stunda ? (HCS1)	
	Balcharr	



# ANNEXURE 16: SOME ECOLOGICAL DETAILS OF SOME OF THE HERBS LISTED IN ANNEXURE 15

(Source: PA, HC S1, FV1, A.J. Gaston, A. Rastogi)

SCIENTIFIC NAME	DESCRIPTION	STATUS	HABITAT	ALTITUDE	LOCATION IN PARK
			Thaches		
			High alt. thaches?		
			Forest, Thaches		
			River beds, forests		
			Thaches		
			Thaches		
	Lichen sp., Grows on tree trunks, rocks, etc. Collected by scraping off		Thaches	Upto 3000 m +?	
Aconitum heterophyllum			High alt. Thaches	3,300+ m	Khande Dhar, Lori Bathi (HCS1)
Acorus calamus (PA/FV1)			Upto 2000 m		
Ainsliaea aptera (PA/FV1)			Upto 3000 m		
Angelica glauca			3000+ m		
Artemisia maritima (PA/FV1)			2-3000 m		
Atropa acuminata (PA/FV1)					
Berberis lycium	Shrub?		2-3000 m		(PA/FV1)
Cuminum cyminum/Carum carvi?* (PA/FV1)			3400+ m		
Dactylorhiza hatagirea		Thaches			

SCIENTIFIC NAME	DESCRIPTION	STATUS	HABITAT	ALTITUDE	LOCATION IN PARK
<i>Dioscorea deltoidea</i>		Common (HCS1)	Low alt. forests	Upto 2,500 m	Thanau, Manjhan, Kundar, HCS1) Socha, Thira (HCS1)
<i>Girardiana heterophylla</i>		Mainly in Thaches, some in forests (HCS1)		Upto 2500 m??	
<i>Jurinea macrocephala</i>		V. high alt. Thaches	3200+ m		Most abundant in Khande Dhar (HCS1)
<i>Kaemferia galanga</i> (PA/FV1)					
<i>Leptadenia reticulata</i> (PA/FV1)				Upto 2500 m	
<i>Morchella esculenta</i>		Forests		Upto 2500 m?	
<i>Nardostachys jatamansi</i> (PA/FV1)				3,400+ m	
<i>Physochilaina praealata</i> (PA/FV1)				3300+ m	
<i>Picrorhiza kurroa</i>		Banks, forests, thaches		3300+ m	Kande Dhar, Tira Thach, Bira Thach, Rakodsu, Bikhad Khada (HCS1)
<i>Pistacia integerrima</i>	Horn-like hollow fruit (HCS1)			Upto 1800 m	
<i>Podophyllum hexandrum</i> (PA/FV1)				2800+ m	
<i>Polygonatum verticillatum</i> (PA/FV1)					
<i>Rheum emodi</i> (PA/FV1)				3400+ m	
<i>Salvia moorcroftiana</i>	Common (HCS1)	Forests along rivers (HCS1)	2-3000 m		Socha, Thiuagh, Gati Pat, Manjhan (HCS1)

SCIENTIFIC NAME	DESCRIPTION	STATUS	HABITAT	ALTITUDE	LOCATION IN PARK
Saussurea lappa/costus? (PA/FV1)			3000+ m		
Sida acuta (PA/FV1)				2000+ m	
Thalictrum foliolosum (PA/FV1)				2-3000 m	
Thymus serpyllum (PA/FV1)				2000+ m	
Valeriana jatamansi		Common	High alt. forest	2000+ m	Socha, Manjhan, Kundar, Thiuagh (HCS1)
Viola odorata/serpens		Common	Low & high alt. forest (HCS1)	1800-3600 m	
Zanthoxylum armatum (PA/FV1)				Upto 2800 m	

# ANNEXURE 17: LIST OF MAMMALS REPORTED FROM GREAT HIMALAYAN NP

(Source: mp, Park Authorities/Q.A2/FV2)

COMMON NAME	SCIENTIFIC NAME	LOCAL NAME
Bear, Brown	Ursus arctos	Lal Bhaloo, Seta Bhaloo
Bear, Himalayan Black	Selenarctos thibetanus	Reech, Kala-Bhaloo
Cat, Jungle	Felis chaus	
Civet, Himalayan Palm	Paguma larvata	
Deer, Barking or Muntjac	Muntiacus muntjak	Kakkar
Deer, Musk	Moschus moschiferus	Kastura, Bira, Bina
Fox, Red	Vulpes vulpes	Lomri
Goral	Nemorhaedus goral	Ghorar
Jackal	Canis aureus	Gidder
Langur, common	Presbytis entellus	Langur, Guni
Leopard, or Panther	Panthera pardus	Bagh
Leopard-cat	Felis bengalensis	
Macaque, Rhesus	Macaca mulatta	Bundar
Marten, Himalayan Yellow throated	Martes flavigula	Gotu
Mouse, House	Mus musculus	
Mouse-Hare, Himalayan	Ochotona roylei	
Porcupine, Hodgson's	Hystrix hodgsoni	
Porcupine, Indian	Hystrix indica	

COMMON NAME	SCIENTIFIC NAME	LOCAL NAME
Serow	Capricornis sumatraensis	Emu
Sheep, Blue or Bharal	Pseudois nayaur	Miatu, Bharal
Shrew, Grey Musk or House Shrew	Suncus murinus	
Shrew, Himalayan	Soriculus migrezens	
Shrew, Himalayan Water		
Squirrel, Common Giant Flying	Petaurista petaurista	
Squirrel, Kashmir Flying	Hylopetes fimbriatus	
Tahr, Himalayan	Hemitragus jemlahicus	Karth, Bakri
Vole, Royle's	Alticola roylei	
Weasel, Himalayan	Mustela sibirica	

# ANNEXURE 18: LIST OF BIRDS REPORTED FROM GREAT HIMALAYAN NP

[Source: dir, Park Authorities/Q.A2, Gaston et. al., 1994]

COMMON NAME	LATIN NAME
Accentor, Alpine	Prunella collaris
Accentor, Rufous-Breasted	Prunella strophciata
Accentor, Rufous-Streaked	Prunella himalayana
Babbler, Blackthroated	Stachyris nigriceps
Babbler, Goldheaded	Stachyris chrysaea
Babbler, Green Shrike	Pteruthius xanthochlorus
Babbler, Redbilled	Stachyris pyrrhops
Babbler, Redheaded	Stachyris ruficeps
Babbler, Rufousnecked Scimitar	Pomatorhinus ruficollis
Babbler, Rusty-Cheeked Scimitar	Pomatorhinus crythrogenys
Babbler, Scaley-Breasted Wren	Pnoepyga albiventer
Babbler, Slatyheaded Scimitar	Pomatorhinus horsfieldii
Babbler, Slenderbilled Scimitar	Xiphirhynchus superciliaris
Babbler, Spotted	Pellorneum ruficeps
Babbler, White-Browned Shrike	Pteruthius flaviscapis
Babbler-Green Shrike	Pteruthius xanthochlorus
Barbet, Goldenthroated	Megalaima franklinii
Barbet, Great Hill	Megalaima virens
Barwing, Hoary	Actinodura nipalensis
Barwing, Spectacled	Actinodura egertoni
Blackbird	Turdus merula
Blackbird, Greywinged	Turdus boulboul
Blackbird, Whitecollared	Turdus albocinctus
Bluebird, Fairy	Irena puella
Bulbul, Black	Hypsipetes madagascariensis
Bulbul, Blackheaded Yellow	Pycnonotus melanicterus
Bulbul, Redvented	Pycnonotus cafer
Bulbul, Rufousbellied	Hypsipetes maclellandi
Bulbul, Striated Green	Pycnonotus striatus
Bulbul, Whitecheeked	Pycnonotus leucogenys
Bullfinch, Brown	Pyrrhula nipalensis
Bullfinch, Orange	Pyrrhula aurantiaca
Bullfinch, Redheaded	Pyrrhula erythrocephala
Bunting, Crested	Melophus lathamii
Bunting, Rock	Emberiza cia
Buzzard	Buteo buteo
Buzzard, Longlegged	Buteo rufinus
Buzzard, Upland	Buteo hemilasius
Chat, Blue	Erithacus brunneus
Chat, Dark-grey Bush	Saxicola ferrea
Chiffchaff, Eurasian	Phylloscopus collybita

**COMMON NAME****LATIN NAME**

Chloropsis, Goldfronted	Chloropsis aurifrons
Chloropsis, Orangebellied	Chloropsis hardwickii
Chough, Redbilled	Pyrrhocorax pyrrhocorax
Chough, Yellowbilled	Pyrrhocorax graculus
Chukar	Alectoris chukar
Creeper, Himalayan Tree	Certhia himalayana
Creeper, Tree	Certhia familiaris
Creeper, Wall	Tichodroma muraria
Crossbill	Loxia curvirostra
Crow-pheasant	Centropus sinensis
Crow, House	Corvus splendens
Crow, Jungle	Corvus macrorhynchos
Cuckoo, Himalayan	Cuculus saturatus
Cuckoo, Indian	Cuculus micropterus
Cuckoo, Indian Plaintive	Cacomantis passerinus
Cuckoo, Large Hawk	Guculus sparveroides
Cuckoo, Pied	Oxylophus jacobinus
Cuckoo, Pied Crested	Clamator jacobinus
Cuckoo, Sirkeer	Taccocua leschenaultii
Cuckoo, Small	Cuculus poliocephalus
Cuckoo, The	Cuculus canorus
Curlew	Numenius arquata
Curlew, Stone	Burhinus oedicephalus
Darter	Anhinga rufa
Dipper, Brown	Cinclus pallasii
Dove, Indian Ring	Streptopelia decaocto
Dove, Little Brown	Streptopelia senegalensis
Dove, Red Turtle	Streptopelia tranquebarica
Dove, Rufous Turtle	Streptopelia orientalis
Dove, Spotted	Streptopelia chinensis
Dove, Turtle	Streptopelia turtur
Drongo, Ashy	Dicrurus leucophaeus
Drongo, Black	Dicrurus adsimilis
Drongo, Bronzed	Dicrurus aeneus
Drongo, Haircrested	Dicrurus hottentottus
Eagle, Black	Ictinaetus malayensis
Eagle, Crested Serpent	Spilornis cheela
Eagle, Golden	Aquila chrysaetos
Eagle, Greyheaded Fishing	Ichthyophaga ichthyaetus
Eagle, Imperial	Aquila heliaca
Eagle, Short-toed	Circus gallicus
Eagle, Tawny	Aquila rapax
Egret, Little	Egretta garzetta
Falcon, Redlegged	Falco vespertinus
Finch, Plain Mountain	Leucosticte nemoricola
Finch, Redbrowed	Callacanthis burtoni
Finch, Spectacled	Callacanthis burtoni

## COMMON NAME

## LATIN NAME

Finch, Tibet Snow	Montifringilla adamsi
Flowerpecker, Fire-Breasted	Dicaeum ignipectus
Flowerpecker, Tickell's	Dicaeum erythrorhynchos
Flycatcher-shrike, Pied	Hemipus picatus
Flycatcher-warbler, Blackbrowed	Seicercus burkii
Flycatcher-warbler, Blackfaced	Abroscopus schisticeps
Flycatcher-warbler, Chestnut-Headed	Seicercus castaniceps
Flycatcher-warbler, Greycheeked	Seicercus poliogenys
Flycatcher-warbler, Greyheaded	Seicercus xanthoschistos
Flycatcher-warbler, Yellowbellied	Abroscopus superciliaris
Flycatcher, Bluethroated	Muscicapa rubeculoides
Flycatcher, Brown	Muscicapa latirostris
Flycatcher, Ferruginous	Muscicapa ferruginea
Flycatcher, Greyheaded	Culicicapa ceylonensis
Flycatcher, Kashmir Redbreasted	Muscicapa subrubra
Flycatcher, Largebilled Blue	Muscicapa banyumas
Flycatcher, Little Pied	Muscicapa westermanni
Flycatcher, Orangegorgeted	Muscicapa strophia
Flycatcher, Pale Blue	Muscicapa unicolor
Flycatcher, Paradise	Terpsiphone paradisi
Flycatcher, Pigmy Blue	Muscicapella hodgsoni
Flycatcher, Redbreasted	Muscicapa parva
Flycatcher, Rufoustailed	Muscicapa ruficauda
Flycatcher, Slaty Blue	Muscicapa leucomelanura
Flycatcher, Sooty	Muscicapa sibirica
Flycatcher, Verditer	Muscicapa thalassina
Flycatcher, Whitebrowed Blue	Muscicapa superciliaris
Flycatcher, Whitebrowed Faintail	Rhipidura aureola
Flycatcher, Whitegorgeted	Muscicapa monileger
Flycatcher, Whitethroated Faintail	Rhipidura albicollis
Flycatcher, Yellowbellied Fantail	Rhipidura hypoxantha
Forktail, Little	Enicurus scouleri
Forktail, Spotted	Enicurus maculatus
Francolin, Black	Francolinus francolinus
Fulnetta, White-Browed	Alcippe vinipectus
Goldcrest	Regulus regulus
Goldfinch, European	Carduelis carduelis
Goshawk, Northern	Accipiter gentilis
Grandala, Hodgson's	Grandala coelicolor
Greenfinch, Himalayan	Carduelis spinoides
Greenfinch, Yellow-Breasted	Carduelis spinoides
Griffon, Himalayan	Gyps himalayensis
Grosbeak, Allied	Coccothraustes affinis
Grosbeak, Black-and-Yellow	Coccothraustes icterioides
Grosbeak, Collared	Mycerobas affinis
Grosbeak, Spot-Winged	Mycerobas melanozanthos
Grosbeak, Spottedwinged	Coccothraustes melanozanthos



**COMMON NAME****LATIN NAME**

Grosbeak, Whitewinged	Mycerobas carripes
Harrier, Northern	Circus cyaneus
Hawk-cuckoo, Large	Cuculus sparverioides
Hawk-eagle, Booted	Hieraaetus pennatus
Hawk-eagle, Hodgson's	Spizaetus nipalensis
Hen-harrier	Circus cyaneus
Hobby	Falco subbuteo
Hoopoe	Upupa epops
Jay	Garrulus glandarius
Jay, Blackthroated	Garrulus lanceolatus
Kestrel	Falco tinnunculus
Kestrel, Lesser	Falco naumanni
Kingfisher, Whitebreasted	Halcyon smyrnensis
Kite, Pariah	Milvus migrans
Lammergeifr	Gypactus barbatus
Laughingthrush, Siriated	Garrulax striatus
Laughingthrush, Streaked	Garrulax lincatus
Laughingthrush, White throated	Garrulax albogularis
Laughingthrust, Chestnut-crowned	Garrulax crythrocephalus
Laughingthrust, Variegated	Garrulax variegatus
Magpie, Redbilled Blue	Cissa erythrorhyncha
Magpie, Yellowbilled Blue	Cissa flavirostris
Martin, Crag	Hirundo rupestris
Martin, House	Delichon urbica
Minivet, Longtailed	Pericrocotus ethologus
Minivet, Scarlet	Pericrocotus flammeus
Minivet, Shortbilled	Pericrocotus brevirostris
Minivet, Yellowthroated	Pericrocotus solaris
Minla, Chestnut-Tailed	Minla strigula
Minla, Redtailed	Minla ignotincta
Monal, Impeyan	Lophophorus impejanus
Munia, Scaly-Breasted	Lonchura punctulata
Myna, Common	Acridotheres tristis
Needletah, White Throated	Hirundapus caudacutus
Nightjar, Indian Jungle	Caprimulgus indicus
Niltava, Large	Muscicapa grandis
Niltava, Rufousbellied	Muscicapa sundara
Niltava, Small	Muscicapa macgrigoriae
Nutcracker	Nucifraga caryocatactes
Nuthatch, Whitecheeked	Sitta leucopsis
Nuthatch, Whitetailed	Sitta himalayensis
Oriole, Blacknaped	Oriolus chinensis
Owl, Brown Wood	Strix leptogrammica
Owl, Great Horned or Eagle-owl	Bubo bubo
Owl, Mountain Scops	Otus spilocephalus
Owl, Rock Eagle	Bubo bengalensis
Owl, Short-Eared	Asio flammeus

**COMMON NAME****LATIN NAME**

Owl, Spotted Scops  
Owl, Tawny Wood  
Owlet, Barred  
Owlet, Collared Pigmy  
Parakeet, Rose-Ringed  
Parakeet, Blossomheaded  
Parakeet, Slatyheaded  
Partridge, Black  
Partridge, Chukor  
Partridge, Common Hill  
Partridge, Snow  
Peafowl, Common  
Pheasant, Chir  
Pheasant, Kalij  
Pheasant, Koklas  
Pheasant, Monal  
Piculet, Speckled  
Pigeon, Ashy Wood  
Pigeon, Blue Rock  
Pigeon, Hill  
Pigeon, Snow  
Pigeon, Speckled Wood  
Pigeon, Wedgetailed Green  
Pipit, Indian Tree  
Pipit, Rosy  
Pipit, Tree  
Pipit, Upland  
Plover, Eastern Golden  
Prinia, Striated  
Raven  
Redstart, Bluefronted  
Redstart, Blueheaded  
Redstart, Eversmann's  
Redstart, Plumbeous  
Redstart, Whitecapped  
Redstart, Whitethroated  
Robin, Golden Bush  
Robin, Orange-flanked Bush  
Robin, Rufous-bellied Bush  
Robin, Whitetailed Blue  
Rosefinch, Common  
Rosefinch, Dark-Breasted  
Rosefinch, Pinkbrowed  
Rubythroat  
Serin, Fire-Fronted  
Shikra  
Shortwing, Gould's

*Otus spilocephalus*  
*Strix aluco*  
*Glaucidium cuculoides*  
*Glaucidium brodiei*  
*Psittacula krameri*  
*Psittacula cyanocephala*  
*Psittacula himalayana*  
*Francolinus francolinus*  
*Alectoris chukar*  
*Arborophila torqueola*  
*Lerwa lerwa*  
*Pavo cristatus*  
*Catreus wallichii*  
*Lophura leucomelana*  
*Pucrasia macrolopha*  
*Lophophorus impejanus*  
*Picumnus innominatus*  
*Columba pulchricollis*  
*Columba livia*  
*Columba rupestris*  
*Columba leucenota*  
*Columba hodgsonii*  
*Treron sphenura*  
*Anthus hodgsoni*  
*Anthus roscatus*  
*Anthus trivialis*  
*Anthus sylvanus*  
*Pluvialis dominica*  
*Prinia criniger*  
*Corvus corax*  
*Phoenicurus frontalis*  
*Phoenicurus caeruleocephalus*  
*Phoenicurus erythronotus*  
*Rhyacornis fuliginosus*  
*Chaimarrornis leucocephalus*  
*Phoenicurus schisticeps*  
*Erithacus chrysaeus*  
*Erithacus cyanurus*  
*Erithacus hyperythrus*  
*Cinclidium leucurum*  
*Carpodacus erythrurus*  
*Carpodacus nipalensis*  
*Carpodacus rhodochrous*  
*Erithacus calliope*  
*Seninus pusillus*  
*Accipiter badius*  
*Brachypteryx stellata*

**COMMON NAME****LATIN NAME**

Shortwing, Lesser	Brachypteryx leucophrys
Shortwing, Whitebrowed	Brachypteryx montana
Shrike-babbler, Chestnut-throated	Pteruthius melanotis
Shrike-babbler, Green	Pteruthius xanthochlorus
Shrike-babbler, Redwinged	Pteruthius flaviscapis
Shrike-babbler, Rufousbellied	Pteruthius rufiventer
Shrike, Greybacked	Lanius tephronotus
Shrike, Rufousbacked	Lanius schach
Sibia, Blackcapped	Heterophasia capistrata
Siva, Barthroated	Minla strigula
Siva, Bluewinged	Minla cyanouroptera
Snipe, Solitary	Gallmago solitaria
Snowcock, Himalayan	Tetraogallus himalayensis
Sparrow-hawk	Accipiter nisus
Sparrow, Cinnamon Tree	Passer rutilans
Sparrow, House	Passer domesticus
Sparrow, Tree	Passer montanus
Sunbird, Yellowbacked	Aethopyga siparaja
Swallow, Red Rumped	Hirundo daunca
Swift, Alpine	Apus melba
Swift, Large Whiterumped	Apus pacificus
Swiftlet, Himalayan	Collocalia brevirostris
Swiftlet, Indian Edible-nest	Collocalia unicolor
Testa, Chestnut Headed	Testa Castancocoronata
Thrush, Blackfaced Laughing	Garrulax affinis
Thrush, Blue Whistling	Myiophonus caeruleus
Thrush, Blueheaded Rock	Monticola cinclorhynchus
Thrush, Bluewinged Laughing	Garrulax squamatus
Thrush, Greyheaded	Turdus rubrocanus
Thrush, Greysided Laughing	Garrulax caerulatus
Thrush, Large Brown	Zoothera monticola
Thrush, Longtailed Mountain	Zoothera dixonii
Thrush, Mistle	Turdus viscivorus
Thrush, Plainbacked Mountain	Zoothera mollissima
Thrush, Plaincoloured Laughing	Garrulax subunicolor
Thrush, Redheaded Laughing	Garrulax erythrocephalus
Thrush, Rufous-Chinned Laughing	Garrulax rufogularis
Thrush, Streaked Laughing	Garrulax lineatus
Thrush, Striated Laughing	Garrulax striatus
Thrush, Variegated Laughing	Garrulax variegatus
Thrush, Whitecrested Laughing	Garrulax leucolophus
Thrush, Whitespotted Laughing	Garrulax ocellatus
Thrush, Whitethroated Laughing	Garrulax albogularis
Tit-babbler, Chestnut-headed	Alcippe castaneiceps
Tit-babbler, Goldenbreasted	Alcippe chrysotis
Tit-babbler, Whitebrowed	Alcippe vinipectus
Tit-warbler, Stoliczka's	Leptopoecile shophiae

**COMMON NAME****LATIN NAME**

Tit, Black crested	Parus melanolophus
Tit, Black throated	Aegithalos concinnus
Tit, Brown Crested	Parus dichrous
Tit, Crested Black	Parus melanolophus
Tit, Firecapped	Cephalopyrus flammiceps
Tit, Greenbacked	Parus monticolus
Tit, Grey	Parus major
Tit, Rufous vented	Parus rubidiventris
Tit, Simla Black	Parus rufonuchalis
Tit, Whitethroated	Aegithalos niveogularis
Tit, Yellowbrowed	Sylviparus modestus
Tit, Yellowcheeked	Parus xanthogenys
Tragopan, Western	Tragopan melanocephalus
Tree Pie, Himalayan	Dendrocitta formosae
Tree Pie, Indian	Dendrocitta vagabunda
Vulture, Bearded	Gypaetus barbatus
Vulture, Black	Aegypius monachus
Vulture, Egyptian	Neophron percnopterus
Vulture, Griffon	Gyps fulvus
Vulture, Indian Black	Sarcogyps calvus
Vulture, Indian Longbilled	Gyps indicus
Vulture, Indian Whitebacked	Gyps bengalensis
Wagtail, Grey	Motacilla cinerea
Wagtail, Large Pied	Motacilla maderaspatensis
Wagtail, White	Motacilla alba
Wagtail, Yellowheaded	Motacilla citreola
Warbler, Aberrant Bush	Cettia flavolivacea
Warbler, Blackthroated Hill	Prinia atrogularis
Warbler, Blyth's Leaf	Phylloscopus reguloides
Warbler, Blyth's Reed	Acrocephalus dumetorum
Warbler, Brown Hill	Prinia criniger
Warbler, Brown Leaf	Phylloscopus collybita
Warbler, Brownish Flanked Bush	Cettia fortipes
Warbler, Buff-Barred	Phylloscopus pulcher
Warbler, Chestnut-headed Ground	Tesia castaneocoronata
Warbler, Dull Green Leaf	Phylloscopus trochiloides
Warbler, Golden Spectacled	Scircercus burkii
Warbler, Greenish	Phylloscopus trochiloides
Warbler, Grey Hooded	Scircercus xanthoschistos
Warbler, Grey-sided Bush	Cettia brunnifrons
Warbler, Greyfaced Leaf	Phylloscopus maculipennis
Warbler, Large Bush	Cettia major
Warbler, Large Crowned Leaf	Phylloscopus occipitalis
Warbler, Largebilled Leaf	Phylloscopus magnirostris
Warbler, Orangebarred Leaf	Phylloscopus pulcher
Warbler, Pale-rumped	Phylloscopus chloronotus
Warbler, Pallas's Leaf	Phylloscopus proregulus

**COMMON NAME****LATIN NAME**

Warbler, Plain Leaf	Phylloscopus neglectus
Warbler, Rufouscapped Bush	Cettia brunnifrons
Warbler, Slatybellied Ground	Tesia olivacea
Warbler, Smoky Willow	Phylloscopus fulgiventis
Warbler, Strongfooted Bush	Cettia montana
Warbler, Tickell's	Phylloscopus affinis
Warbler, Tytler's Leaf	Phylloscopus tytleri
Warbler, Yellowbrowed Leaf	Phylloscopus inornatus
Warbler-Ashy-Throated	Phylloscopus maculipennis
White-eye	Zosterops palpebrosa
White eye, Oriental	Zosterops palpebrosus
Woodcock	Scolopax rusticola
Woodpecker, Brown-Fronted	Dendrocopos auriceps
Woodpecker, Brownfronted Pied	Picoides auriceps
Woodpecker, Crimsonbreasted Pied	Picoides cathpharius
Woodpecker, Fulvousbreasted Pied	Picoides macei
Woodpecker, Himalayan	Dendrocopos himalayensis
Woodpecker, Himalayan Pied	Picoides himalayensis
Woodpecker, Large Yellownaped	Picus flavinucha
Woodpecker, Rufous	Micropternus brachyurus
Woodpecker, Scalybellied Green	Picus squamatus
Woodpecker, Small Yellownaped	Picus chlorolophus
Wren-babbler, Scalybreasted	Pnoepyga albiventer
Wren-babbler, Tailed	Spelaeornis caudatus
Wren	Troglodytes troglodytes
Yuhina, Rufousvented	Yuhina occipitalis
Yuhina, Stripethroated	Yuhina gularis
Yuhina, Whitebellied	Yuhina xantholeuca
Yuhina, Yellownaped	Yuhina flavirostris

## ANNEXURE 19: SOME DETAILS OF DISTRIBUTION OF WILD ANIMALS IN GREAT HIMALAYAN NP

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### Fauna/Avi-Fauna

Due to diverse flora, climate & altitude, the national park possesses unique variations of Himalayan Wildlife aspects. In the recent past a partial status survey of the wildlife was conducted which confirms the above facts. Some of these species are endangered and are included in the Red Data Book (IUCN) 1978. The main animal species found in the area are Musk deer Barking deer, Serow, Himalayan Thar, Himalayan Ibex. Blue sheep, Black bear, Brown bear, Snow leopard, and common leopard, amongst mammals. The main pheasant species are Western tragopan, Monal, Cheer, Kalij, Koklas and Snow cock (Pheasant).

The animals found in and around the park area are listed in Annexures 17 & 18. However, the status & general distribution of some of them are given below:

### Mammals

1. Yellow Throated Marten: The animal was seen near Rolla, in Tirthan, and near Lapah, in the Sainj Valley. [Wildlife Project 1981.]
2. Musk deer: This species is reported to be existing in sub-alpine Rhododendron zone in Jiwa nal, Sainj, & Tirthan valleys at about 3000m. elevation. Recent census records it only from Tirthan valley.
3. Barking deer: This species is found in the altitude range of 1600-2900m all over the park area, especially near Rolla and Bandal in the Tirthan valley.
4. Serow: This goat antelope is found on craggy, but only moderately steep ground in Birch-Rhododendron forests, sub-alpine scrub and adjacent small patches of meadows. Droppings of this animal were found in R/6 Rolla and in the forest between Shakti and Maraur villages.
5. Himalayan Thar: This species is found below Dela Thatch (Sainj valley) and below Ideda Thatch in Tirthan valley. It is also reported to exist in the Jiwa Nal, Shagwara Nal, and other rock and steep areas of Sainj and Tirthan Valleys, upto 4400m.
6. Himalayan Ibex: The favorite grounds of the Ibex lie in the higher elevations above the tree line. In the spring it is found below the snow line, attracted by the new grass sprouting in the steep slopes. Its grazing grounds, the Ibex has the shelter and security of precipitous cliff and ridges in the upper reaches of Jiwa, Sainj, and Tirthan valleys.
7. Blue Sheep: It is found at levels between the tree and the snow lines, that is upto 4880m in summer and rarely below 3660m in winter. In summer, it lives in flocks which can be upto 200 in number.

Big flocks of blue sheep are reported from Tirth (Origin of Tirthan), though not recorded in the recent census, earlier sightings have been made from the higher reaches of Sainj river and around the Pin Parbati Pass in the Parbati valley. The parbati pass

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\* The occurrence of the Ibex in GHNP is disputed by some, specially by Sanjeeva Pandey [Pandey, Pers. Comm.

forms a corridor for the local migration of the species and a link to the Pin Valley National Park.

8. Himalayan black bear: All the three valleys, namely Jiwa, Sainj, and Tirthan, hold a good population of the Black bear. These animals come close to human habitation during the cropping season however, the 1990-91 census only records it in Thirthan valley and cause damage to the crops.

9. Himalayan Brown Bear: The Himalayan brown bear is found in all the three valleys of the National Park on the alpine meadows. It can easily be sighted in the Shagwara Nala, Dela Thatch (Sainj valley), Basu Nala, Nada Thatch, and Chalocha in the Tirthan valley. Again however, the 1990-91 census only records it from Thirthan valley.

10. Snow Leopard: The snow leopard is certainly found in the adjacent areas of the National Park, in Kinnaur and Spiti areas. It's natural prey species like Himalayan Ibex & blue sheep exist in this area. As per local evidence, the species does exist in the upper snow bound areas of the national park.

11. Leopard: Found in Kalkikanda Himkhani forests in Sainj valley and in Jiwa Nal. Also in Rolla, and Basu Forests in the Tirthan valley.

### Pheasants

1. Western Tragopan: Small populations exist in the north facing sides (left bank) of the Sainj valley, in Nada thatch and basu nala, and in the Tirthan valley.

2. Monal: The national park supports a good populations of the Monal which are very uniformly distributed in all the three valleys. The upper quarters of the main ridges having kharsu (*Quercus Semecarpifolia*) form a good breeding ground for this pheasant. Kali-khand forest in Sainj valley, particularly the Kuthlu area (North-east of Maror) possesses a good population of nonal. The upper Tirthan valley, which includes Nada thatch, and Mere thatch, appears to be the most suitable habitat where the population of this species is concentrated.

3. Cheer Pheasant: This species occupies a wide range in the area and is found on the steep, grass clad, hill sides with rocky trigs. In the park area it occurs on the south facing grass lands of Jiwa, Sainj & Tirthan valleys.

4. Koklas Pheasant: This species occurs upto 3000m and is often observed, with the Monal pheasant, in the Lalkikanda forest in Sainj valley. It is common in the Lapak, Shagwara, Shakti & Maror areas in the same valley. In the Tirthan valley, it was observed in Polla, Nada, and Hara thatches, and in Basu nala.

5. Kalij pheasant: It is found in Bandal, and Rolla areas in the Tirthan valley, and in Sainj and Lapah areas in the Sainj valley.

[Source: mp]

## ANNEXURE 20: RESULTS OF WILDLIFE CENSUS OPERATIONS IN GREAT HIMALAYAN NATIONAL PARK

(Source : Park Authorities /Q.A2) - 1990-91

### Survey of Wildlife Animals in Great Himalayan National Park: (1990-91)

Mammals/ Pheasants	5.11.90 Tirthan Valley	7.12.90 Tirthan Valley	21.1.91 Tirthan Valley	7.2.91 Tirthan Valley	11.2.90 Sainj Valley	15.2.91 Sainj Valley	14.12.90 Jiwa Nal Valley	20.1.91 Jiwa Nal Valley	15.2.91 Jiwa Nal Valley
Musk Deer		2	1						
Ghoral	16	12	37	21	1	0	8	5	
Himalayan Tahr	6	10	1		18	1	14		
Serow		1	2	1					
Blue sheep		45							
Black bear	6	1							
Brown bear		4							
Yellow throated marten		4	2	3					
Leopard			2		1				
Langur					72	34	50	60	23
Monal	33	55	79	65	31	24	137	100	40
Koklas	22	18	18	27	8	1	7	115	2
Kaleej	8		15	10					
Western tragopan			4	2	1	1	3		
Area covered during wildlife survey (sq km)	13	14	7	15	20	9	9	9	9



## ANNEXURE 21: HUMAN POPULATION COMPOSITION AND LIVESTOCK AND LAND HOLDINGS OF THE TWO RESIDENT HOUSEHOLDS OF MANJHAN<sup>1</sup>

1.                      Bala Ram's Household:                      Kadshi Ram's Household:

Families	4	?
Infants (under 1 year)	2 (1M; 1F)	None
Children (1-14 years)	6 (3M; 3F)	5 (4M; 1F)
Adults (15-60 years)	7 (3M; 4F)	8 (4M; 4F)
Aged (61 and above)	1 (M)	None

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Total Individuals	16	13
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Land Holding (bighas)	15 (plus 18 in other villages)	8 (plus 22 in other villages)
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Livestock	70 sheep/goat* 18 cattle	16** sheep/goat 15 cattle
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### Notes:

1     There are slight discrepancies in numbers of infants, children and livestock recorded in the Village Schedule.

M=Male, F=Female

\*     Did not get separate figures for sheep and goat as people do not distinguish between the two i.e. bedd-bakri.

\*\* Kadshi Ram's household used to have some 50-60 sheep and goat until some 2 years ago, but they lost a lot of animals due to disease.

## • ANNEXURE 22: DETAILS OF TEMPORARY RESIDENTS OF MANJHAN AND KUNDAR

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### Temporary Residents of Manjhan:

Kotla Village: 1. Jabe Ram  
2. Sangt Ram  
3. Jay Ram

Krongcha Village: 1. Deru Ram  
2. Ait Ram  
3. Repti Ram  
4. Belli Ram  
5. Kan Chand

Majharna Village: 1. Dharm Chand  
2. Jayru

Palgi Village: 1. Dharm Chand  
2. Chande Ram  
3. Hari Ram

Railah Village: 1. Jayram

Tahkur Village : 1. Dine Ram  
2. Shannu Ram  
3. Lille Dhar

### Temporary Residents of Kundar:

Majharna Village: 1. Mir Chand  
2. Kalmi Ram  
3. Tulle Ram  
4. Sesh Ram  
5. Jai  
6. Chande Ram

[SOURCE: Smt. Ram Dassi, daughter-in-law of Bala Ram, resident of Manjhan (FV2)].

ANNEXURE 23: ANNUAL AGRICULTURAL CYCLE OF MANJHAN

[Source: VS]

Months	Activity	Crops
January-February	None	_____
February-March	None	_____
March-April	None	_____
April-May	Sowing	Potato, Saryara, Geri kadu, <u>Cannabis</u> , Tobacco
May-June	Sowing	Corn
June-July	Sowing Harvesting	Rajma Wheat
July-August	Harvesting	Geri kadu
August-September	Harvesting	Geri kadu
September-October	Harvesting	Geri kadu
October-November	Sowing Harvesting	Wheat Corn, Potato, Saryara, Rajma, <u>Cannabis</u> , Tobacco
November-December	None	_____
December-January	None	_____

ANNEXURE 24: ANNUAL AGRICULTURAL YIELDS IN MANJHAN

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Crop	Yields (kg per bigha) (Minimum Maximum)*	Area Occupied (bighas)
Corn	20/25 - 100	3
Wheat	40 - 80	2-4
Potato	40	1-2
Saryara	40	1-2
Rajma	40-50	1-2

**ANNEXURE 25: QUANTITIES OF HERBS AND *GUCCHI*  
COLLECTED AND SOLD BY RESIDENT  
HOUSEHOLDS OF MANJHAN IN 1990**

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Species	Bala Ram's HH (HHS 1) Kg	Kadshi Ram's HH <sup>1</sup> (HHS 2) Kg
Chaura (Chura?)	40-50	_____
Dhup	100-150	_____
Gucchi	5-6	3-4*
Karu	40-50	50-60
Mehndi	200-300	_____**
Mushkbala	100	_____
Nihani	_____	_____***
Panja (Hath/Salam?)	10-15	1.5
Patis	10-15	_____
Piplamul (?)	60-70	_____
Shingli	100	_____
Thunt	300-400	_____

Notes:

1 Respondent (Kadshi Ram) appeared very vague about which herbs had been collected and in what quantities.

\* 2 kg *Gucchi* sold in 1991.

\*\* 120 kg *Mehndi* sold in 1991.

\*\*\* 44 kg *Nihani* sold in 1991.

# ANNEXURE 26: COLLATION TABLE FOR HOUSEHOLD SCHEDULES ADMINISTERED IN MANJHAN (1991)

	HOUSEHOLD SCHEDULE #1	HOUSEHOLD SCHEDULE #2
	Name of the village: Majhan (Jiwa Nala Valley) Name of the head of the household: Bala Ram Religion: Hindu Caste: Rajput Persons spoken to: Bala Ram, Mani Ram, and Baldasi	Name of the village: Majhan (Jiwa Nala Valley) Name of the Head of the Household: Kadshi Ram Religion: Hindu Caste: Rajput Persons spoken to: Kadshi Ram, and his daughter-in-law
[Q - 1] Wildlife seen by respondents (They did not seem to have an idea of the numbers or increase/decrease of animal populations in the area)	Black bear, Brown bear, Rhesus, Langur, Porcupine, Leopard, Goral, and a large variety of birds were reported to be seen. They did not have an accurate idea of numbers but said they saw lots of animals, especially around their fields during the harvesting season, that is in March-April, and Oct-Nov. They did not seem to have an idea of trends in animal population, but reported an increased number of attacks on their fields and livestock.	Leopards, Black bear, Brown bear, Goral, Himalayan tahr, Musk deer, and snakes were reported to be seen. A high frequency of sighting was reported for all animals except for Brown bear, and Musk deer. Brown bear, Himalayan tahr, and Musk deer were reported to have been sighted in the high altitude meadows, while the others were sighted around the village. No trends on increase/decrease of populations were reported.
[History: Q - 3] Demographic changes.	Many people left the village and settled down in Pashi, and Kharongcha, a long time ago, after having bought land over there. Did not know why this happened.	No changes.
[Demography: Q - 1] (When we visited the village, there were only 4 members for Balaram's household, and 2 members of Kadshi Ram's household residing there. Both the households are Rajputs, and are very caste conscious)	<div> <div>Individuals - 16</div> <div>Families - 4</div> <div>Infants - 2 (1 male and 1 female)</div> <div>Children - 6 (3 males and 3 females)</div> <div>Adults - 7 (3 males and 4 females)</div> <div>Aged - 1 male</div> </div>	<div> <div>Individuals - 13</div> <div>Families -</div> <div>Infants - none</div> <div>Children - 5 (4 males and 1 female)</div> <div>Adults - 8 (4 males and 4 females)</div> <div>Aged - none</div> </div>

	HOUSEHOLD SCHEDULE #1	HOUSEHOLD SCHEDULE #2
[Demography: Q - 2]	No member of the household was literate	One member of the household had studied upto the class 5
[Religion] What part of the surroundings of the village are considered sacred?	Everything in the area surrounding the village upto 500 m is considered sacred.	There is a rock which they address as Khoru Dev, near the area where the fields are, and another rock near the habitation cluster called Shangri Dev, whom they consider sacred. There is also a well, known as Rudra Nag, which is considered sacred. Cows are worshipped on Dussehra.
[Other traditional skills] (These included spinning, weaving, wood work, stone work, rope making, and bee keeping)	Spinning and weaving to produce woollen clothes and carpets, for domestic use is done by both men and women. Wood work (small implements etc), stone work (slate making), and rope making is done only by men. They also do beekeeping for domestic use.	Same as household #1.

## HOUSEHOLD SCHEDULE #1

[Economic levels] (Both the families had land holdings in other villages of the area. Both had joint ownership of houses along with 7-8 other families. Kadshi Ram's household had lost a large number of its sheep/goats to a disease (foot & mouth?).

Land holding - 15 Bighas (18 bighas in other villages)  
 Sheep & goats - 70 heads  
 Cows and bulls - 18 heads  
 Houses - 4 houses (Balaram's household had full ownership of only 2 houses. The other 2 were jointly owned with Kadshi Ram's and a few other households)

[Occupation] The major occupations of both households were cultivation, pastoralism, and herb collection (including Morrell Mushrooms). While both cultivation and pastoralism are subsistence activities, herb collection is done to earn cash

CULTIVATION is carried out in April/July and in August/October (the harvesting and sowing seasons). Everyone available (not engaged in pastoralism or herb collection) is engaged in cultivation. It is a purely subsistence activity and no surpluses are generated.

PASTORALISM is an activity undertaken throughout the year. Everyone is engaged in it in one way or another. Subsistence activity.

HERB COLLECTION is carried out in the summer season (April to November). 4-5 members of the household are engaged in the collection of herbs/mushrooms. The only source of monetary income.

## HOUSEHOLD SCHEDULE #2

Land holding - 8 bighas (own 22 bighas in other villages)  
 Sheep and goats - 16 (Said that they had 50-60 heads about 2 years ago. Lost a lot of animals to disease)

Cows and bulls - 15 heads  
 Houses - 3 houses (have full ownership of only 1 house. Also own 2 more houses in Majharna, and Daran, respectively)

No difference between the two households as far as PASTORALISM and CULTIVATION are concerned.

Only 3 people from this household are engaged in doing HERB COLLECTION.

CARPENTRY and HOUSE BUILDING are activities which 2 people in the household are proficient in. Sometimes they are engaged in doing these.



## HOUSEHOLD SCHEDULE #1

[Resource use] Both households reported use of various resources from the forest for fodder, fuel wood, self consumption, and sale. These included wood, grass, leaves, flowers, herbs, and stone. All these were reported to be rights

One headload per day (40 kg) of FUELWOOD is used in the summer, while in the winter three headloads are used up.

TIMBER for house construction is required very rarely (we were told that a house once built, can last upto a 100 years). A typical house has 2.5 storeys, and if a brand new house is to be built, then about 10-12 full grown Deodar trees are required

GRASSES ("Panakhad") and LEAVES (Ban, Moru, Kharsu, "Marir", "Kathi", "Peen", and "Sur") are used for fodder (While we were in the village, the women were engaged in cutting grass which was being stored for the winter. Every day, two headloads of 50 kg each were being collected by each household)

"Jammu", "Then", "Pahani Badam", and Walnut are used for self consumption by the household. Between 50 and 100 kg of fruit is extracted each year, between August and October.

The "Banafsha" (4-5 kg) FLOWER is extracted in the months of April and May, and sold.

"Patis" (10-15 kg), Morrell Mushroom (5-6 kg), "Panja" (10-15 kg), "Kadu" (40-50 kg), "Dhup" (100-150 kg), "Mushkaba" (100 kg), "Mehndi" (200-300 kg), "Shingli" (100 kg), "Thunt" (300-400 kg), "Chaura" (40-50 kg), and "Piplamul" (60-70 kg), were the HERBS which they had extracted from the park, and sold in the market, in 1990. (There are three brothers in the household, who are married. These figures were given to us by Maniram, one of the sons of Balaram)

## HOUSEHOLD SCHEDULE #2

One headload per day (40 kg) of FUELWOOD is used in the summer, while in the winter two headloads are used up.

GRASSES ("Panakhad") and LEAVES (Ban, Moru, Kharsu, "Marir", "Kathi", "Peen", and "Sur") are used for fodder (While we were in the village, the women were engaged in cutting grass which was being stored for the winter. Every day, two headloads of 50 kg each were being collected by each household). A goat can consume upto 8 kg of fodder a day in the winters. They collect about 35 kg of fodder per day during winters, while 10 kg is collected during summers (for cows?).

"Jammu", "Sharoh", Peaches and Walnut are used for self consumption by the household. Around 8 kg of fruit is extracted each year, between August and September.

"Nihani" (44 kg), "Menhdi" (120 kg), and Morrell mushrooms (2 kg), were the HERBS collected and sold in 1991 (this year). In the previous year, the household had collected 3-4 kg of mushrooms, 50-60 kg of "Karu", and 1.5 kg of "Panja", for sale.

#### HOUSEHOLD SCHEDULE #1

[Cultivation] The major crops are wheat, corn, and potato. Each crop is harvested only once. They have "pattas" for their land. Un-authorised cultivation of Cannabis is also done. Droppings of livestock are used for manure.

[Economics of pastoralism] It is mainly a subsistence activity, but a few animals are sold. Wool, and milk are used for self consumption. However, one household reported selling of some wool.

Output of potatoes was 12 quintals from 5 bighas. 8 quintals of corn was harvested from 10 bighas. 5 quintals of wheat was extracted from 15 bighas. 40 kg of "saryara" was also extracted. It is generally planted on the edge of corn fields. In addition pumpkin, tobacco, and Rajma were also extracted.

They have 15-16 goats, of which they sell 1-2 (@ Rs 500-600 per billie and Rs 1000-1200 per goat). They also said that they had killed 7-8 goats for self consumption! (sometimes, the number of animals killed for self consumption might be high due to reasons like appeasement of the Devta, marriages, births etc). Reported selling 20-30 kg of wool, but did not remember the price. Did not report selling a sheep. The milk of cows and goats is used for self consumption. They had 2 milch cows, both of which were giving 1-2 litres of milk a day.

They buy about Rs 100 worth of medicines in one year.

#### HOUSEHOLD SCHEDULE #2

This household extracted between 500-600 kg of potatoes from 1.5 bighas of land. About 500 kg of wheat was harvested from 3 bighas of land. 50-60 kg of "saryara" was harvested from 1 bigha of land.

Reported selling of a goat for Rs 800. They also said that they killed 1-2 goats for self consumption. They had 4 milch cows, all of which were giving 1 litre of milk a day.

2 years ago, when his flock had the disease, he spent about Rs 800 on medicines. Also spends about Rs. 700 on salt.

[Economics of Herb collection] There was a gap in the income reported from herb collection by the two households. No outside labour is employed for it. Mainstay for both households as far as monetary income is concerned.

#### HOUSEHOLD SCHEDULE #1

Name of Herb	Price (per kg)	Quantity sold (in kg)
"Patis"	500	15
Morrell Mushrooms	1500	6
"Panja"	250	15
"Kadu"	40	50
"Dhup"	25	160
"Mushkbala"	10	100
"Mehndi"	10	300
"Shingli"	9	100
"Saung"	6	400
"Chaura"	6	50
"Piplamul"	8	70

Maniram was the one who gave us these figures. When we asked him was the income from herb collection (including mushrooms) for the household, he gave us the a figure of Rs. 15,000 approx. However, when the quantities and prices he had given us were collated, we got a figure of around Rs. 25,000. Earlier, his sister-in-law had told us that they eamed about Rs. 60,000 from this activity. When we asked her why Maniram had given such a low figure when compared to hers, she said that Maniram had given the income for just his family, while she had given the figure for the entire household (all the three brothers).

#### HOUSEHOLD SCHEDULE #2

The old man Kadshi Ram, gave an estimated income of the household as Rs. 10,000 per annum from herb collection (including mushrooms). Did not very clearly remember which herbs, and in what quantities, had been sold.

## HOUSEHOLD SCHEDULE #1

## HOUSEHOLD SCHEDULE #2

## DISPLACEMENT SCHEDULE

[History: Q - 1]  
Awareness of impending displacement. Both respondents were aware that they were due for displacement.

Yes

Yes

[History: Q - 2] The first time they heard about displacement

Came to know about plans for displacement about 4-5 years ago from a forest guard.

Came to know about plans for displacement about 2-3 years ago from the local people.

[History: Q - 3] Reasons given for displacement

Were told that they would have to be moved because of the setting up of the park. They have not been consulted in the matter by the authorities.

Were given no reasons for being displaced. They also have not been consulted by the authorities.

[Resettlement & Rehabilitation Plans and Process: Q - 1]  
Perception towards displacement

Said that they would leave only if they are forced to. Also felt that existing way of life could not be carried out at a new location.

Do not want to leave Majhan. However if the Government insists, they will have to.

[Resettlement & Rehabilitation Plans and Process: Q - 2]  
Difference of opinion on displacement

No difference of opinion among the villagers on the issue.

Did not know whether a difference of opinion among the villagers existed on the issue. However, all his family members did not want to leave.

[Resettlement & Rehabilitation Plans and Process: Q - 3] Awareness of any plans for relocation (Both households were unaware of any kind of a plan)

No

Said that they were to be relocated to a place near Majharna/Shirshadhar, but the land there was very rocky. Also said that there were too many wild animals there!

## HOUSEHOLD SCHEDULE #1

[Resettlement & Rehabilitation Plans Process: Q - 5] Demands of respondents if displacement is inevitable	They would like to have land of a quality similar to the one now, and access to grazing lands, flour mill, water, electricity, and access to thaches and the forests.
[Impact of impending displacement: Q - 2] Future if they remain where they are	Best if they stay on.
[Impact of impending displacement: Q - 4] Change in community life.	No response.
[Impact of impending displacement: Q - 5] Know people in proposed relocation sites.	Said they did not know anyone in the resettlement site (Earlier, he had also said that he was not aware of any plans for relocation).

## HOUSEHOLD SCHEDULE #2

Said that they had sent a written request to be given land in a Government farm in Sainj! This was denied.
Makes no difference.
Ties with the land/forest and the neighbouring villages would get affected. They would also get separated from their devtas.
Said that they knew people in the relocation site. At the moment they were still friendly, but this might change later on.

ANNEXURE 27: NUMBERS OF DIFFERENT LIVESTOCK  
GRAZING IN GREAT HIMALAYAN N.P (Q.A2)

	From park villages	From adjacent villages	Total
Cows	135	385	520
Sheep	250	9242	9492
Goats	150	8978	9128
Mules/ horses	2	4	6
Total	537	18,609	19,146

[Source: Park Authorities - QA.2]

**ANNEXURE 28: VILLAGES, PANCHAYATS AND TEHSILS OF ORIGIN  
OF MIGRATORY GRAZERS**

VILLAGE	KOTHI	POST OFFICE	PANCHAYAT	TEHSIL
Bali			Khun	Ani
Koela			Koela	Ani
Kanda			Ropri	Ani
Thamel			Ropri	Ani
Khun			Khun	Ani
Luharh			Ani	Ani
Kot			Lajheri	Ani
Bagtori			Lajheri	Ani
Kannala			Lajheri	Ani
Chadoli			Lajheri	Ani
Ropa			Lajheri	Ani
Digsari			Lajheri	Ani
Khanag			Lajheri	Ani
deem			Lajheri	Ani
Khavach			Bakhnaou	Ani
Deeg			Bakhnaou	Ani
Khaneri			Bakhnaou	Ani
Goarh			Bakhnaou	Ani
Kutua			Jaun	Ani
Trarha			Jaun	Ani
Dhans			Jaun	Ani
Nati Nad			Jaun	Ani
Lohara			Rajeri	Ani
Dugot			Bakhnaou	Ani
Khadag				Kullu
Kutva				Ani
Luhai				Ani
Kandwadi				Palampur (Kangra District)
Kanarthu				Bajjnath (Kangra District)





	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5	SCHEDULE #6	SCHEDULE #7
[Q - 4] Number of livestock. According to most of the respondents all livestock was authorised, since the right does not specify numbers. None of the respondents pay any grazing fee.	Total flock = 450: 200 goats, and 250 sheep. Entire flock of the villages Bali, and Koela. (Grazier group comprised 4 people)	Total flock = 400: 200 goats, and 200 sheep. Entire flock of villages Kanda, Thamel, and Khun. This group of graziers also picks up local livestock, so that by the time they get to the park, they have something like 500 goats and sheep. (6 graziers)	Total flock = 1000: 500 (including 50 kids) goats, and 500 (no lambs) sheep. Entire flock of village Iuhari. (7 graziers). In this case, the respondent said that their right specified upto a 1000 animals only.	Total flock = 705: 100 from Kot, 150 from Baglari, 175 from Kannala, 175 from Ropa, and 125 from Kanala. (5 graziers, one from each village)	Total flock = 1000 (seemed an underestimate. 1500 - 2000 more likely): 450 goats, and 550 sheep. Livestock was from several villages in Lajheri panchayat. (7 graziers, who among them owned 465 out of the 1000 heads of livestock from Lajheri panchayat)	Total flock = 750: 1 to 1 ratio of goats and sheep. Livestock from several villages in Bakhnau panchayat. (5 graziers, owned 469 heads)	Total flock = 450 (A local who was friendly to us estimated 1000 - 1200): 50 goats and 300 sheep.
[Q - 5] Reason for composition of livestock. (We stopped asking this question after the first two or three attempts since they did not seem to have any particular reasons for their livestock composition)	No reply.	Prefer to have more female goats and sheep since that is how your flock can increase.	No reply	No reply.	No reply.	No reply.	No reply.
[Q - 6] Annual activity cycle	Enter Park in June-July, and come out in Sept-Oct. The rest of the year they stay in their village and do cultivation, horticulture, or wage labour. Main cash crops are potatoes and apples.	Enter Park in May-June and come out in Sept-Oct. The rest of the year they do cultivation, and horticulture. During winter, they also collect fodder for livestock. Months of sowing/harvesting are April-May, and Oct-Nov.	Enter Park in May-June & come out in Sept-Oct. Go for winter grazing to Luhri in Nov-Dec and come back to their village in March-April. The rest of the people in the village do cultivation. Months of sowing/harvesting are April-May and Oct-Nov.	Enter park in May-June and come out in Sept-Oct. They also do cultivation which is a purely subsistence activity, and they get only one crop in an year. Also do wage labour in development works like roads etc. if they get a chance to.	Enter Park in May-June and come out in Sept-Oct. Go for winter grazing to Luhri in Nov-Dec and come back to their village in March-April. Rest of villagers do cultivation.	Enter Park in May-June and come out in Sept-Oct. Rest of the year they do cultivation. Main cash crops are peas and potatoes.	Enter Park in May-June and come out in Sept-Oct. Rest of the year they do cultivation. Have 2 crops an year. cash crops are peas, potatoes, and a little bit of apple.

	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5	SCHEDULE #6	SCHEDULE #7
[Q - 7] Income generated by other major activities	Other major activities include horticulture, cultivation, and wage labour. However income by these activities was not given by respondents.	Other major activities include horticulture, cultivation, and wage labour. The respondent, that in his village every family made about Rs. 7000-8000 in one year from one or a combination of these activities.	The other major activity in their village is cultivation. Each family makes about Rs. 4-5000 in one year.	The other major activities Include cultivation and wage labour. Cultivation is a purely subsistence activity. Do wage labour for about 15-20 days in an year (earn about Rs. 3000-4000?)	Cultivation is the other major activity. Each family earns about Rs. 2000-2500 in one year.	Cultivation is the other major activity. Each family earns less than Rs. 1000 from it.	Cultivation is the other major activity. Each family earns about Rs1000-1500 per year.
[Q - 9] Plant species grazed, used for fodder.	Grass species which are grazed mainly are Mashni, Chuna, and Jollu (all vernacular names). Fodder collection not done.	Grass species mainly grazed are Bhaja, Kalaneeru, and Chuna (all vernacular names). Ban, Moru, and Kharsu leaves are used for fodder. Also Saketcha (vernacular name), is fed to goats only.	Grass species mainly grazed are Moori, Parari, Beli, and Barthi (all vernacular names). Fodder not collected.	Grass species mainly grazed are Baaja, Chinor or Chuna (all vernacular names). Ban, and Moru leaves are used for fodder in thaches.	Grass species mainly grazed are Chuna or Meeru, Mashu, Prari, Moori, Batthi, Muth Masri, and Munja (all vernacular names). Fodder not collected.	Grass species mainly grazed are Chaner or Neeru, and (all vernacular names). Moru, and Kharsu leaves are used for fodder.	Grass species mainly grazed is Chuna (vernacular names) Fodder not collected.
[Q - 10] Other animals brought into the park	3 dogs. (The respondent said that generally the number of dogs accompanying a flock depends on the number of men accompanying it. The common ratio is 1:1.)	3 dogs.	5 dogs.	Blank.	Blank.	3 - 4 dogs. (RM's observation)	Blank.
[Q - 11] How long has grazing been going on in the park	For as long as the respondent remembers.	The respondent's grandfather was the first one to come, followed by his father, and then him.	Since generations.	Since generations.	The respondent said he did not exactly remember, but that it has been carried out for generations.	Since generations.	The respondent himself has been coming for 25 years. But the flock has been coming for generations.

	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5	SCHEDULE #6	SCHEDULE #7
[Q - 12] Increase or decrease	No change in livestock numbers or area under grazing. The respondent said that the size of the flock does not change if they want it to. Also, this way it is more manageable.	No change in livestock numbers or area under grazing. The respondent said this was due to even natural factors. He also said that pastoralism as a profession was becoming unattractive, since people were now turning to Apple growing, Government jobs etc.	No change at present. However the respondent also said that they will have to try and decrease livestock numbers since forage area is reducing, and forests are being closed up.	No change in livestock or grazing area. Diseases and cattle lifting by wildlife keep a check on numbers. For example last year, they lost 350 heads of cattle to a disease.	No trends.	No significant trends.	No trends.
[Q - 13] Legal Status. (All respondents claimed to be right holders)	The right is given to a village or a family on behalf of that village. It does not specify the number of livestock, but only the area in which the right can be exercised. The right has been recorded in a settlement since the British times.	One person in the village, who is now dead, was given the right. Any person who is related to him is a right holder. The right is recorded by the Government.	The right is for the entire village. The respondent said that they carry a paper which is now about 20 years old.	The right is in the name of an individual (Ved Ram) of Lajheri panchayat. It is recorded in a settlement which they saw in Sainj. The number of livestock is not specified in the right. They have a paper which is kept in their village to prove their right	The right belongs to the entire village. It does not specify the number of livestock. It does however, specify the area in which the right can be exercised, and the number of days which can be spent in each location.	Right holders. (We met these graziers in a field where they were going to keep their flock for the night. They were about to go off for dinner when we appeared. The interview therefore was hurried, and this question may have been skipped.)	The right specifies the area. The respondent did not have knowledge of whether it specifies the number of livestock or not.
[Q-14] Income from livestock (Most of the respondents said that they do not sell wool, milk, etc. Their income from pastoralism is derived mainly out of selling the livestock. This may also partially explain why their flocks have not increased over time)	Sell lambs or kids (6-7 months old) for Rs. 150 each. A 4-5 year old animal can be sold for Rs. 500-600. Also sell "Shela" (Rs. 100-130), a carpet made out of goat's hair. But this happens only if there is a surplus over subsistence needs.	Sell "Shela" for Rs. 100-200. Also sell Livestock. According to the respondent (D.N. Kapoor of Khun village), each family earns about Rs. 2000 per year from pastoralism. This involves sale of goats, sheep, and "Shelas".	According to the respondent (Dharam Das), they earned about Rs. 2500 from a flock of 1000 in one year, after excluding costs. Sold about 5 animals in one year. Billie/Ewe sold at Rs. 400-500. Goat sold at Rs. 1000-1200. Sheep sold at Rs. 600-700.	The respondent (Mast Ram, from Kannala village) who had brought 175 goats from his village, said the annual income from the flock, for the entire village was about Rs. 5000-6000. He said that they got their income from selling goats and sheep.	Annual income Rs. 10000 from a flock of 1000. Also said that 30-35 animals are sold per year. Lambs and kids sold for Rs. 350. Goats and Sheep for Rs. 500-600.	An average of 8-10 animals are sold by everyone in one year. A lamb/kid is sold for around Rs 250-300. A billie/ewe sold for Rs. 500-600. A goat/sheep sold for Rs 900-1000.	Only old sheep/goats are sold for Rs. 300-400. From a flock of 450, about 20 animals are sold.

	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5	SCHEDULE #6	SCHEDULE #7
[Q - 15] Inputs/costs into livestock. (The two main costs were reported to be medicines, and salt for the animals)	Total expense for the annual trip Rs. 1000. This includes Rs. 600-700 for salt, and Barley for dogs (Rs. 300?)	Did not divulge any costs	An average of Rs. 100 per year on medicines. Plus Rs. 4000 on salt (@Rs 100 per quintal. Used up 4 quintals of salt)	200 kg of salt. Plus in June/July and Sept/Oct they have to sacrifice atleast 1 animal as well as pay Rs. 50 to the Shakti Devta. Also, every third year the Devta goes to Rakti Sar, and then atleast another animal and Rs. 50 has to be given to the Devta.	Rs 1000 per year on medicines. Rs 1312.5 on salt (@ Rs. 375 per quintal including carriage for 3.5 quintals)	Rs 750 for salt (@ Rs 375 per quintal including carriage (Rs. 200 per quintal without carriage) for 2 quintals). Every year atleast 5-10 animals are killed by wildlife (mainly Brown bear, and Leopard)	Bought about 1 5 to 2 quintals of salt (@ 675' per quintal) Did not remember expenditure medicine
[Q - 16] Declaration of park, and its function	Was not aware of the existence of the park.	Came to know of the existence of the park from some people in Ani Tehsil. Was not asked about what he thinks the function of the park is.	Came to know of the existence of the park 2 years ago from people of Shakti and Maraur. No response on what the function of the park is.	Came to know of the existence of the park 4 years ago from the Guard and the people of Shakti and Maraur. The function of the park is to protect wildlife and the jungle. They did not think that it was a good enough reason to stop their grazing.	The ex-MLA (Maheshwar Singh?) told them about the park 5-6 years ago, and a guard told them 3-4 years ago. They have heard that the park is for wild animals, but it is not justified if it ends their livelihood.	Had met Gaston & Garson 10 years ago and subsequently came to know about the park from people of Shakti and Maraur. Says that some people feel the park is for animals, while the others say it is for medicinal plants. Is not sure if it is justified or not	An year (1990) ago they came to know of the existence of the park from the authorities (Sanjiva Pandey). Also met Garso 1991. Do not know about function of the park.
[Q - 17] Restrictions on grazing, and reasons	N.A. (However, we asked what they would do if their access to grazing grounds was disallowed. The response was we do not know.)	Informed about impending restriction on grazing by the Pradhan of Bathad (who had met us earlier).	Informed by people of Shakti and Maraur. Said that the reasons for restricting grazing were alright if they were given alternate grazing in return.	Informed by people of Shakti and Maraur.	Informed by people of Shakti and Maraur.	Informed by people of Shakti and Maraur. Reasons for restricting grazing are alright as long as each member of an effected family can get a Government job. They have been told by park authorities to not come to the park but have paid no heed to it.	Have been told that they will be allowed to graze as long as Shakti and Maraur people are present. But they will continue to graze even after that. They have been told that people with rights will get compensate for them.
[Q - 18] Compensation	NA.	Do not know.	They expect to be compensated.	Instead of compensation, they want other grazing grounds.	They were informed by the R.O. Sainj that they would be either given grazing grounds in the Manikaran valley, or be compensated in cash.	Do not know whether they are to be compensated or not.	They have been told that right holders are going to be compensated.

	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5	SCHEDULE #6	SCHEDULE #7
[Q - 19] Impact of Park	None	None	None	None	None	None	None
[Q - 20] Alternative grazing grounds	Not aware of other grazing grounds	None	Lahaul and Spiti, and Kanawar.	None	There are other areas of grazing but none of them are free since there are right holders for those areas also.	There are other areas which are occupied.	Do not know of any other area.
[Q - 22] Improved breeds	Have considered going in for improved breeds (Merino), but they are not suitable for our purpose since their wool can not be woven by hand. They are also not hardy enough to withstand cold (Prompted by the Guard).	Have considered going in for improved breeds but they are not hardy enough for the conditions.	They are introducing Merino in their flock, and improving the breed. Do not have any problems with it.	No. Merino can not survive in extreme cold. The wool is excellent though.	Have introduced Merino. There is resistance by the old people to introducing this breed, but the younger ones are all for it.	They have some Merino sheep, and are trying to improve their flock by breeding.	No. Merino can not survive in the cold.
[Q - 23] Alternate profession.	Cultivation, and Horticulture. They also keep cows in the village.	Question not asked.	Cultivation. But there is no substitute for pastoralism.	None.	They can only think of Government jobs.	Only wage labour. They want Government jobs.	None..
[Q - 25] Future of their children	Same. No difference desired.	One of the graziers wanted a Government job for his son, and was educating him. Another person in the group, however, felt that this was a good life.	He is educating his children but feels that his existing profession is good enough for them.	They want their children to get Government jobs and are educating them for it.	They are educating their children in the hope that they will get a job when they grow up. If that does not happen, then a graziers profession is good enough.	They are educating their children. Their current profession is not good enough.	His children are themselves not interested in pastoralism as a profession, so they will not take it up. They are also studying.
[Q - 26 and 27] Relating to illegal grazing	NA. Since only legal grazing takes place.	NA.	Conversation terminated.	NA.	NA.	NA.	NA.
[Q - 28] Monitoring of grazing	None.	None.	- DO -	None.	None.	None.	None.
[Q - 29] Rotation of Grazing Grounds	- DO -	- DO -	- DO -	- DO -	- DO -	- DO -	- DO -

	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5	SCHEDULE #6	SCHEDULE #7
(Q - 30) Difficulty with Government Authorities	- DO -	- DO -	- DO -	- DO -	- DO -	An official, who the respondents claimed was the Park Director, threatened them with police action in 1990, and snatched away their papers.	- DO -
The subsequent questions are from the migratory graziers schedule level 2. Only three of these could be filled in.							
(Q - 33) Factors which decide routes and grazing grounds	Tradition and Right.	Tradition and Right.		Tradition and Right			
(Q - 34) Does the composition of the graziers group change	The composition of a group does change	Composition of the group can change. However, there are some people who make the trip regularly, like an old man in the group, who has been coming regularly, without a single break, for the past 40 years.		Composition of the group can change. However, the replacement will be a person from the same village.			
(Q - 35) Change in composition of flock	None.	Question not asked..		None.			
(Q - 36) Right transference	Full rights are inherited by all descendents of a right holder.	Question not asked.		The right is vested in one person on behalf of a village. Since right belongs to a village, all residents of the village are entitled to it.			

	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5	SCHEDULE #6	SCHEDULE #7
[Q - 37] Impact on Park (Changes on habitat)	No change in habitat.	No long term change. In some years, however, when rainfall is less, grass cover is also less.		Availability of forest and grass cover has reduced. However, this is due to encroachment of forest by farmers etc. and restriction on use of other areas by authorities.			
[Q - 38] Resource use in park	Only resource used from forest is fuelwood. About 10 kg of wood gets used everyday. (This figure may not be very reliable since respondent did not give an answer. Later, when he was prompted by the interviewer, he said yes to suggested)	Said they used about 3 headloads a day of deadwood for fuel. Also use very small quantities of "Naini" a herb, for personal use. Marginal use of bamboos etc. for sticks. No other resource use.		Said they used about 7-8 kg deadwood a day for fuel. Sometimes use "Patish", a herb, as medicine for themselves or livestock. No other resource use.			
[Q - 39] Relationship with park/forest officials	NA	NA		The officials are accessible, but things like getting forms etc. for compensation is difficult.			
[Q - 40] Animals seen	No response.	Brown bear, Black bear, and Ghoral. The number of animals have reduced in the past few years.		Musk deer, Leopard, Brown bear, and Black bear.			

# ANNEXURE 30: COLLATION TABLE FOR VILLAGES SITUATED IN THE ADJACENT AREA OF GHNP (1994).

HEAD	VILLAGE SCHEDULE 1	VILLAGE SCHEDULE 2	VILLAGE SCHEDULE 3	VILLAGE SCHEDULE 4	VILLAGE SCHEDULE 5
	<p>Name of village : Chipni  Legal Status : Revenue  Panchayat : Tung  Tehsil : Banjar  Post Office : Bathad  Police Station : Banjar  Person spoken to: Pammanand (age-60), Male  Ramdas (age-65), Male  Ranidas (age-50), Male</p>	<p>Name of village : Shangarh  Name of hamlet : Chamarda/  Dhara Patara  Legal status : Revenue  Panchayat : Shangarh  Tehsil : Banjar  Post office : Sainj  Police station : Sainj  Person spoken to: All the heads of households were present</p>	<p>Name of village : Khuna.  Legal status : Revenue.  Panchayat : Tenda.  Tehsil : Banjar.  Sub tehsil : Sainj.  Person spoken to: Deb Ram  (Age-45 yrs),Male.</p>	<p>Name of village : Kelaban  Legal status : Revenue  Panchayat : Talera  Tehsil : Banjar  Post Office : Sainj  Police station : Sainj  Sub-Tehsil : Sainj  Person spoken to: Keshav Ram,  Surat Ram</p>	<p>Name of village : Neuli  Legal status : Revenue  Panchayat : Shansher  Tehsil : Shangarh  Post Office : Sainj  Police Station : Sainj</p>
Description of village	Village occupies 950 bighas of agricultural land and 500 bighas of forest land.	Village occupies 42 bighas of agriculture land, 8 bighas of grass-land and 8 bighas of forest land.	N.A.	Village occupies 80 bighas of agricultural land, 30 bighas of grass land.	N.A.
Population size	Village has 415 individuals, 54 families, 54 households and 108 adults.	Village has 87 individuals and 14 households.	Village has 10 individuals, 1 family, 1 household and 2 children.	There are 63 individuals, 10 households and 30 adults in the village.	N.A.
Declaration of park and its functions.	Yes, the villagers were aware of existence of the NP., but had no idea of its objectives. Yes, it is useful because it might give them employment. They have no idea what should be the objectives of Park. They were not consulted before the Park was established.	Yes, the villagers were aware of the existence of the NP, and the Park was notified ten years ago to protect animals. The park should not have been notified as it is not useful for them. Villagers do not know what the objectives of the Park should be and also were not consulted for the Park establishment.	Yes, the villagers were aware of the existence of the NP and knew that it was proposed 8-9 years ago with the objective of protection of animals. They had no idea of the notification of the NP and its objectives. They were also not consulted before the park was established.	Yes, the villagers were aware of the existence of the NP in the area and also knew that it was notified ten years ago. The main objectives of the NP was to protect animals and promote tourism and environmental protection. According to the villagers the tourism has developed and it has helped the economy of the area.	N.A.



HEAD	VILLAGE SCHEDULE 1	VILLAGE SCHEDULE 2	VILLAGE SCHEDULE 3	VILLAGE SCHEDULE 4	VILLAGE SCHEDULE 5
Significance of caste/religion in the economic status in village.	All are Hindus in the village with subcastes: Koli (SC) in 11 households, 98 bighas of land, 64 cows and 52 sheep. Kurnhar in 7 households, 33 bighas of land, 32 cows and 51 sheeps. Zamindar in 36 households, 819 bighas of land, 391 cows and 459 sheep.	All are Hindus in the village with subcast - Koli (Harjan) in 14 households having 42 bighas of land, 11 goat/sheep, and 14 cows. They do herb collection and agriculture.	All were Hindus in the village doing mainly agriculture and pastoralism. They had 60 bighas of land, 20 cows and 35 goats and sheep.	All are Hindus in the village with subcaste of Rajput in 10 households having 80 bighas of land, 100 cows and ox, 500 sheep and goat. They did mainly agriculture and Pastoralism.	N.A.
Important occupations.	All villagers did Cultivation, Pastoralism and a few do Herb collection. There were 6 people in government service in the village.	8 households do Cultivation, Guchi and Herb collection while 4 household do Pastoralism and 2 are in government service.	Main occupations that the villagers did were Cultivation and Pastoralism. They earned Rs. 1600/year from cultivation.	Main occupations of the village are cultivation, Pastoralism, Guchi and Herb collection. They earn Rs 5000 from cultivation, Rs. 10,000 from Pastoralism, Rs. 4000 from Guchi and Rs 2000 from Herb collection.	N.A.
Important skills	In the village all people did Spinning and Rope making. Some of the Koli's do Basketry also.	Koli's do Basketry (all of them are men). Their main product is kitta for carrying loads. Rope making is also done by men for various domestic uses.	Weaving, Spinning and Rope making are the skills possessed by the villagers. They used them only for domestic purposes.	Rajputs had Weaving, Spinning, Wood work, Rope making and Masonry. Pattu, Shelas, Coats, Wool, Doors and Windows were the products made by them for the domestic use.	N.A.
Land holdings.	<div>LAND HOLDINGS</div> <div>No. of Households</div> <div>Landless 0</div> <div>Below 4 bighas 5</div> <div>4-8 bighas 18</div> <div>8-16 bighas 12</div> <div>16-40 bighas 15</div> <div>Above 40 bighas 4</div>	<div>Land holdings</div> <div>No. of Households</div> <div>Below 4 bighas 14</div>	N.A.	<div>4-8 bighas 2 households</div> <div>8-16 bighas 8 households</div>	12 Bighas is the maximum that a household owns here.

HEAD	VILLAGE SCHEDULE 1	VILLAGE SCHEDULE 2	VILLAGE SCHEDULE 3	VILLAGE SCHEDULE 4	VILLAGE SCHEDULE 5
Livestock holding	For GOATS/SHEEP  Number    No. of Households 0            14 1-10        18 11-20       15 21-40       6 Above 4     1  For COW  Number    No. of Households 0            1 1-5          15 6-10        23 11-20       14 Above 21    1	For GOATS/SHEEP  Number    No. of Households 0            9 1-10        5  For COWS  Number    No. of Households 0            3 1-5          11	N.A.   Cows  6-10    10 households	Goats and Sheep  1-10      5 households above 41 5 households	N.A.
Legal status of grazing	Yes, the villagers have right to graze in the Park area with their rights recorded with the wildlife authorities and issued in the year 1911/1912. Period of validity of rights was till the Park was made. The villagers can go upto Tirth in the Park and can go as long as 4 months. Can take him as many livestock as they want, and enter the Park on foot.	There is no grazing in the Park.	Yes, the villagers had the right to graze in Bhalan Kothi. Their rights were recorded in the revenue record and were ancestral. Period of validity of the rights was for the months when cattle go in the Park. Villagers can go till Khande Dhar for 2 and 1/2 months. They can take with them any number of livestock.	Villagers have the right to graze by virtue of living in Kelaban. Their rights are recorded with the forest and revenue Depts. , and were issued in 1886, 1891 and 1948. Period of validity of the rights is until the next settlement. They can go to Khande Dhar in the Park till 2-3 months. They can take with them any number of livestock.	N.A.
Right transference	Right are inherited automatically from father. These can't be sold or bought and villagers also don't know anyone who has done that.	N.A.	Rights were inherited. Villagers had no idea about the buying and selling of rights nor of anyone who did so.	Any resident of Kelaban gets the right to enter the Park. Villagers don't know about the buying and selling of rights nor anybody who had done so.	N.A.

HEAD	VILLAGE SCHEDULE 1	VILLAGE SCHEDULE 2	VILLAGE SCHEDULE 3	VILLAGE SCHEDULE 4	VILLAGE SCHEDULE 5
Change in composition of livestock	Livestock owned by the villagers hasn't changed.	N.A.	The number of the livestock has been increasing because of reproduction. It would be 60-70 by the next year.	There is a decrease in number of livestock because people have lost interest in this occupation and want something better. This change has taken place about 15-20 years ago.	N.A.
Income from livestock	The villagers used shelas, meat and dung of the goat. They sold male kid and female kid each for Rs. 150-200/goat, male adult and female adult each for Rs. 1500/goat. Villagers also used 1 1/2 kg. of wool/sheep. They sold male lamb and female lamb each for Rs. 150-200/sheep, male adult and female adult each for Rs. 1500/sheep.	N.A.	Villagers get 6kg. of milk/day from one cow.	Villagers used 100 gms. of milk/day, 2kg. of wool/animal and meat of 30 goat or sheep. They sold 80 male kid for Rs. 1200-1300. They also used 100kg. of milk per day per cow.	N.A.
Payment for migratory grazing.	The villagers get 2-3Kg. of wheat for the whole herd, 1kg. com or 200gms. of ghee for 1 sheep or goat for grazing livestock of other villagers. They get food for the time livestock is kept in somebody's field en route overnight.	N.A.	N.A.	Villagers get Rs. 40 per day or an equivalent in wheat for grazing livestock of other villages.	N.A.
Inputs/cost into livestock	No cost was incurred last year by the villagers on maintaining and grazing the flock.	N.A.	Around Rs. 2000 was incurred the previous year on maintaining and grazing of the livestock.	About Rs. 5000-6000 may have been spent by the village for maintaining and grazing the flock.	N.A.
Grazing duration in the Park	Livestock is grazed from end of June to early October in the Park.	N.A.	Villagers take their flock in the Park from May/June till October/November for grazing.	The grazing time for the flock in the Park was from Aashad to Kartik.	Villagers graze their livestock in the park for 6 months.

HEAD	VILLAGE SCHEDULE 1	VILLAGE SCHEDULE 2	VILLAGE SCHEDULE 3	VILLAGE SCHEDULE 4	VILLAGE SCHEDULE 5
Grazing grounds while going up, coming down	Grazing route while going up the Park is Bakhadi, Mandroud, Shagut, Khurlipoi, Chandni, Phuphu, Sari, Jatholi, Bhagora Dunga, Mandrach, Bhagola, Shepa, Kukhri, Khol, Deobandh and Saketi. Grazing route while coming down the Park is same as going up.	N.A.	N.A.	N.A.	N.A.
Change in grazing grounds	There was no change in the route of grazing the livestock.	N.A.	N.A.	N.A.	N.A.
Resources used by respondents in the Park and there availability	Villagers have no idea about the consumption of fodder by the flock. They use 1 quintal of fuelwood for fire when they go for grazing in the Park at night. The availability of resources has decreased for the past one year.	N.A.	N.A.	During the winter months 2kg. of grass and 3-4kg. of leaves per day were used for the goats and sheep.	N.A.
Monitoring and regulation of grazing	Villagers were not stopped from using their traditional route, grazing their flock, taking the livestock in the Park and for the number of livestock grazed. They were also not checked by the authorities while going in and coming out of the park.	N.A.	N.A.	N.A.	N.A.
History of grazing	Approximately 3-4 people from the village do migratory grazing. Area of the grazing of livestock has not changed and also the quantum of livestock has not changed.	N.A.	N.A.	Number of people engaged in migratory grazing has decreased because of the interest in other occupations. There was no change in the areas of grazing but the quantum of the livestock has decreased.	N.A.

HEAD	VILLAGE SCHEDULE 1	VILLAGE SCHEDULE 2	VILLAGE SCHEDULE 3	VILLAGE SCHEDULE 4	VILLAGE SCHEDULE 5
Economics of herb collection	<p>TURNOVER (Previous season 1993)</p> <p>Dhup 50-60 quintals - Rs. 50/kg. Kadu 15-20 quintals - Rs. 62/kg. Nihani 15-20 quintals - Rs. 62/kg. Galakkada 50 kgs - Rs. 25/kg.</p> <p>Shingli 10-12 quintals - Rs. 10-12/kg. Patis 1 1/2 quintals - Rs. 500-600/kg.</p> <p>Villagers don't know about the economic chain of Herb collection. There was no cost incurred on Herb collection during the season 1993.</p>	<p>Turnover (Previous season(1993))</p> <p>Guchi - 10 Kg. - Rs. 2500/Kg. Dhup - 6 quintals - Rs. 35/Kg. Kadu - 40 Kg. - Rs. 20/Kg. Patis - 30 Kg. - Rs. 600/Kg. Panja - 30 Kg. - Rs. 250/Kg. Shingli - 5 quintals - Rs. 10/Kg. Mushkabala - 2 quintals - Rs. 10/Kg.</p> <p>These Herbs reach Kullu or Bhuntar and eventually get to Amritsar or Delhi. There was no cost incurred on Herb collection in the previous season.</p>	N.A.	<p>Herb - Sold - Rate</p> <p>Guchi - 40kg. - Rs. 3000/kg Nehanu - Rs. 3000/kg Banagsha - Rs. 3000/kg</p> <p>Most of the herbs end up in either Amritsar or Delhi.</p>	N.A.
Income from herb collection	Respondents earn 70-80% of their cash income from Herb collection.	N.A.	N.A.	N.A.	N.A.
Important herbs and their ecological status	Herbs Kadu, Patis and Nihani are present in rare quantity while Galakkada,Dhup and Shingli are present in abundant quantity.	Villagers earn 100% of their cash income from herb collection.	N.A.	N.A.	N.A.
Herbs and their local use	<p>Kadu is used locally for Fever,its root is used and is extracted by plucking. Patis is used in stomach ache,its root is used and method of extraction is digging. Nihani is used in tobacco and daerroeah, part of it used is the root and the method of extraction is digging. Dhup is used as incense, the part used is the root while the method used for extraction is digging.</p>	N.A.	N.A.	N.A.	N.A.

HEAD	VILLAGE SCHEDULE 1	VILLAGE SCHEDULE 2	VILLAGE SCHEDULE 3	VILLAGE SCHEDULE 4	VILLAGE SCHEDULE 5
History of herb collection	40-50 people are engaged in Herb collection in the village. Their number has increased over years due to population increase. Area and quantum of Herb collection has not changed during the recent years. They have been engaged in Herb collection since a long time.	Herb collection has been going on for centuries, but only recently it has become economically important. Earlier to earn money one would do labour in Shimla.	N.A.	Villagers have been involved in herb collection for a long time. All the people have been engaged in Guchi collecting which has increased since 10-15 years.	N.A.
Monitoring and Regulation of Herb collection.	Villagers were not stopped from collecting from the park, either any type of herb or any quantity. Restrictions were also not imposed on them in terms of time of collection. The park authorities did not check them for their rights, quantity and species of Herbs extracted.	Villagers were not stopped from collecting herbs in any quantity or any species but were told not to collect herbs before August. Park authorities did not check them.	N.A.	N.A.	N.A.
Areas of Herb collection and markets to which villagers supply Herbs	Area of Herb collection was the same as that used for grazing. Villagers sell the Herbs in the markets of Bathad and Gushiani.	Villagers enter the Park via Lapah, Shakti and Marour. Herbs were collected from the village itself. There is no pattern for collecting herbs. The herbs are located in Naina, Kumba, Dhar, Dhela, and Rakti	N.A.	N.A.	N.A.
Factors influencing the duration of the Herb collection	When the output from land is less, then the villagers go in for Herb collection. Herbs are not collected during monsoon and winters.	Snow and rain effect the herb collection.	N.A.	N.A.	N.A.
Since when Herb collection became the main income generating activity	Herb collection became the main income generating activity of the villagers from the past 40-50 years.	About a generation ago herb collecting has become the main income generating activity. Earlier people used to go to Shimla to earn money.	N.A.	Herb collection has become the main income generating activities since 10-15 years.	N.A.

HEAD	VILLAGE SCHEDULE 1	VILLAGE SCHEDULE 2	VILLAGE SCHEDULE 3	VILLAGE SCHEDULE 4	VILLAGE SCHEDULE 5
Income generated by other major activities.	N.A.	N.A.	N.A.	Agriculture is the main income generating activity of the villagers besides Grazing and Herb collection.	N.A.
Crops descriptions.	Crops grown in the village are Corn, Wheat, Potato, Rajma and Barley. Saryera was the crop grown earlier but has been substituted after 1950 with Corn and Rajma, which are the crops grown presently.	Wheat, Barley, Corn, Saryera, and Rajma are the crops grown in the village. These vary according to rain. There is no change in the crop yields.	Crops grown in the village are Corn, Tomato, Potato, Wheat, Rajma, Rice, Mirch, Urad dal (black pulses). Saryera and Barley were grown earlier but now Corn and chillies are grown.	Corn 4-5 quintals/bigha Wheat 2 quintals/bigha Rajma 3-4 quintals/bigha Urad Dal 2 quintals/bigha Potato 10-12 quintals/bigha  Saryera and Barley were grown earlier while for the last 20-25 years these have changed to Corn and Wheat.	N.A.
Impact of park on crops.	The crops are damaged by the wild animals and half the fields are destroyed. There hasn't been any change in the crop damage in the past few years. Villagers have asked for compensation but it was not given to them.	Crops are considerably damaged by wild animals. Crop damage has increased in the past 10 years, because there is a ban on hunting animals.	Crops are damaged by wild animals but there is no change in the past few years. Compensation was not asked for by the villagers because they don't know whom to ask.	Crops are damaged by the animals but the damage is not very heavy. This change has been for the past 10-12 years.	N.A.
Steps taken for protection of crops.	Steps used for protection of crops in the village are Making noise, Lighting fire and Guarding at night. Villagers also want to use guns but due to restrictions by the Park authorities they are unable to do so.	Villagers make noise to protect their crops. They would like to kill the animals but are unable to do so. They were not consulted before the restrictions were applied.	Making noise was the only step taken to protect crops in the village. No restriction was imposed for the above step.	Villagers use dogs and kill animals with guns.	N.A.
Restrictions and their details.	N.A.	N.A.	N.A.	Restrictions are existing but not imposed on the villagers.	N.A.
Species responsible for crop damage and crops favoured by them	Monkeys, Bears, and Porcupines are responsible for the loss of the crops and livestock damage. Leopards also affect the villagers as they lift their cattle. Bears eat up the Corn fields.	Monkeys, Bears, Porcupines, Rats and Crows are responsible for crop loss. Potatoes and Corn are the crops mostly effected by Bears.	Monkeys, Bears, and Porcupines were responsible for the crop loss and Corn was the main crop destroyed by the	Monkeys, Bears, Porcupines and Parrots effect the crop and Corn is mainly effected.	N.A.

HEAD	VILLAGE SCHEDULE 1	VILLAGE SCHEDULE 2	VILLAGE SCHEDULE 3	VILLAGE SCHEDULE 4	VILLAGE SCHEDULE 5
Problems and their Solutions.	Major problems faced by the villagers are Illiteracy, lack of houses and Roads, and lack of drinking water. Land is steeply sloped and Electric supply is infrequent. Other major problem is Poverty arisen due to Unemployment, Less yield from agriculture and Small land holdings.  Solutions to these problems are facilities for Education and Employment. Better road network for transportation of agricultural surpluses, Water for irrigation, and Pension for old people and widows.	The major problems of the village are unemployment and small landholdings. Solutions to these problems are the outlets for Poultry, Khaddi, Apiculutre, Weaving and Carpentry. There is also a need to promote tourism and Marketing.	N.A.	Villages has no communication and transport network. Bridal Paths and rope ways can be used as solutions to the above problems.	Collection of herbs and Guchi are the problems of the villagers. They also find growing Wheat and Barley difficult because of small land holdings. Solutions to the problems were distribution of Potato and apples to cooperatives, roads for transportation so that poultry farming, peas cultivation and wild apricot collection becomes profitable.
Alternative activities that could be possible in village.	Alternative activities possible in the village, if the activities of the village taking part in the Park are to be phased out, are Sewing Centre, Fish Farm and Poultry Farming.	No alternative sources of income are possible in the village.	N.A.	N.A.	N.A.
Any acknowledged leader and NGO/NGI working in the village.	There is an acknowledged leader in the village. There is no NGO/NGI working in the village.	No acknowledged leader or NGO/NGI are working in the village.	N.A.	N.A.	N.A.
Womens' representation in Gram panchayat, Panchayat Samiti and Zila Parishad.	No.	Yes, Shori Devi (Barshangart).	N.A.	N.A.	N.A.
Relations with other villages and Government/Forest department	Villagers can work together with the people of other villages. Their relations with Government/Forest Department are cordial.	Villages don't cooperate with each other, but there are friendly relations with Government and Forest Department.	N.A.	N.A.	N.A.



HEAD	VILLAGE SCHEDULE 1	VILLAGE SCHEDULE 2	VILLAGE SCHEDULE 3	VILLAGE SCHEDULE 4	VILLAGE SCHEDULE 5
Description of any waste land around the village.	Villagers have no idea about this.	N.A.	N.A.	N.A.	N.A.
Activities taken to minimise needs from Forests/Park, and their merits& Demerits.	Villagers want help to buy Jersey cow as it is better. But they don't know about hybrid seeds.	N.A.	Villagers did not use old seeds as the hybrid seeds had more yields.	N.A.	N.A.
Any traditional occupations taken up as full time income generation activities.	Making Pattus for selling can be taken up as full time income generation activity. But they don't know about any other alternatives.	Making Pattus and Apiculture can be taken up as full time income generation activities.	N.A.	N.A.	N.A.
Use of traditional practices and their details.	Villagers don't know about any such practices.	Villagers are aware of growing Dhup, artificially for the last 4-5 years in Chamarda. This was done by Ses Ram of Chamarda and Sab Ram of Goshthi, but they failed in it.	N.A.	N.A.	N.A.

# ANNEXURE 31: COLLATION TABLES FOR GRAZIER'S SCHEDULES ADMINISTERED IN 1992

HEAD	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5	SCHEDULE #6	SCHEDULE #7
	Sch. No.: GT01 Date: 28/6/92 Place of interview: Balu (Between Rolla & Chalocho) Time: 11:20-12:00noon. Person spoken to: Hire Ram, Beli Ram	Sch.No.: GT02 Date: 30/6/92 Place of Interview: Bakhari Thach Time: 11:30-12:30p.m. Person spoken to: Lal Das, Ganga Ram, Alam Chand, Bale Ram, Jhabe Ram, Man Singh, Lal Das, Deer Singh, Him Raj.	Sch.No.: GT03 Date: 30/6/92 Place of interview: Tachiti Thach Time: 5:30-6:15p.m. Person spoken to: Pegl Ram, Ved Ram	Sch.No.: GT04 Date: 5/7/92 Place of Interview: Kundri Thach Time: 7:05-8:00a.m. Person spoken to: Tek Ram, Hire Singh, Hukem Ram, Mansukh	Sch.No.: GT05 Date: 5/7/92 Place of interview: Marani Thach Time: 9:25-9:37 Person spoken to: Teja Singh, Rajinder Kumar, Udai Ram	Sch.No.: GT06 Date: 5/7/92 Place of interview: Kundri Thach Time: 3:45-4:30p.m. Person spoken to: Led Ram, Darshan Singh	Sch.No.: GT07 Date: 6/7/92 Place of interview: Dashmani Thach Time: 9:05-9:50a.m. Person spoken to: Dile Ram, Kashi Ram
Number of livestock/ other animals owned by group members	Hire Ram- 27-sheep, 36-goat, 2-dogs. Beli Ram- 21-sheep, 23-goat, 1-dog.	Lal Das has 120-S, 150-G, Ganga Ram- 80-S, 100-G, Alam Chand- 150(group of S&G), Bale Ram- 150(group of S&G), Jhabe Ram- 80-S, 52-G, Man Singh- 88-S, 83-G, Lal Das- 53-S, 88-G, Deer Singh- 62-S, 57-G, Hem Raj- 80-S, 70-G. And everybody has a dog.	Pegl Ram- 15-S, 10-G and 1 dog. Ved Ram- 20-S, 10-G and 2 dogs.	Tekram- 35-S, 25-G, and 3 dogs, Hire Singh- 35-S, 20-G and 1 dog, Hukam Singh- 45-S, 25-G and 1 dog, Mansukh- 50-S, 20-G and 2 dogs.	Teja Singh- 100-S, 80-G and 2 dogs. Rajinder Kumar- 130-S, 110-G and 1 goat. Udai Ram- 100-S, 300-G and 1 dog. Darshan Singh- 130-S, 110-G and 1 dog. [Only Rajinder Kumar was there at the Dera, and did not have answers to most questions. The senior members of the group were away. Two sheep they had lost and also get provision.	Led Ram has 10-S and 5-G.	Dile Ram- 40-S, 62-G and 3 dogs. Kashi Ram- 35-S, 30-G & 2 goats.
Remaining livestock in Village/Panchayat/Tehsil	Dhar- 25-sheep, 33-goat, Sungcha- 5-sheep, 3-goat, Daran- 14-sheep, 16-goat, Tinga - 14-Sheep, 8-goat	Kothi Shikari/Vill Shil - 100(group of S&G) Kothi Sarchi/Vill Juthle- 12-S, 12-G.	Mashiar- 245(group of S&G)	Ghat- 80(group of S&G). Lagcha- 84(group of S&G).	Plaich Kothi- 50-S, 30-G. Nahanda Kothi (Pekhri)- 140-S, 60-G.	Pekhri - 27S, 28-G	Nehani- 50(group of (S&G). Shlinga- 60(group of S&G). Tinga- 30(group of (S&G).
Changes in number of livestock	Increased because of reproduction, also as human population has increased the livestock population has also increased. These changes have occurred since past several years.	Increased because of reproduction and trade. It takes place over a long period of time.	Number has decreased because of trade. People are selling off their goats and sheep because they find it increasingly difficult to maintain them since the past 10-15 years.	Increase because of reproduction and trade since past 10 years.	Not known.	Decreased because of inheritance and trade. Divided his livestock amongst himself and his sons into four parts last year. His sons sold off their portion.	Increased because of reproduction and trade. Also increase in human population since past 10-15 years.

HEAD	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5	SCHEDULE #6	SCHEDULE #7
Economics - Turnover [Previous year(1991)]	10 male kid sold for Rs300/-, and 10 male adult goats sold for 600/- Used also 80kg of wool from sheep.	Used 12 ltrs/day of milk from goat. 50 goats(male & female kid & male & female adult) were sold. Most of them were females sold for Rs.600-800. Kids for about Rs.100-150, Male about Rs.1000. 7quintal of wool used from sheep. 50 sheep were sold for same price as for goats.	5ltrs/day of milk and 30-35kg(6 shelas)/year of wool used from goats. 25-30 goats (male & female kid, male & female adult) per year are sold for Rs. 500 each. 2 quintal of wool used from sheep and 10-12 (male & female lamb, male & female adult)/year are sold for Rs.400 each.	2kg/day of milk, 7shelas of wool used from goat. 3 animals are used for meat. 10 sheep (male & female kid, male & female adult) sold for Rs.300-700 each. 80kg. of wool used from sheep, 20sheep(male & female lamb, male & female adult) sold for Rs.300-600 each.	Used 1kg/day (an average) of milk from goat.	15kg/day of milk and 1shela(an average) of wool used from goats. 3 goats were sold for Rs.500-600 each. 2 pattu and 1 pajama made by wool of sheep. 3 sheep were sold for Rs.450-500 each.	5kg/day of milk, 6shelas of wool used from Goat and 4 animals are used for meat. 10goats(male & female kid, male & female adult) sold for Rs.600-1000 each. 30kg of wool used from sheep and 10 sheep (male & female lamb, male & female adult) sold for Rs.300-600 each.
System of payment for grazing livestock of other individuals/ families/villages	For 6 months grazing 1kg of wheat and 1rupee is paid for every livestock grazed sometimes, ghee is substituted for money.	Rs.5/livestock for 4 months of grazing.	Rs.10/livestock for 4 months grazing.	20kg atta and 1kg ghee for every 10 animals.	Rs.10/goat.	40kg atta+2kg ghee for 6 months grazing of 55 livestock.	22kg atta+2kg ghee for every 10 animals.
System of payment if they keep their flock overnight in somebody's ghee field on route	One nights meal along with a little bit of somebody's ghee	Meals are provided for the period of stay	No.	A meal every third day.	Not known.	1.5kg atta+150gm ghee after 3 nights	A meal every third day.
Any other transaction	No	None.	None	None.	Not known.	None.	None
Costs[Previous year (1991)]- total costs incurred on maintaining and grazing flock	Rs 400/- on salt and its transportation of the group.	Rs.3500-4000 divided equally among all members	Rs.2200/- approx. for 4 months.	Rs.1800-2000.	Not known.	Rs.2000	Rs.1200.

HEAD	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5	SCHEDULE #6	SCHEDULE #7
Area of grazing	Place of origin and approx. date-14/6/92 from Daran, destination and approx. date- 15/9/92 to Daran Route while coming up- Dhar, Balu(2), Marala Khol, Rikundi, Ghumterao(6).  Nara(6), Majhani(20), Chakr er(14), Sabdari(5), Charara Sankha(6). Route while going down- Hara Sankha, Nara(2), Pardi, Shilt (5), Bahri(30), Khalti (30). After this, roam around at random and spend nights in fields of farmers for about a month.	Place of origin and approx. date- Dingcha, Aashad(Sank ant), Place of destination and approx. date- Dingcha, Kartik after 4 months. Coming up route- Dingcha, Kharongcha(8), Ba khadi(30), Bischul(8), Mand reor (15), Gala Gad(7), Dhela(7), Deasu(12), Asurbagh (45), Dhawadari(20). Going down route- Ghumterao, Dhawadari, Charkha(5), Batiali(5), Basu(30), Dingcha.	Place of origin and approx. date- Mashlala, Aashad, 14 pravishla (26 June), Place of destination and approx. date- Mashlala, Kartik , 4 Pravishla. Coming down route- Mashlala, Tachiti(8), Bisch ul(12), Asurbagh(8), Ratta Deber(30), Kochhra(25). Going down route- Kochhra, Bischul(20), Tachiti, (14), Jigah(14), Khanershu (12), Dubcha(10), Mashlala.	Place of origin and approx. date- Rangath Khel near ghat on 18 May, Place of destination and approx. date- Rangath Khel on 17th October. Coming up route- Rangath Khel, Dashmani(8), Kundri(40) Chakrera(10), Heru Duar (3), Phori Duar (3), Titla (10), Patal(3), Ghumterao(2) Bargarhi(8), Bakhni Duar(3), Barigachi(3), Kobri (30), Pabri(10), Bithu Thach(15). Going down route- Bithu Thach, Nara(1), Chalocha(3), Pucha Duar (3), Balu(2), Dhar (1) Rangli(3), Rangath Khel.	Place of origin and approx. date- Sirikot, Place of destination and approx. date- Sirikot. Coming up route- Sirikot, Kundri(7), Marani, Dhela. Going down route- Dhela, Marani, Kundri, Sirikot. [Number of days stayed in each location not known.] Ghumterao, Patal(2), Phari Duar (2), Marani(15), Rangth arh(2), Bithu thach(20), Deo Karda(10), Pekhri. [would also have gone to Kobri, Kamba]	Place of origin and approx. date- Pekhri, 20 May. Place of destination and approx. date- Pekrhi, 19 October. Coming up route- Pekhri, Ghat(15), Rangtharh (15), Dashmani(20), Marani (10), Phari Duar(2), Patal(2), Ghumterao, (60). Going down route- Pakhni(14), Bithu Thach(14).	Place of origin and approx. date- Rangath Khel near Ghat in Aashaad. Place of destination and approx. date- Ghat, Sauj Coming up route- Rangath Khel, Dashmani(15), Kundri (3), Jommu Nal(7), Phari Duar (2), Patal(4), Ghumterao (4), Bargarhi(4), Baringcha (4), Kobri(30).  Going down route- Bithu Thach, Nara(3), Dhar(1), Reense (10), Kulem Thach, Baringcha, Jeun Khel(30), Ghat.
Any changes in route, if not then what is the basis of following this route authorities.	The route has not changed, and is based on their right.	No change in route. Basis is tradition and legal right.	No change. Traditionally been following the same route.	No change. It is their traditional route and registered with the F.D.	Not known.	No change, traditional route.	No change. Traditional route.
Per day consumption of fodder by the goats and sheep	2 bojha of grasses and 2 bojha of leaves for goats and same quantity for sheep per day. (Each bojha is about 40kg.)	Fodder consumption is 2 bojha of leaves for goats 2 bojha for sheep. (each bojha is about 35-40kg.)	Per day fodder consumption is 1 bojha of grasses for goats and 1 bojha for sheep (1bojha=60kg.)	10kg of grasses for goats and same quantity for sheep.	Not known.	Consumption of fodder is 10kg grasses for goats, and same quantity for sheep.	10 kg of grasses for goat and same quantity for sheep used for fodder.
Collection of fodder in the Park	No.	No.	No.	No.	Not known.	No.	No.
Other resources used by the respondent	60kg of fuelwood per day and some fruits etc. like jamun or walnut are used.	1 quintal/day (about 3 bojha) of fuelwood used by the respondent in the Park.	2 bojha/day of fuelwood is also collected by respondent. (1bojha=40kg.)	1 quintal of fuelwood is used per day.	1 quintal per day of fuelwood is used by respondents.	4 quintals per day in thaches where wood is available. Higher up, use about 4 quintals of Rhododendron every 15 days.	1 quintal of fuelwood per day.

HEAD	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5	SCHEDULE #6	SCHEDULE #7
Any changes in the availability of resources used from the Park	No	Fuelwood has become scarce since the past 3-4 years. This is due to increased human presence (herb collectors etc.) in Park.	No changes.	Fuelwood has become scarce due to increased human pressure.	Not known	No change	Fuelwood has become scarce due to increase in human pressure.
the respondent - rightholder	Right recorded with Patwari and Forest Department, issued from a long time, validity is forever. They can go to the park as per recorded right	Yes, they are able to go anywhere in the park as per right.	Yes, rights were issued more than 100 years ago, period of validity is forever, they can go anywhere in the park as per right, they can also bring any number of livestock.	Yes, they are recorded in Banjar generations ago. They can go into the park as per right. They can bring as many livestock as they want	Not known.	Yes, recorded in Forest Office since long time. Period of validity is forever. He can go in to the park as per right and bring as many livestock as he can wants.	Yes, they are recorded in Banjar, rights issued generations ago and its validity is forever. They can go into the Park as per right and bring as many as livestock they want.
possession of right individually, family - se, or village wise)	Right is of the village.	Not known.	Village wise.	Village wise.	N.Known	Rights were given on the name of a 'Rasu' but belonged to the village.	Village wise..Right is on the name of a 'Rasu' but belongs to the entire village.
ow can these right be -nferred/inherited	Descendants inherit rights	Passed on through generations.	Passed on through generations.	Rights are transferred from father to son.	N.K.	Rights were passed on from father to the son.	Rights passed on through generation.
in such rights be -ght or sold by the -ter	No	No	No.	No.	N.K.	No	No.
the respondent -ght or knows -one who might -bought or sold a - term of the transaction	No	Not relevant	Not relevant.	Not relevant.	N.K.	Not relevant.	Not relevant.
the grazer been -ted from using -tional route	No	No	No.	No.	No	No.	No.
izing his flock in a -rtain area	No	No	No.	No.	No.	No.	No.
oving in more than - certain number of -vestock	No	No	No	No	No	No	No.

HEAD	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5	SCHEDULE #6	SCHEDULE #7
Bringing in his livestock during a certain period of the year	No	No.	No.	No.	No.	No.	No.
Any other restrictions	None	None.	None.	None.	None.	None.	None
Has the respondent been checked by the authorities for the number of livestock he brings into the Park	Yes, at the interview site the same day.	Yes, Asurbagh(1990), Dingcha(1991),.	No.	Yes, since the past 3 years. No specific location.	No.	No.	Yes, every year since the past 5 years.
Other impacts of the Park	2 goats killed previous night. 32 killed last year.	Damage to livestock by wildlife.	None.	None.	N.A.	None.	None.
How many people are currently engaged in migratory grazing, number of graziers migratory grazing now increased or decreased	Not known.	Not known.	Not know.	More people are doing migratory grazing now than before.	N.K.	About 150 people (50 groups) are engaged in "Phoali", in the Sainj & Tirthan valleys. The number has certainly increased over time and will continue to increase if allowed, because this is one of the profitable traditional activities.	175 people (about 50 groups). The number has increased over the past 5 years or so due to increase in human and livestock population.
Any changes in the areas over which livestock is being grazed	No	No change due to specifications in rights and natural reasons.	No change.	No change.	N.K.	No change.	No change. As per nght.
Any changes in the quantum of livestock being grazed	Changes are same as given in Q-3	Yes, due to increase in population.	Decrease in quantum of livestock being grazed.	Increased number of livestock being grazed now due to increase in population.	N.K.	Livestock has increased as population has increased.	Increased due to increase in human and livestock population.

HEAD	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5	SCHEDULE #6	SCHEDULE #7
Annual economic activity cycle	March-May(Char-Baisakh)- Guchi and agriculture. May-Nov.(Jaiith-Kartik)- graze cattle,goat,sheep Nov.Dec (Mankshar)- Collection of fuel and fodder for winter. Dec.-Feb.(Poh-Maagh)- It snows not much work. However, collect dung for manure. Feb.-March(Phagun)- Agriculture and collection of leaves for fodder.	All year round take care of sheep and goat, when in village, take care of own G&S. Every year, the same person migrates with the flock unless he falls ill, becomes too old, dies or has some other very pressing engagement. Some of the older men of this group have been doing this for decades	All year do 'Phoali'. The rest of the members of the family do other things. These two have been coming every year for the past 14 years.	Graze livestock all 12 months of the year members of the family do other things like agriculture, herb collection etc.	Only do 'Phoali' Other	Do mainly 'Phoali' all year round. Dec -Jan.(Poh)- Collection of fuel and fodder Feb -March(Phagun)- Preparing fields for sowing corn.	Do 'Phoali' all 12 months of the year
Respondents cash income generating activities besides Pastoralism	Guchi- Rs.2000 per person. If family is large, the income is more. Pastoralism- Very little cash income.	Other members of their family are engaged in herb collection, agriculture,apples etc.	Cannabis- Rs.2000 (however not this year) Herb collection- Rs.4900 Guchi- Rs.2400	None.	None.	None.	None.
Are you aware of the existence of the national park	Yes, 3 years ago from F G	Yes, came to know about 3-4 years ago when staff was deployed and work began	Yes, 2 years ago when staff was deployed and work began	Yes, 3 years ago when staff was deployed and work began.	N K	Yes, 4-5 years ago when Mr. "Shabab" announced it	Yes, 5 years ago when work began and staff was deployed.
Should a national park have been notified in this area	No, this is because our livelihood depends on this area.	No, what will our goats and sheep do.	No, we need the area to graze our livestock.	A national park should be made, but our livelihood should not get affected.	N.K.	Yes, but the forest should not be closed.	Yes, but our rights should not be extinguished.
Are you aware of the objectives with which this Park was set up	Yes, to protect animals, they agree with this objective (But their interests should also be protected)	Yes, protect wildlife. they do not agree with this objective. Park should benefit both humans and animals.	Yes, to protect animals. They do not agree with this objective.	No.	N.K.	Yes, to protect wildlife. He agrees with this objective	No.
Any traditional practices for protection and promoting regeneration of grazing lands	None	No	No.	No	Not asked.	No	No
Are these methods still in practice? If not, why have they been terminated	N.A	Not relevant.	Not relevant.	Not relevant.	Not asked.	Not relevant.	Not relevant.

HEAD	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5	SCHEDULE #6	SCHEDULE #7
What alternatives does the respondent think can be made available to grazing as an income generating activity	If a road is provided, then we can grow apples on our land. Also other possibilities will open up. At the moment apples are the most preferable alternative.	If a road is made, then peas, potatoes etc. can be grown commercially. Also apples. Tourism can also generate income, and handicrafts of the area can be commercialised if the govt. supports it. Only the person from Mashiar, whose village is situated at a high altitude, said that land based activities would not succeed in his village, because the productivity of land is low since his village is very cold.	Only want a govt. job as an alternative. No other alternative acceptable. Mashaira population= 20HH= about 15 people.	There can be no alternative to seasonal grazing. This is because without such grazing, they cannot maintain their sheep and goats which they need for their wool and their manure which is essential for land.	Not asked.	No alternatives to grazing exist since whatever alternatives are they can not be substitutes for this particular activity.	No alternatives are viable. Their village is at a height so apples, peas, potatoes etc. do not grow well.



HEAD	SCHEDULE #8	SCHEDULE #9	SCHEDULE #10	SCHEDULE #11	SCHEDULE #12	SCHEDULE #13
	Sch No : GT08 Date: 6/7/92 Place of interview Rangtharh Thach Time: 10:45-11:20 Person spoken to: Bansu Ram, Pine Ram, Thakuro	Sch.No.: GT09 Date: 10/7/92 Place of interview: Nana Tapra Time: 5.23-5.53 Person spoken to: Kamle Ram, Hukum Ram, Brij Lal	Sch.No.: Sainj01 Date: 3/7/92 Place of interview Thatapani(Marour) Time: 6:45-8:00a.m. Person spoken to: Binkamchand,Laganchand, Harbansraj,Joginder Singh,Medharam.	Sch No : Sainj02 Date: 3/7/92 Place of interview. Avni Thach Time: 4:0-4:45p m Person spoken to: Khyalaram,Ponehram,Bir Singh,Dharamdas,TejaSingh, Ratiram,Jai Singh,Navalram, Debisingh,Noopram	Sch No : Sainj03 Date: 4/7/92 Place of interview Chyos Thach Time: 1:20-2:00p.m Person spoken to: Sebaram,Bhagwandas,Amarch and,Tuleram,Motiram,Surat Ram	Sch.No : Sainj04 Date: 5/7/92 Place of interview Parkachi Thach Time: 10:00-11:30 Person spoken to: Anoopram,Gumatram,Inder Singh,Mohr Singh,Shivram, Tikamiram,Shivram,ManSingh, Tarachand
Number of livestock/other animals owned by group members	Bansu Ram- 66(group of S&G). Pine Ram- 11-S,7-G. Thakuro- 40(group of S&G). Everybody also has dogs.	Kamle Ram- 40-S,30-G & 1 dog. Hukum Ram- 50-S,10-G & 1 dog. Brij Lal- 60-S,17-G & 2 dogs.	Binkamchand- 60+35-S & 100+30-G. Laganchand- 60+6-S & 60+14-G. Harbansraj- 16+3-S,30+3-G and 1 dog. JoginderSingh & Medharam- 140+40-S & 20+4-G.	Khyalaram- 70+30-S,40+20-G and a dog. Ponehram- 40+8-S,50+16-G and a dog.Birsingh- 60+14-S,40+3-G. Dharamdas- 80-S,54+20-G, Tejasingh- 52+4-S,40+10-G,Ratiram- 40-S,61+11-G, Jaisingh-69-S, 28+11-G and a dog Navalram- 43+7-S,8+1-G and a dog Debisingh- 46+2-S, 50+20-G. Noopram- 45+1-S,65+7-G.	Sebaram- 31-S,70+35-G,1-Dog. Bhagwandas- 58+2-S,50+25-G,1-Dog. Amarchand- 60-S,70+30-G,1-Dog. Tuleram- 70-S,11+1-G&1-Dog Motiram-70-S,40+15-G, Suratram-60-S,100+20-G&1- Dog.	Anoopram- 100+9-S,103+20-G and 1-Dog. Gumatram- 10+2-S,73+15-G & 1-Dog. Indersingh- 140+20-S,43+7-G and 1 dog Mohrsingh- 100-S,40-G & 1 dog Shivram- 61-S,80+28-G. Tikmiram- 71-S,14+5-G Shivram- 70+1-S, 15+5-G. Mansingh- 54-S,20+4-G Tarachand- 93+14-S, 30+5-G and 1 dog
Remaining livestock in Village/Panchayat/Tehsil	Nahin- 78(group of S&G) Shalinga- 112(group of S&G) Darhi- 35(group of S&G)	Dingcha,Kaoncha & Nahin has a group of 400 S&G.	Ropa/Suchani,Nahr/Suchani ,Devn,Banogi has group of 80-S & 200-G	Livestock taken from several villages of Rajen panchayat. Specific no. not known.	Khawach/Bakhnaou, Dugoot/Bakhnaou, Deem/Bakhnaou- 38-S,45-G	Khanag,Dagsan and other vills of Lajhen Panchayat- 40-S,15-G
Changes in number of Livestock	Yes, increased because of reproduction and trade, also increasing population since past 8-10 years.	Yes, increase because of reproduction and trade since past 10 years.	Yes, sold off more livestock than number increased through reproduction since last few years.	Minor fluctuations in total number. Reproduction main reason for increase. Disease and trade main reason for decrease.	Yes, increased because of reproduction. Large no. died 2 yrs ago when struck by disease Now no has stabilised again	Flocksize more-or-less constant Increase due to Reproduction, Decrease due to Disease, Predation,trade and Devta tax

HEAD	SCHEDULE #8	SCHEDULE #9	SCHEDULE #10	SCHEDULE #11	SCHEDULE #12	SCHEDULE #13
Economics - Turnover (Previous year(1991))	5kg/day of milk, 3shelas used from goat and 4 animals are used for meat. 6-7 goats(male & female kid, male & female adult) sold for Rs.500-550. 10Paltus(about 40kg) of wool used from sheep and 6-7sheep (including male & female lamb, male & female adult) sold for Rs.450-500.	4kg/day of milk, 10shela of wool used from goat and also 3-4 animals are used for meat. 20 goats(male, female kid, male, female adult) sold for Rs. 600-900. 20 pattus of wool are used from sheep and 35 sheep(male&female lamb, male&female adult) sold for Rs.500-800.	Milk used and wool sold for Rs.50/kg from goat. 2-3 male & female kid sold for Rs.200-300 and 5 male & female adult sold for Rs.1200. Same quantity of sheep sold for same rate. Milk also used and wool sold for Rs.50/kg.	Milk and wool used from goats. 30goats sold-male kid for Rs.500, female kid for Rs.450-600, male adult for Rs.1200, female adult for Rs.800 and dung for Rs.15-1800/truck. Same quantity of milk and wool used from sheep and also 30sheep sold for same price as goats.	Milk & wool used from goats. 30-40goats sold(including sheep)- Male kid for Rs.250, Female kid for Rs.300, Male adult for Rs.300-1000 and Female adult for Rs.400-600. Milk and wool also used from sheep. Male lamb sold for Rs.250, Female lamb for Rs.300, Male adult for Rs.500, Female adult for Rs.500.	Wool sold from goats for Rs.35/kg. 15-20goats sold(incl. sheep)- Male kid for Rs.400/3month, female kid Rs.400, male adult Rs.15-1700/5year and female adult Rs.700. Wool sold from sheep for Rs.100/kg. Male lamb sold for Rs.4-450/2month, female lamb Rs.4-450/2month, male adult Rs.1200/4year. Female adult Rs.700.
System of payment for grazing livestock of other individuals/families/villages	22kg atta+2 kg ghee from every person whose livestock is grazed.	20kg atta+Rs.20 for every 10 animals sent by each family.	2kg wheat/1seer ghee/Rs.5-8/2sheer salt/per head of livestock.	Rs. 12/head of livestock.	Rs.10/head of livestock. 1seer ghee per 10 head of livestock.	Rs.15/head and some ghee (6 chhalank. 1 chhatank=50gm).
System of payment if they keep their flock overnight in somebody's field on route	4kg atta after every third day+250gm ghee.	3kg atta+250gm ghee after every 3 days.	1 seer ghee/meal/chowkider.	Meal for all lands/provide chowkider.	Meal/chowkider.	Meal/choukider.
Any other transaction	None.	No.	None.	None.	Dung worth 24 nights to Marounis and 3-5 head.	None.
Costs(Previous year (1991))- total costs incurred on maintaining and grazing flock	Rs.150 [Figure is low because they carry salt for animals and rations for themselves on their journey].	Rs.3500 approx.	Rs.800/month per person.	Rs.1500/head.	Rs.4000/group, Rs.750/head.	Rs.1000/head.

HEAD	SCHEDULE #8	SCHEDULE #9	SCHEDULE #10	SCHEDULE #11	SCHEDULE #12	SCHEDULE #13
Area of grazing	Place of origin and approx. date- Lagcha, 21 May. Place of destination and approx. date- Lagcha, 20 Nov. Coming up route- Lagcha, Shupat thali(13), Rangtharh(10), Dashmani(3), Kundri(4), Phan Duar (2), Patal(4), Bargarha (5), Kobri(45), Pakhni(10) Going down route- Bilhu Thach(16), Nara, Chalocha, Balu, Reonse(3), Pucha(3), Dhar (2), Lagcha.	Place of origin and approx. date- Dhara, Aashaad. Place of destination and approx. date- Badli, Kartik. Coming up route- Dhara, Shill(10), Gurahni, Kharu Thach, Chalocha, Nara(12), Balu, Shankha(6), Majhauni (30), Charkera(20), Sapdhari (5), Chanaur Shankha(6), Thintha Nal, Majhla Shankha(2). Going down route- Majhla Shankha, Shankha, Hara(2), Nara(4), Chalocha, Khoru Thach, Gurahni, Droma(4), Dhara, Baali(19).	Place of origin and approx. date- Ropa-Haad, Place of destination and approx. date- Shtolim thach-Sawan Coming up route- Ropa(1), Shiemgarh(1), Shugar(1), Thatapani(Marour) (1), Shanjal (1), Shtokin (2months). Going down route is same as coming up.	Coming up route- Shoja (1), Ghegr Khad(1), Kuttadhar (1), Devri (1), Gushaini(1), Mraeldu (1), Pronathad(1), Dahinani (2), Batakundi(1), Phaelttoo Thach(1), Jamural(2), Dhela (1), Manjhan galu(1), Humikani(3), Kaner guda(1), Thalarpani(2), Sudrabudra(1), Krechar(3), Choli Brahminoli(7), Badi Brahminoli(9), Avni Thach(4), Raklikhol(7), Bajavin(5), Jatika jaoda(2), Rakti Tapra(1month). Going down route- Duari(7), Gushaini(15), Jaura(18), Rahni(4), Jaoda(4). other routes are same as coming up.	Place of origin and approx. date- Gaad in Jaith. Place of destination and approx. date- Jaraun tapra in Sawan. Coming up route- Sarohar(1), Khanura(1), Traldra(1), Chakku(1), Lama thach(1), Saradali(1), Damo- ala(1), Mreldru(1), Sarah(1), Dashmani(1), Kundri(1), Phari duar (1), Dhela(1), Manjhan galu(1), Humikani(1), Kanagula (1), Thatapani(1), Sudal budra(1), Revishi(1), Nainithua(8), Brahmcholi(1), Chyos(4), Sattu u(4), Rati Doari(12), Jaura(12), Jarown (25). Going down route is same.	Place of origin and approx. date- Khenag in Jaith. Place of destination and approx. date- Munda Tapra in Sawan. Coming up route- Sreonsar(1), Dundku(2), Suradali(2), Dhaunda(1), Mreku (1), Rangtharh(1), Dashmani (2), Kundri(3), Phaetu thach(1), Jamu Nal(1), Dhela(1), Manjhan galu(3), Humikani(2), Kemugula (2), Thatapani(1), Sudrabudra (3), Krechar(5), Kali Thach(6), Parkachi(4), Rakti Sar (3), Poltu(1), Munda tapra(15), Ghamshali(20), Shili Dhamshadi. Going down route- Rat Duan(10), Indra(7), Raal(1 2), Jaoda(5), Poltu(20) and other routes are same as coming up.
Any changes in route, if not then what is the basis of following this route	No change. Traditional route.	No change. Traditional route.	No change, followed as per right.	No change. This has been traditional route for generations.	Yes, no bridge to Nari Naina. Lost a man 9 years ago trying to put up bridge. Die not try again.	No change, followed as per right
Per day consumption of fodder by the goats and sheep	10kg. of grasses for goats and 10kg grasses for sheep used as fodder	4kg of grasses for goats and 4kg grasses for sheep used as fodder per day.	Not known.	Not known.	Not known. (No grazier can ever tell!)	Not known.
Collection of fodder in the Park	No.	No	No.	No.	No	No
Other resources used by the respondent	1 quintal of fuelwood per day used by respondent.	1 quintal per day of fuelwood used by respondent.	15-20 kg/day of fuelwood used.	Fuelwood- 15-20kg/day. Herb collection for own use. also use dhup, panja and patish.	15kg/day depends on weather & no. of people. Karoo, patis for own use. and also some guchhi.	20kg/day of fuelwood and 1-2 kg of guchhi.

HEAD	SCHEDULE #8	SCHEDULE #9	SCHEDULE #10	SCHEDULE #11	SCHEDULE #12	SCHEDULE #13
Any changes in the availability of resources used from the Park	Fuelwood has become scarcer due to increased human pressure.	No change.	There has been less grass for the last 2 years.	None.	No change. Has been coming for 21 years.	None for last 15 years, grass less this year due to late snowmelt.
Is the respondent a rightholder	Yes, recorded in Banjar, rights issued generations ago and period of validity is forever. They can go into the park as per right and bring as many livestock as many as they want.	Yes they are rightholder but now known where they are recorded. They can go into the park as per right and bring livestock as much as they can bring.	Yes, they are recorded in Forest Department, Sainj. They can go to Shatokni thach for 3 months. The livestock they can bring is not fixed.	Yes, they are recorded in OFO, Banjar. They are not specified about area they can go.	Yes, they are recorded in Forest Department; Banjar. They can go to Nian Naina in the Park.	Yes, recorded in Banjar, Div.HQ, DFO Seraj. Period of validity-open ended. They can go Munda lapra in the park.
Possession of right (individually, family wise, or village wise)	The right of their village is in the name of Gange Ram 'Rasu' of Ghat.	Khep Ram Negl of Ranha beyond Banjar has the right in his name on behalf of the villages of Shungcha, Daran, Dhar and Rerha in kothi chalni.	Related to Jopheram of Ropa village who was original receiver of right.	Inherited from ancestors.	Right given to Bijaram f/o Kanuram f/o Loharu f/o Thebaram.	Right give to Anoopram's forefathers.
How can these right be transferred/inherited	Passed from father to son.	Rights are passed on from one generation to the next.	No legal procedure exists to make such transfers.	Not known.	Statement of transfer made out on stamp paper under instructions from Park Director, did 6/7/90.	No transfer.
Can such rights be bought or sold by the holder	No.	No.	No.	N.K.	No.	No.
Has the respondent bought or knows someone who might have bought or sold a right, term of the transaction	Not relevant.	Not relevant.	No.	No.	No.	No.
Has the grazier been stopped from using traditional route	No.	No.	No.	No.	Yes due to natural circumstances.	No.
Grazing his flock in the certain area	No.	No.	No.	No.	No.	No.
Bringing in more than a certain number of livestock	No.	No.	No.	No.	No.	No
Bringing in his livestock during a certain time of the year	No.	No.	No.	No.	No.	No.
Any other restrictions	None	None.	None so far.	N.A.	N.A.	N.A

HEAD	SCHEDULE #8	SCHEDULE #9	SCHEDULE #10	SCHEDULE #11	SCHEDULE #12	SCHEDULE #13
Has the respondent been checked by the authorities for the number of livestock he brings into the Park	No	Yes, since the past 3 years. No specific location.	Yes, Maraur, 1991 season.	Yes, Shakti, last year.	Yes, Maraur, Gushaini.	Yes, Maraur, last year.
Other impacts of the Park	None.	None.	N.A.	N.A	N A	N.A
How many people are currently engaged in migratory grazing, number of graziers increased or decreased	Not asked.	Not asked.	Number not known but has reduced over the years Other employment opportunities and education.	Many groups from Ani tahsil not all come to Park	Nearly all HH in panchayat have livestock, only 6 do summer grazing	All in Panchayat have livestock. Only 10 come for grazing
Any changes in the areas over which livestock is being grazed	Not asked.	Not asked.	None.	No change	Yes, natural circumstances. No bridge to cross with is to Nian Naina thach	No
Any changes in the quantum of livestock being grazed	Not asked.	Not asked.	Yes, many more people keeping small number of sheep and goats.	No change.	No.	Lesser no. of groups coming to valley now. New generation unwilling to undertake task.
Annual economic activity cycle	Do 'Phoali' 12 months of the year	Do 'Phoali' all 12 months of the year. The other members of the family do other jobs like herb collection or agriculture.	March-Oct. (Chait-Sauj)- Agriculture, begin summer grazing. Oct.-Nov. (Kartik)- Agriculture, return to village. Nov.-March (Mankshar-Phagun)- snowbound.	May-June (Jaith)- Leave village- Agri June-Oct. (Aashaad-Sauj)- Agri. Oct.-Nov. (Kartik)- Return to vill. Nov.-March (Poh-Phagun)- Snow	March-May (Chait-Baisakh)- Agri May-June (Jaith)- begins June-Oct. (Aashaad-Sauj)- Agri. Oct.-Nov. (Kartik)- Grazing ends, Agri. Nov.-March (Mankshar-Phagun)- Snow	May-July (Baisakh-Aashaad) - Agriculture, grazing Grazing begins. Oct.-March (Kartik-Phagun) Agri, Winter grazing in Ani and Loohti, grazing ends.
Respondents cash income generating activities besides Pastoralism	None.	None.	None.	Agri- potato, peas - Rs 4-5000.	None.	Agri- 3 months worth subsistence
Are you aware of the existence of the national park	Yes, 3 years ago when people started talking about it.	Yes, 3 years ago when work began.	Yes, 2-3 years, Saini	Yes, 6-7 years, forest guard, Gushaini.	Yes, Gaston and Garson 10 years ago.	Yes, 10-12 years ago from Shabab.
Should a national park have been notified in this area	If the govt. wants to do something what can we do to stop it.	Yes, they hope that this area will be developed and the paths along which they move improved.	Necessary to have areas for wildlife.	No, National Park to appease the poor.	Yes, home for flora and fauna	Yes.

HEAD	SCHEDULE #8	SCHEDULE #9	SCHEDULE #10	SCHEDULE #11	SCHEDULE #12	SCHEDULE #13
Are you aware of the objectives with which this Park was set up	Not relevant.	Yes, to protect wildlife and agree with this objective.	Yes, to protect wildlife, and they agree with this objective.	No.	No.	No. grazing should continue.
Any traditional practices for protection and promoting regeneration of grazing lands	No.	No.	Yes. 3 groups come to Shtokni. Each has own area. Arrival and departure staggered.	Maraur devta decides routes and no. of days after Maraaur.	Once near head waters devta assigns thaches for grazing.	Maraur Devta decides where flock should go.
Are these methods still in practice? If not, why have they been terminated	Not relevant.	Not relevant.	N.A.	Yes.	Yes.	Yes.
What alternatives does the respondent think can be made available to grazing as an income generating activity	There are no alternatives to grazing. They can't grow apples or peas because their villages are very high up and it is very cold there. That is why their land is less productive.	There can be no alternatives to grazing. They need these pastures to sustain their livelihood.	Improve agriculture, Govt. should provide alternative jobs.	Government job and alternate grazing areas.	Government job, alternate grazing grounds.	Improve agri., alternate grazing grounds, govt. job, village development.

## ANNEXURE 32: COLLATION TABLES FOR HERB COLLECTORS' SCHEDULES ADMINISTERED IN 1992

HEAD	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5
	Sch. No. : HT01 Date : 28/6/92 Place : Balu Time : 12:05-12:45p.m. Village of Origin of herb collector : Tek Ram-Dingcha,Ram Singh-Dingcha,Gurdhan-Kaoncha	Sch. No. : HT02 Date : 28/6/92 Place : Chalocha Time : 6:10-6:55p.m. Village of Origin of herb collector : Dhani Ram-Dingcha,Amar Singh-Tilinga,Anup Ram-Tilinga	Sch. No. : HT03 Date : 3/7/92 Place : Kharongcha Time : 5:00-5:30p.m. Village of Origin of herb collector : Kevai Ram,Jai Ram-Dingcha.	Sch.No. : HT04 Date : 4/7/92 Place : Kharongcha Time : 5:45-6:19p.m. Village of Origin of herb collector : Roop Singh-Tilinga,Pyarelal-Shalinga	Sch.No. : HT05 Date : 4/7/92 Place : Kundri Thach Time : 5:30-6:11p.m. Village of Origin of herb collector : Inder Singh,Ram Ratan-Pekhri
Areas already visited or to be visited in Park on this trip	Kobri Thach - 1 day. [Previously the father of the Dingcha boys & Gurdhan had spent 2 days extracting herbs].	Pakhni - 7-8 days.	Kobri - 3 days (Visit cut short because of rain).	N.A.	Marani- 3-4 days,Kundri- 8-9 days so far 15-20 days more. Patal,Bargarha,Joul,Ghumterao, Rakhundi,Dhela- about 3 months
Any other purpose of this visit	No.	None.	None.	Place to be visited- Ghumtarao- 7-8 days.	
Quantity of herb in possession or to be collected	Chunhri - 55kg (W) in 3 packs.	Karu & Nehani - 50-55kg(W) of Nehani will dry to 25-30kg, &  100-110kg(W) of Karu will dry to 70-90kg.	Galakkada - 10kg(W)=2kg(D).	Galakkada-80kg(W) to be collected. estimate, depends on the weather.	Mehndi- 4-3 mon Dhup,Nehari, Kara, Patish- No

HEAD	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5
Economic - Turn over (1991)	Dhup- 65kg(W)- Rs.20/kg for dry Dhup. Sold about 20-25 kg of Dhup after drying it.	Karu- 54+39kg for Rs.50/kg, Nehani-40kg for Rs.50/kg, Guchi- 1/2+1/2+1/2 for Rs.2000/kg, Guchi(1992)- 1+2+1/2 for Rs.2800/kg.	Nehani-40kg for Rs.55/kg, Karu-40kg for Rs.62.50/kg, Dhup-160kg for Rs.30/kg, Guchi-4kg for Rs. 1800/kg, Guchi(1992)-3kg for 3300/kg.	Nehani-30kg for Rs.50/kg.,Guchi-300gm Price Rs.1200/kg,Guchi(1992)-200gm PriceRs.2900/kg.	Nehani- 350-400 kg for Rs. 50/-per kg Karu- 100-120 kg for Rs. 50/-per kg Dhup- 300-320 kg for Rs. 25/-per kg Potish- 7-8 kg for Rs. 400/-per kg Guchi- 8-10 kg for Rs. 3000/-per kg
Costs incurred on herb collection in the previous season (1991)	None.	None.	None.	None.	Rs. 2000-3000 for carriage.
Markets to which the respondent supplied herbs	Gushaini (Lala Dwarka).	Gushaini (Lala Dwarka and Bhagwan Das Sharma).	Gushaini (Lala Dwarka).	Gushaini (Lala Dwarka).	Gushaini (Lala Dwarka & Bhagwan Das Sharma)
Area of herb collection - which locations they use to go to the Park(entry point)	Kharongcha.	Kharongcha.	Kharongcha.	Kharongcha.	Lagcha via Dashmani
Areas of herb collection- which places they use to go out of the Park (exit point)	Kharongcha.	Kharongcha.	Kharongcha.	Kharongcha.	Lagcha via Dashmani
Location - herbs extracted [Previous season (1991)]	Tirth - Dhup extracted.	Kukhri - Karu extracted, Jatholi - Nehani extracted, Forests- Guchi extracted.	Tirth-Dhup extracted, Kobra/Shankha-Nehani/Koru extracted.	Pakhni- Nehani extracted.	List as on preceding page
Since when has the respondent been involved in herb collection	Gurdhan has been doing it for 10-15 years.	Dhani Ram is involved since he was a kid. The others stated last year. Amar Singh had a job as a daily wages in HPSEB till 1990.	For about 15-20 years.	Since past 4 years.	4-5 and 22-23 years



HEAD	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5
Is the respondent rightholder for this area	Yes, they go anywhere in Tirthan valley as often as required. They collect anything (Shingli was banned but now the ban has been lifted). As much as possible is collected.	Yes, they have go to anywhere as often as needed, and collect anything except Shingli & Rakhaal as much as can be carried.	Yes, they go anywhere as often as required. They can collect anything as much as they can carry.	Respondent was not able to understand this question.	Yes, the right is recorded in forest office at Banjar, issued Generations ago. Period of validity forever. The go anywhere as often as needed.
Has the respondent been stopped from collecting herbs in a certain area	No.	No.	No.	No.	No
Collecting more than a certain quality of herbs	No.	No.	No.	No.	No.
Collecting a certain herbs	No.	Yes, Shingli and Rakhaal also from this year.	No.	Yes, Shingli mingli which is banned.	No.
Collecting herbs during a certain time of the year	No.	No.		No.	No.
Other restrictions	None.	None.	None.	None.	None.
Checked by authorities for a right/permit while coming in to the Park	No.	No.	No.	No.	No.
Checked by authorities for the kind of herbs and the quantities he is carrying out of the Park	Yes, Balu, before interviewed.	No.	Yes, Kharongcha and at times in the thaches since the past 5 years.	No.	No.
Other impacts of the Park	Crop damage in village.	Crop damage by wild animals.	None.	Crop damage and livestock damage.	Crop damage & livestock damage.

HEAD	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5
Respondents annual activity cycle	<p>March-May (Chait-Baisakh) - Guchhi &amp; agriculture.</p> <p>May - July (Jaith-Aashaad) - Agriculture &amp; herb collection.</p> <p>July-Sept. (Sawan-Bhadon) - Works on his small apple orchard &amp; herb collection.</p> <p>Sept-Jan. (Sauj-Poh) - Collection of fodder and fuel as well as agriculture and herb collection also.</p> <p>Jan-March (Maagh-Phagun) - It snows, so not much work, collect leaves for fodder.</p>	<p>March-May(Chait-Baisakh) - Guchi &amp; Agriculture (maintenance of fields i.e. weeding etc.)</p> <p>May-July(Jaith-Aashaad) - Harvesting of wheat and barley.</p> <p>July-Aug..(Sawan) - Sowing of corn and saryara.</p> <p>Aug-Sept.(Bhadon) - Herb collection and crop protection.</p> <p>Sept.-Nov.(Sauj-Kartik) - Harvesting corn and Saryara and sowing wheat and barley.</p> <p>Nov.-Jan.(Mankshar-Poh) - Collection of fuel and fodder for the winter.</p> <p>Jan.-March(Maagh-Phagun) - Mostly stay at home due to snow, make pattus etc.</p>	<p>March-June(Chait-Jaith)-Guchi and preparing of fields and sowing corn,saryara and rajma.</p> <p>June-July(Aashaad)- Reaping of wheat and jao, and also herb collection.</p> <p>July-Aug.(Sawan)- Corn and peas are sown and herb collection.</p> <p>Aug.-Oct.(Bhadon-Sauj)- Herb collection.</p> <p>Oct.-Nov.(Kartik)- Reaping of corn, saryara and sowing wheat and jao. and also collection of fuel and fodder.</p> <p>Nov.-Jan.(Mankshar-Poh)- Collection of fuel and fodder.</p> <p>Jan.-Feb.(Maagh)- Area snow bound so no work to be done.</p> <p>Feb.-March(Phagun)- Guchi collection.</p>	<p>March-April(Chait-Baisakh)- Guchi</p> <p>April-July(Jaith-Aashaad)- Seeding of corn, saryara, rajma and reaping of wheat and jao.</p> <p>July-Sept.(Sawan-Bhadon)- Herb collection.</p> <p>Sept.-Nov.(Sauj-Kartik)- Reaping corn, saryara, rajma &amp; sowing wheat &amp; jao.</p> <p>Nov.-Dec.(Mankshar)- Daily wages employment with N.P. work.</p> <p>Dec.-March(Poh-Phagun)- It snows, so stay at home.</p>	<p>March-May(Chait-Baisakh)- Guchi</p> <p>May-July(Jaith-Aashaad)- Reaping of wheat and jao and collection of herbs</p> <p>July-Sept.(Sawan-Bhadon)- Sowing of Peas, Potatoes. Corn, Rajma, Saryara. Also apples to be tended &amp; herbs collection</p> <p>Sept.-Oct.(Sauj)- Reaping of corn etc. &amp; sowing of wheat &amp; herbs collection</p> <p>Oct.-Dec.(Kartik-Mankshar)- Cutting fuel &amp; fodder and herbs herb collection</p> <p>Dec.-Feb.(Poh-Maagh)- preparation of fields for peas &amp; potatoes</p> <p>Feb.-March(Phagun)- It snows, so no work</p>
Respondents' income generating activities besides herb collection (Previous Season (1991))	Guchi- Rs.5000,Herbs- Rs.1000,Labour- (only for Dingcha walas) Rs 600	Cannabis- Rs.700+300 (Dhani Ram does not do)	None.	Daily wage labour- Rs.500/-	Peas & Potatoes- Rs.2000 Apples- Rs.9000 (1)
Factors which determine/influence the duration of the herb collection season	Snow, Rains etc.	Snow.	Snow.	Snow.	Snow
Respondent's cash income comes from herb collection	Almost entire cash income from Guchi and herbs.	About 70% to 80% (includes Guchi).	100% from herb and Guchi.	Almost 100%.	About 70% to 80%
Other resources used by the respondent in the Park	Fuelwood - 80kg.x5 days approx. Eat Jamu etc. also.	60-70kg/day fuelwood used and Jamu is eaten.	Fuelwood - 1 quintal a day.	Fuelwood- 20kg/day when weather is good and sky is clear, otherwise about 1 quintal/day	More than a quintal a day. Jamu, Khad, Khanoor, Rosal, Walnut.

HEAD	SCHEDULE #1	SCHEDULE #2	SCHEDULE #3	SCHEDULE #4	SCHEDULE #5
Have any changes in the availability of resources used from the Park and since when	No.	Fuelwood is getting scarcer as people's pressure increases.	No change.	Drywood for fuel has become scarcer in the past 4 years because of increased pressure from the people.	Fuelwood has become scarcer because of increased people's pressure.
Are you aware of the existence of the national Park	Yes, 3 years ago from F.G.	Yes, 3-4 years ago when staff was deployed.	Yes, about 5 years ago when staff was deployed and work began.	Yes, 7 years ago when staff was deployed.	Yes, 2 years ago when work started.
Should national park have been notified in this area	Yes, this is because we might get some employment.	For protection of wildlife and to stop illegal activities. It should have been notified. We were hoping it would generate some employment for us.	Yes, this is because we were hoping that we will get some benefit from it.	No, because our livelihood gets affected.	A park should have been notified, but it should not affect our livelihood.
Are you aware of the objectives with which this Park was set up	Yes, for protection of animals and they agree with this objective.	Yes, the park was set for the protection of flora and fauna. They do not agree with this objective. They want to improve their livelihood and employment. Only locals should get jobs in the park and not outsiders.	No.	Yes, to protect wildlife. They do not agree with this objective. It should have been for the protection of people from wildlife.	Yes, to protect wildlife.
Any traditional practices for protection and promoting regeneration of herbs	Rotation of location of collection.	Rotation is done.	Rotation of thaches.	None.	Rotation of locations.
Are these methods still in practice? If not, why have they been terminated	Rotation still practised.	Yes.	Yes.	Not relevant.	Yes
Any attempts to artificially grow herbs	No.	No.	No.	No.	No

## HEAD

What alternatives  
does the respondent think can be made  
available to herb collection as an  
income generation activity.

## SCHEDULE #1

If a road is made then  
increased tourism will lead to  
additional employment. Also it  
will be viable to grow apples.

## SCHEDULE #2

If a road is made, then it  
will be possible to  
commercially grow apples and  
plums etc. Also, opportunities  
for manual labour or porters  
will increase.

## SCHEDULE #3

If a road is made, then we can  
grow apples. May be the govt.  
will also provide us with  
jobs. We can also  
commercialise our agriculture  
by growing potatoes etc.

## SCHEDULE #4

If a road is made, then we can  
grow apples. Tourism can also  
provide employment for us.  
The govt can carry out  
construction work to generate  
further employment.

## SCHEDULE #5

If a road is made, then things like  
Apples, Peas, potatoes etc. can  
be really viable. Tourism can  
also generate employment. Also  
the park should employ locals  
instead of outsiders. Of the  
above, Apples are the most  
attractive alternative.  
However, grazing can not be  
stopped.

HEAD	SCHEDULE #6	SCHEDULE #7	SCHEDULE #8	SCHEDULE #9	SCHEDULE #10
	Sch.No. : HT08 Date : 6/7/92 Place : Dashmani Thach Time : 8:45-9:00a.m. Village of Origin of herb collector : Jeet Ram Pamar-Nadar	Sch.No. : HT09 Date : 10/7/91 Place : Chalocha Time : 10:00-10:40 a.m. Village of origin of herb collector : Dule Ram,Chemat Ram,Chande Ram, Keshav Ram, Ropa	Sch.No. : HT10 Date : 12/7/92 Place : Shankha Time : 10:30-11:00 a.m. Village of Origin of herb collector : Beli Ram, Sukh Ram-Tinder	Sch.No. : HT11 Date : 12/7/92 Place : Shankha Time : 11:05-11:45 a.m. Village of Origin of herb collector : Ber Chand, Keshav Ram,Gridhari Lal, Ram Lal-Shungcha	Sch.No. : HT12 Date : 13/7/92 Place : Tirth Time : 9:15-9:5 a.m. Village of Origin of herb collector : Balak Ram,Uttam Ram,Ram Singh,Dhani Ram-Tinder
Areas already visited or to be visited in Park on this trip	Dhela- 4-5	Tirth- 8, Ghumterao- 3, Tirth- 40-50 (4 to 5 trips)	Shankha and Chakrer- 7-8 days (leave tomorrow), make about 8-10 trips in a season.	Tirth- 7-8 days, make about 8-10 trips in a season.	Tirth- 4(3-4 days more), make about 4-5 trips in one season
Any other purpose of this visit	None	None	None	None	None
Quantity of herb in possession or to be collected	Nehani- 15 kg Karu- 15 kg	Chunkhri- 20/-kg Dhup- 40/-kg Galakkad- 40/-kg Karu- 25/-kg	Nehani- 60 kg, reduces to about, 15-16 kg when dried	Dhup- 100 kg approx Galakkad- 30-35 kg	Dhup- 60 kg(all per)- 150 kg Karu- 60 kg(all per)- 120 kg
Economic - Turn over (1991)	Nehani, Karu- Sold worth Rs. 1500 Guchi- Sold worth Rs. 1000 Guchi(1992)- Sold worth Rs.800	Dhup- 450-500 kg for Rs. 25/-per kg Karu- 40 kg for Rs. 62/-per kg Nehani for Rs. 3000/-	Karu for Rs. 2000(1) Dhup for Rs. 3000(2) Guchi for Rs. 2500+3000 Guchi (1992) for Rs. 2000+3000	Dhup for Rs. 4000/- Nehani for Rs. 5000/- Karu for Rs. 6000/- Patish for Rs. 2000/- Guchi for Rs. 4000/- Guchi(1992) for Rs. 2000/-	Karu, Nehani for Rs. 3000: Guchi for Rs. 2500 : only for Balak Ram Guchi (1992) for Rs. 3000:
Costs incurred on herb collection in the previous season (1991)	None	None	None	About Rs. 1000/- carriage	None
Markets to which the respondent supplied herbs	Gushaini	Gushaini (Lala Dwarka)	Gushaini (lala Dwarka)	Gushaini (Dwarka & B.D. Sharma)	Bathad (Aam Chand pradhan)

HEAD	SCHEDULE #6	SCHEDULE #7	SCHEDULE #8	SCHEDULE #9	SCHEDULE #10
Area of herb collection - which locations they use to go to the Park(entry point)	Via Lagcha and Dashmani	Kharongcha	Kharongcha	Kharongcha	Kharongcha
Areas of herb collection- which places they use to go out of the Park (exit point)	Via Lagcha and Dashmani	Kharongcha	Kharongcha	Kharongcha	Kharongcha
Location - herbs extracted [Previous season (1991)]	Dhela- Nehani and Karu	Tirth, all herbs listed above Khol - Karu	Tirth- Dhup Chakrer, Patal, Tirth	Pakhni, Nara, Shankha,	Kukhri, Jatholi- Karu & Nehani
Since when has the respondent been involved in herb collection	4-5 years	For about 4-5 years	Since both were 10-12 years old	Since they were 14-15 years old.	5-6 years
Is the respondent rightholder for this area	Yes, they can go anywhere in Tirthan valley & Dhela & Dhara Thach as often as needed, they collect anything as much as required.	Yes, recored in Banjar, the holder can go Anywhere, they go as many times as needed they collect anything that is in demand, they collect any amount	Yes, recorded in Panchayat & forest office, issued long ago, period of validity forever, the holder can go Anywhere, they go as often as they want, they collected any herb, they collect any amount that can be carried	Yes, recorded in Office in Banjar, issued long ago, period of validity forever, the can holder go anywhere, they go as many times as they want, they collected anything, they collected any amount.	Yes, recorded with the Patwari, issued long ago, period of validity forever, the holder can go anywhere, they go as often as needed, they collected anything, they collected any amount.
Has the respondent been stopped from-collecting herbs in a certain area	No	NO	No	No	No
Collecting more than a certain No quality of herbs	No	NO	No	No	No
Collecting a certain herbs	No	NO	No	No	No
Collecting herbs during a certain time of the year	No	NO	No	No	No
Other restrictions	None	None	No	None	None
Checked by authorities for a right/permit while coming in	No	No	No	No	No

HEAD	SCHEDULE #6	SCHEDULE #7	SCHEDULE #8	SCHEDULE #9	SCHEDULE #10
Checked by authorities for the kind of herbs and the quantities he is carrying out of the Park	No	Yes, last year in Kharongcha	Yes, since the past 3-4 years in Kharongcha	Yes, past 3 years in Kharongcha	No
Other impacts of the Park	None	None	None	None	None
Respondents annual activity cycle	March-May(Chait-Baisakh)- Guchi May-June(Jaith)- Sowing of corn etc. June-July(Aashaad)- Reaping of wheat & Barley and herbs collection. July-August(Sawan)- Herbs collection. Aug.-Sept.(Bhadon)- Collection of fuel and fodder and herbs. Sept.-Oct.(Sauj)- Reaping of corn etc. Oct.-Dec.(Kartik-Mankshar)- Sowing of wheat and barley Dec.-March(Poh-Phagun)- Snow, so no work	March-May(Chait-Baisakh)-Reaping of wheat and jao and preparing fields for sowing corn & wage labour. May-June(Jaith)- Herbs June-July(Aashaad)- Sowing of corn, rajma, saryara July-August(Sawan-Bhadon)- Herbs Aug.-Oct.(Bhadon-Sauj)- Herbs Oct.-Nov.(Kartik)- Reaping of corn etc. & sowing of wheat & jao Nov.-March(Mankshar-Phagun)- Snow, so no work	March-May(Chait-Baisakh)- Preparation of fields or sowing corn & potatoes & Guchi May-June(Jaith)- Guchi & herbs June-July(Aashaad)- Reaping of wheat & jao & herbs July-Sept.(Sawan-Bhadon)Preparation of fields or sowing wheat & jao & herbs Sept-Oct.(Sauj)- Sowing wheat & jao & herbs Oct.-Nov.(Kartik)- Coll of fuel & fodder & herbs Nov.-Dec.(Mankshar)- Herbs Dec.-March(Poh-Phagun)- Snow so stay at home and make shelas & pattus.	March-May(Chait-Baisakh)- Preparation of fields for and sowing of corn & potatoes + Guchi May-July(Jaith-Aashaad)- Reaping of wheat & jao & Guchi July-Sept.(Sawan-Bhadon)- Preparation of fields for wheat & Jao and reaping corn Sept.-Nov.(Sauj-Kartik)- Sowing of wheat & Barley Nov.-Dec.(Mankshar)- Collect fuel & fodder Dec.-March(Poh-Phagun)- Snow, so stay at home	March-May(Chait-Baisakh)- Sowing of saryara, potato, peas, and corn + guchi May-June(Jaith)- Reaping of barley & guchi and herbs June-July(Aashaad)- Reaping of wheat and herbs July-August(Sawan)- Sowing of rajma & saryara corn & herbs Aug.-Sept.(Bhadon)- Herbs Sept.-Oct.(Sauj)- Sowing of wheat and barley Oct.-Nov.(Kartik)- Collection of fuel and fodder Nov.-Dec.(Mankshar)- Reaping of corn, rajma, potatoes etc. Dec.-Jan.(Poh)- Snow
Respondents' income generating activities besides herb collection [Previous Season (1991)]	None	Wage labour- Rs. 1500/- approx	None	None	None
Factors which determine/influence the duration of the herb collection season	Snow	Snow	Snow	Snow	Snow
Respondent's cash income comes from herb collection	100%	About 90%	100%	100%	100%

HEAD	SCHEDULE #6	SCHEDULE #7	SCHEDULE #8	SCHEDULE #9	SCHEDULE #10
Other resources used by the respondent in the Park	fuelwood 4-5 kg/day, figure seems very low but respondent stuck to his ans. despite asking him again & again.	fuelwood 40-50 kg/day	fuelwood 2 quintal per day, some fruits like Jamu etc.	30 kg of Juniper per day	Use about 50 kg per day (Juniper & Rhododendron)
Have any changes in the availability of resources used from the Park and since when	No change	Fuelwood has become scarce due to increased human pressure	No change	Juniper has become scarce due to continuous extraction	Fuelwood has become scarce due to increased human pressure
Are you aware of the existence of the national Park	Yes, 2-3 years ago when the staff was deployed.	Yes, 5 years ago when work on building began	Yes, 3 years ago when work began.	Yes, 3 years ago when staff was deployed & work begun	Yes, 4-5 years ago when work begin
Should national park have been notified in this area	Yes, It will bring prosperity to the region	Yes, because we hope that everyone will get employment.	No, because this will adversely affect our livelihood	As long as our livelihood is not affected, we have no objections to the park.	No, this will adversely affect our livelihood
Are you aware of the objectives with which this Park was set up	No	Yes, to protect wildlife.	No	No	No
Any traditional practices for protection and promoting regeneration of herbs	No	No	Rotation of location	Rotation of location	No
Are these methods still in practice? If not, why have they been terminated	Not relevant	Not relevant	Yes	Yes	Not relevant
Any attempts to artificially grow herbs	No	No	No	No	No



HEAD	SCHEDULE #6	SCHEDULE #7	SCHEDULE #8	SCHEDULE #9	SCHEDULE #10
Does the respondent think can be made available to herb collection as an income generation activity.	It a road is made, then we can make a business out of apples, peas, palatoes. The government can also generate additional employment.	We can not generate enough from our land ( : apples, peas etc.), even if a road is made, to affset the loss in income due to the closing up of the park. The govt. will have to give us some employment. We could also do menial jobs like being porters for tourists.	We need alternatives which are not land based since we have very little land and whatever little we have is not very fertile.	Extraction of herbs and grazing of sheep can never be stopped, since this is the only source of our livelihood. Our land is not productive enough. What we need is schools in our villages and roads and bridges. Being local people we should be employed in works of the park, but we do not even get wage labour from the contractors.	There can be no alternatives to herb collection. This is the only source of our livelihood.

HEAD	SCHEDULE #11	SCHEDULE #12	SCHEDULE #13	SCHEDULE #14	SCHEDULE #15
	Sch.No. : HT13 Date : 14/7/92 Place : Kukhri Thach Time : 3:30-4:05 p.m. Village of origin of herb collector : Dil Sukh-Kaoncha	Sch.No. : HT07 Date : 5/7/92 Place : Marani Thach Time : 9:00-9:21 a.m. Village of Origin of herb collector : Bhagchand Ishwar Das-Nohanda	Sch.No. : HT06 Date : 5/6/92 Place : Marani Thach Time : 8:30-8:48 a.m. Village of Origin of herb collector : Chet Ram, Sita Ram-Pekhri	Sch.No. : HT14 Date : 15/6/92 Place : Jhathali Time : 7:41-8:13 p.m. Village of Origin of herb collector : Tula Ram, Lal Singh, Lalchand Purohit, Dune Ram-Jhalani, Beli Ram-Kharongcha, Dhani Ram, Tek Ram-Dingcha	Sch.No. : Sainj01 Date : 5/7/92 Place : Maraur Time : 6:00-6:45 Village of Origin of herb collector : Bhaginath, Hemraj, Lagamchand, Harichand, Chunnilal-Nahi
Areas already visited or to be visited in Park on this trip	Shankha, Chumterao- 20-25 days, come to Kukhri only yesterday, make about 8-10 trips in a season	Marani Thach- 2 days spent, plan to spend about 1 month	Marani Thach- 1 month (leave tomorrow for home)	Jatholi- 6 days spent (Go back after 2) (Make (1) & (2) about 20 trips a season. The rest make about 4-5 trips.	Pirali and Kalikanda forests around Maraur for 6 days.
Any other purpose of this visit	None	None	None	None	None.
Quantity of herb in possession or to be collected	Dhup- 10-12 kg Nehani- 12 kg Karu- 13 kg	Dhup- 80 kg Mehndi- 100 kg	Dhup- 30 kg	Karu & Nehani- 7q approx (W)=about 3q.dry.	Glaeucda- 15-20kg(W), Shngli mingli- 15-20kg(W).
Economic - Turn over (1991)	Karu for Rs. 4500 Nehani for Rs. 3500 Guchi for Rs. 2000 Guchi(1992) for Rs. 2100	Dhup- 200 kg for Rs. 20 per kg	Dhup-40 kg(w) for Rs. 500 kg, they sold it to a person in the thach itself because they could not carry it	Karu, Nehani, Dhup, Galakhad, Patish, Panja for Rs.45,000. Guchi for Rs.40,000 and Guchi(1992) for Rs.45,000.	Karoo for Rs.500 (Rs.6000/quintal), Panja for Rs.2500 (Rs.250/kg), Patish for Rs.2500 (Rs.500/kg), Dhoop for Rs.4200 (Rs.1400/maund).
Costs incurred on herb collection in the previous season (1991)	None	None	None	Rs. 5000 approx (only by Tuli & Dhani).	Rs.250/trip (6 days) per head x 5 trips ??? season.
Markets to which the respondent supplied herbs	Gushaini (Lala Dwarka)	Gushaini (Lala Dwarka & Lala B.D. Sharma)	Not relevant	Gushaini (Lala Dwarka & B.D. Sharma).	Bali & Neuli.

HEAD	SCHEDULE #11	SCHEDULE #12	SCHEDULE #13	SCHEDULE #14	SCHEDULE #15
Area of herb collection - which locations they use to go to the Park(entry point)	Kharongcha	Entry via Dashmani	Entry via lagcha & Dashmani	Kharongcha.	via Shakti/Maraur. All over Sainj catchment upto Menda tapra.
Areas of herb collection- which places they use to go out of the Park (exit point)	Kharongcha	Entry via Dashmani	Exit via Lagcha & Dashmani	Kharongcha.	N.A.
Location - herbs extracted [Previous season (1991)]	Bargarha, Ghumterao, Shankha Pakhni, Tirth, Khol Thach-listed above	Dhela- Dhup	Marani- Dhup, can not go anywhere else because we are too young	Not asked.	Many areas in Kalikanda, Pirali and Humkani forests- Dhoop,Karoo, Hathpanja,Patish.
Since when has the respondent been involved in herb collection	Since he was a small boy	Past 7-8 years	Three years	Since they were little boys.	10-12 years.
Is the respondent rightholder for this area	Yes, recorded in Banjar (Om lala is our Negl), issued long ago, period of validity forever, the holder can go anywhere, go as often as he wants, collect anything, collect any amount.	No	No	Yes, they are recorded with Panchayat and Patwari, rights issued long time ago. validity forever. Holder can go anywhere in Tirthan & Dhela as often as he wants. They can collect any amount. Shingli,Mehndi & Rakhaal bannéd, but are collected even then. They can collect any amount.	Yes, they don't know where they are recorded perhaps with the Forest Department Office,Sainj. open ended validity. They can go upto Munda tapra in the park.
Has the respondent been stopped from-collecting herbs in a certain area	No	No	No	No.	No.
Collecting more than a certain quality of herbs	No	No	No	No.	No.
Collecting a certain herbs	No	No	No	No.	No.
Collecting herbs during a certain time of the year	No	No	No	No.	Yes, before Jaith and after Sauj.
Other restrictions	None	None	None	None.	None.

HEAD	SCHEDULE #11	SCHEDULE #12	SCHEDULE #13	SCHEDULE #14	SCHEDULE #15
Has checked by authorities for a right/permit while coming in to the Park	No	No	No	No.	Yes, at Maraur and sometimes Bah.
Has checked by authorities for the kind of herbs and the quantities he is carrying out of the Park	Yes, once in Kharongcha	No	No	Yes, several times.	Yes.
Other impacts of the Park	None	None	None	Crop damage has increased especially by bears and monkeys.	None.
Respondents annual activity cycle	March-May(Chait-Baisakh)- Preparation of fields and sowing corn + guchi May-June(Jaith)- Reaping barley & herbs collection June-July(Aashaad)- Reaping wheat & herbs collection July-August(Sawan)- Sowing rajma & corn and herbs collection Aug.-Sept.(Bhadon)- Preparation of fallow land & herbs collection Sept.-Oct.(Sauj)- Reaping rajma, corn etc. & herbs collection Oct-Nov.(Kartik)- Sowing wheat & barley & herbs Nov.-Dec.(Mankshar)- Collection of fuel & fodder Dec.-March(Poh-Phagun)- Snow, so no work	March-July(Chait-Aashaad)- Go to school July-Sept.(Aawan-Bhadon)- Collect herbs Sept.-March(Sauj-Phagun)- Go to school	March-April(Chait)- Snow so no work April-May(Baisakh)- Guchi May-July(Jaith-Aashaad)- Herbs July-August(Sawan)- Ploughing of fields and herbs collection August-Sept.(Bhadon)- Herbs collection Sept.-March(Sauj-Phagun)- No other work	Not asked.	March-May(Chait-Baisakh)- Agriculture. May-June(Jaith)- Crop harvest and herb collection. June-Sept.(Aashaad-Bhadon)- Agriculture and herb collection. Sept.-Octo.(Sauj)- Crop harvest and herb collection Oct.-March(Kartik-Phagun)- snow.
Respondents' income generating activities besides herb collection [Previous Season (1991)]	None	None	None	None. (Except some very negligible income from peas and potatoes).	None other than herb collection.

HEAD	SCHEDULE #11	SCHEDULE #12	SCHEDULE #13	SCHEDULE #14	SCHEDULE #15
Factors which determine/influence the duration of the herb collection season	Snow	Snow	Snow	Snow.	Weather : snowmelt, rain, sunny days.
Respondent's cash income comes from herb collection	100%	100%	100%	Almost 100%.	Almost 100%. Some also from wage labour whenever available.
Other resources used by the respondent in the Park	40 kg per day (Juniper)	20 kg per day	20 kg per day	2 quintal per day of fuelwood. Herbs. Herb collection also.	15-20kg/2-3 days for drying
Have any changes in the availability of resources used from the Park and since when	Fuelwood has become scarce due to overexploitation.	No change	No change	Fuelwood has become scarce due to overexploitation.	Fuelwood availability has decreased in last few years due to increased number of collector.
Are you aware of the existence of the national Park	Yes, 6 years ago Satprakash (MLA) told us	Yes, last year by work of month.	No	Yes, all their leaders and MLA's have talked about it since 'Shabab'.	Yes, 4-5 years. from local people.
Should national park have been notified in this area	Yes, as long as our livelihood is not affected	No, because our livelihood depends on it	No	Yes, this is because they hope they will benefit from it.	Yes, a form of development for the region.
Are you aware of the objectives with which this Park was set up	No	Yes, to protect flora & fauna	No	Yes, to protect animals. but they do not agree with it. Park should also look after humans	No. (Herb collection rights should not be curtailed. Panchayat gave NOC to suspend rights to local administration without consulting people.)
Any traditional practices for protection and promoting regeneration of herbs	Yes, Rotation of location	Rotation of areas	Not asked.	No.	None.
Are these methods still in practice? If not, why have they been terminated	Yes	Yes	Not asked.	Not relevant.	None.
Any attempts to artificially grow herbs	No	No	Not asked.	No.	No.

**HEAD**

What alternatives does the respondent think can be made available to herb collection as an income generation activity.

**SCHEDULE #11**

If a road is made upto the village, then we can make a living out of apples, peas etc.

**SCHEDULE #12**

If a road is made, then we can grow apples, peas, potatoes etc. commercially. However, this will not be sufficient to offset the loss of income due to stopping of herb collection.

**SCHEDULE #13**

Not asked.

**SCHEDULE #14**

If a road is made, then they can grow apples, peas, potatoes, rajma etc. commercially. Also all employment in the NP should be local. They also need schools for greater education. If tourism is promoted in this area, then also they will gain.

**SCHEDULE #15**

None that can give as much returns as herb collection. Govt. should decide what is best. Govt. service is most preferred.

# ADDITIONAL QUESTIONS ON HERB COLLECTION FOR GREAT HIMALAYAN NATIONAL PARK

## HEAD

## ADDITIONAL SCHEDULE #1

Sch.No.: Sainj01  
Date: 7/7/92  
Place of interview: Maraur  
Time: 6:30-7:15  
Village of Origin of herb collector:  
Khemraj,Khemiram,Shivdayal-Railah

## Herbs and their local use

Guchhi- No local use, whole plant plucked, upper pod sans stem used.  
Karoo- Used for stomach ailment, extracted by digging and uprooting, root used.  
Galakkada-None.  
Balchhar- Mixed with Dhoop for devta.  
Hathpanja-None.  
Patish- Used for stomach ailment.  
Dhoop- used for devta.  
Shingli mingli- None.  
Nihani-None  
Mehndi- women used for decor. Scraping off trees and rock. whole plant used.  
Safed maura- used for treating boils and wounds. Also used with tobacco to reduce impact on lungs- extracted by digging/uprooting. root used.  
Chuchi- Used for treating-boils and wounds.

## ADDITIONAL SCHEDULE #2

Sch.No.: Tirthan01  
Date: 11/7/92  
Place of interview: Nara  
Time: 11:50a.m.  
Village of Origin of herb collector: Dola Ram-Dhara  
Shilinga

Nehani- Used for treating upset stomach and for fever also. Extracted by digging.Root used.  
Karu- Used for Fever and chest congestion. Extracted by uprooting. Root used.  
Jao Patish- Used for upset stomach,boils. Extracted by digging. Root used.  
Guchi- Used for Boils and It is Edible. Extracted by digging. Mushroom used.  
Galakkada- Used for upset stomach & boils. Extracted by digging and roots are used.  
Hathpanja- Used for Boils and Burns. Extracted by Digging. Root used.  
Dhup- used for incense, extracted by digging,root used.  
Chunckhri- Used for Boils,extracted by digging, root used.  
Meethi Patish- Used for upset stomach and fever, extracted by digging, root used.  
Guggi Phool- Used for asthma and upset stomach, extracted by uprooting and digging. Root and flower used.  
Mahura- used for skin treatment, extracted by uprooting, root used.  
Denu- used for spice, extracted by uprooting, flowers used.  
Lalchuri- used for boils, extracted by digging, root used.  
Kuth- Livestock milk yield, extracted by digging, root used.  
Tandoora- used for Boils, extracted by digging, root used.  
Chaura- used for stomach ache and spice, extracted by digging, root used.

## HEAD

## ADDITIONAL SCHEDULE #1

## ADDITIONAL SCHEDULE #2

Ecological Status of herb

Guchhi- Status- A(Abundant),but dependent on weather conditions.  
Karoo- Status- R(Rare), status low on in recent years because of early extraction, no seeding.  
Galakkada- Status- A(Abundant), No change in status.  
Balchhar- Status- R(Rare). No change in status.  
Hathpanja- Status- A(Abundant). No change.  
Patish- Status- R(Rare). Low on in recent years because of early extraction, no seeding annual extraction, 3 years should be given for good root stock to develop.  
Shingli- Status- A/R. Low on in recent years because of ex-prize herb.  
Nihanu- Status- A/R. Low on in recent years because of over extraction, no seeding.  
Mehndi- Status- A. No change.

Nehani- Status- A(Abundant). No change in status.  
Karu- Status- A. no change in status  
Jao Patish- Status- R(Rare). Change in availability because of over extraction.  
Galakkada- Status- A. No change.  
Guchi- Status- A. No change.  
Hathpanja- Status-A. No change.  
Dhup- Status- A. No change.  
Chunkhri- Status-A. no change.  
Meethi Patish- Status- R. Change in availability because of over extraction.  
Guggi Phool- Status- A. No change.  
Mahura- Status- A. no change.  
Denu- Status- A. No change.  
Lalchuri-Status- A. no change.  
Nairu- Status-A. no change.  
Kuth- Status-R. no change  
Tandoora- Status-A. no change.  
Chaura- Status-A. no change.

Economic chain starting from the herb collector leading upto the final buyer known to respondent

Collector->shopkeepers in Bah,Nevli,Ropa,Sainj,Seund etc.->not known.

Lala in Gushaini buys from collector and sells to Lala Om in Banjar. Lala Om then sends the merchandise to various locations like Bhuntar, Amritsar, Palampur etc. Shri Alam Chand Pradhan of Tung Panchyat is also a big dealer.

How many people are currently engaged in herb collection? Changes in no. of herb collectors

2-2500 in the Sainj valley and increasing every year. Less than 500 people were there 10 years ago. Nepali settlers also doing herb collection.

Most people from Nohanda, Tung, and Sarchi Kothis are doing this in Tirthan. The number of people doing this has increased because of the following- (1) For the past 5 years, there has not been adequate rainfall so agricultural productivity has declined.(2) population has increased. (3) Demand for herbs has increased and prices have risen, so this is a very attractive activity for a poor man with no other resources.



HEAD	ADDITIONAL SCHEDULE #1	ADDITIONAL SCHEDULE #2
Any change in the area over which herbs are being extracted	Yes, anyone can go/is going, anywhere. New areas being opened up constantly. In the last 12-15 years have seen every potential area.	The areas where herbs are being extracted from have expanded because the number of people engaged in collection of herbs has increased, and there is a need to find new areas. Also people are taking more risks and going to increasingly inaccessible places to extract herbs.
Any change in the quantum of herbs being extracted and reason of this change	Yes, annually on the rise. Quality of herbs being found has deteriorated, overall availability is low. Primarily due to increase in number of collectors. Dhoop root was as thick as forearm 6-8 years ago from 4-5 years old plant. Today it is as thick as finger from 1 year old plant.	The quantum of herbs collected has also increased due to reasons listed above.
Since when has herb collection become a commercially viable activity and why?	Dhoop-14 years, Karoo- 16years, Patish-40 years, Glauoda-2-3 It has always been a commercially viable activity. years, Balchhar-20-25 years, Nihanu-40-45 years, Hathpanja-15 years, Mehndi-3-4 years, Guchhi-20-25 years because rates went up locally.	
How are people in Possession of rights (Individually family wise, or village wise)?	2-2500 rightholder come to the Sainj valley in season from village that were originally vested with rights. Each person makes upto 4 rounds per season.	There are no rights for herb collection.
When were these rights first given to people?	Pre-independence.	Not relevant.
How have these rights been transferred/ inherited?	Right was originally vested in village. Anyone from village qualifies as rightholder.	Not relevant.

## ANNEXURE 33: RESIDENT VILLAGES OF HERB COLLECTORS

(Source : Park Records for Gaijn Range 1989-90)

VILLAGE OF RESIDENCE	CHECKPOST
Bacheli	S
Bajahra	B/S
Bajaora	B
Balhayala	S
Banahi	B
Banaogi	B
Bashad	B
Bhadam	B
Bhader	B
Bhaidhar	B
Bhalan(?)	B
Bhuani	B
Bhuntar	B
Chahhi	B
Chaihan	B
Chaini	B
Chanadi	B
Chanahji	B
Chanaigi	B
Chanaihan	B
Chanaihi	B
Chanaihni	B
Daibheg	B
Dakar	B
Danahni	B
Dargedda	B
Darmeda	B/S
Dechra	B
Dehri	B
Dham	B
Dhanadi	B
Dhar	S
Dhari Dhar	B
Dingcha	K/S
Dirash	B
Gacha	B
Gailyan	M
Galingcha	M
Ghanidi	B
Ghatt	K
Gukari	B

VILLAGE OF RESIDENCE	CHECKPOST
Jangla	B
Jauli	B
Jhalleri	K
Jhaniyar	S
Kaitha	B
Kamadha	M
Kamora	M
Kangcha	K
Karshah (?)	B
Karshar seri ?	B
Karyah	B
Kashrah (?)	B
Kathangi	B
Katira	B
Khadagcha	B
Khadancha	B
Khadaoda	B
Khadoma (?)	B
Khajhora	B
Kharah (?)	B
Khardan	B
Khdangcha	B
Khrongcha	K
Lakcha	S
Lapah	B
Laplu Daur (?)	B
Madana	B
Madari	B
Mahai	S
Majahara	B
Malkashi	B
Malti	B
Manah	B
Manahra	B
Manara	S
Manashi	B
Maohdi	B
Mashiyar	?
Mephsi (?)	B
Metha	B
Nadoah	B
Nahi	B
Nahi (?)	B
Nakhli	B
Nalaseri	B
Natapari	B
Nayashi	B

# VILLAGE OF RESIDENCE      CHECKPOST

Niyuli	B/S
Pashi	B
Pekheri	S
Raihda	B
Railah	B/S
Rashaien	B
Rashdang (?)	B
Rashdangcha	B
Riada	B
Rilada	B
Ropa	B
Sarahan	B
Sarahan	B
Saran	S
Sari	B
Savesh	B
Seri	B
Shainshar	B
Shalah	B
Shalha	B
Shamshi	B
Shukari	B
Shukatri (?)	B
Shungcha	K
Soien	B
Soti	B
Suchehan	B
Suchehan	B
Sumashi	B
Suvaihn	B
Tevra	B
Tinder	K/S
Tung	B/S
Uasha	B
Umah	B
Vachaili	S
Vadach	B
Vadaya	B
Vagaida	B
Vanaih	B
Veri	B
Vijal	B
Vijal	B
Vupan	B
Sosh	S
Shosha	S

Key:    B=Bah  
           K=Kharongcha  
           M=Maraaur  
           S=Shakti

## ANNEXURE 34: FORESTS AND THACHES VISITED BY HERB COLLECTORS IN GREAT HIMALAYAN NP

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1. Parau/Chahen
2. Gehera
3. Kalikanda
4. Sharahagi
5. Kalikanda
6. Thanoye
7. Galu Thach
8. Sharyogi
9. Rakali
10. Ropa
11. Chaihan Gahr
12. Varhi Shahni
13. Rakti
14. Dhudhshaip (?)
15. Nayna
16. Rahla? =Railah?
17. Ghanaodi
18. Parli Nayna
19. Ghienghati
20. Chahan Gohan
21. Dudhu Ropa
22. Chaihan?
23. Maihan
24. Pula
25. Shakti
26. Shadogoli

[Source: Park checkpoint records]

## ANNEXURE 35: LOCATION OF VILLAGES AND HAMLETS IN THE ADJACENT AREA OF GREAT HIMALAYAN NP

[Source: SOI Toposheets]

VILLAGE/HAMLET	SOI MAP REFERENCE
Aisa	53 E/5 A2
Bagidhar	53 E/5 A3
Bah	53 E/5 A2
Bajahra	53 E/5 B3
Bajui Dogri	53 E/14 A2
Bakshahal	53 E/5 A3
Banagi	53 E/6 C2
Banaugi	53 E/5 B3
Baretha	53 E/5 B3
Baridhar	53 E/5 A3
Barsogi	53 E/5 A2
Bathad	53 E/6 C2
Bhadludwar	53 E/5 B3
Bhagi Kashahri	53 E/5 B3
Bhathar	53 E/5 B3
Bhatkanda	53 E/5 A3
Bhatrang	53 E/5 A2
Bhiali	53 E/5 A3
Birashangar	53 E/5 B3
Bradal	53 E/5 A2
Buhar	53 E/5 A1
Bupan	53 E/5 A3
Chamarda	53 E/5 B3
Chanaldha	53 E/1 C2
Chananidhar	53 E/5 A3
Chhakna	53 E/5 A1
Chharaon	53 E/5 A3
Chinairi	53 E/5 B3
Chinaldi	53 E/5 A1
Chipni	53 E/6 C2
Dalhiyar	53 E/5 A3
Damiari	53 E/5 B3
Daran	53 E/6 C1
Darmara	53 E/5 B3
Darn	53 E/5 A3
Deodhar	53 E/5 A3
Dergarh	53 E/5 A3
Dhagahra	53 E/5 B3
Dhalan	53 E/5 A2
Dhara	53 E/1 C2
Dhara	53 E/5 A2

VILLAGE/HAMLET	SOI MAP REFERENCE
Dhara	53 E/5 B3
Dhardli	53 E/5 B3
Dharla	53 E/5 A1
Dhartha	53 E/5 B3
Dhatidhar	53 E/5 A3
Didhei	53 E/5 A1
Dimajan	53 E/10 B2
Dingcha	53 E/6 C2
Farari	53 E/6 C2
Galingcha	53 E/10 A2
Gara Parli	53 E/6 C1
Garahan	53 E/5 B1
Gaul	53 E/5 B3
Ghat	53 E/5 A3
Ghat	53 E/6 C1
Ghatseri	53 E/5 A3
Goaluthana	53 E/5 A3
Gohi	53 E/5 A3
Goran	53 E/5 A3
Goshti	53 E/5 B3
Guhri	53 E/5 B3
Gushaini	53 E/6 C2
Huran	53 E/5 A1
Hurcha	53 E/5 A3
Huri	53 E/6 C1
Jagori	53 E/14 A2
Jahal	53 E/1 C2
Jangla	53 E/5 B3
Jathan	53 E/5 A3
Jauli	53 E/5 A3
Jeshta	53 E/5 A2
Jhuni	53 E/5 A2
Jiali	53 E/5 B3
Jiwa	53 E/5 A3
Kahna	53 E/5 B3
Kalga	53 E/5 C1
Kamath	53 E/5 A3
Kamera	53 E/10 A2
Kandi	53 E/10 A2
Kandi	53 E/5 A3
Kanon	53 E/6 B1
Karehla	53 E/5 B3
Kashora	53 E/5 A1
Kaudhar	53 E/5 A2
Kayuna	53 E/5 A2
Keloban	53 E/5 A3
Khain	53 E/5 B3

VILLAGE/HAMLET	SOI MAP REFERENCE
° Khainth	53 E/5 B3
Khani	53 E/5 A2
Khanyari	53 E/5 B3
Kharna	53 E/5 A2
Kharoha	53 E/5 A3
Kharongcha	53 E/6 C2
Khoruthach	53 E/5 B1
Khrangcha	53 E/5 A3
Khuna	53 E/5 A3
Koshta	53 E/5 A3
Kot Dogri	53 E/14 A2
Kothiari	53 E/5 A3
Kuin	53 E/5 A2
Kulthi	53 E/6 C2
Kurmi	53 E/10 C2
Kutwali	53 E/5 B3
Lagcha	53 E/6 C2
Laharda	53 E/6 B2
Lapah	53 E/5 B3
Madana	53 E/5 B3
Mahvani	53 E/6 C2
Mail	53 E/5 B3
Majharna	53 E/5 A3
Majhgran	53 E/5 A3
Manahra	53 E/5 B3
Manihar	53 E/5 A2
Manjaili	53 E/10 A2
Manjhan	53 E/5 B3
Mashiyar	53 E/10 A2
Mateora	53 E/5 A1
Mateora	53 E/5 A1
Mathkora	53 E/5 A3
Mili	53 E/5 B3
Mili	53 E/6 B2
Mobha	53 E/5 A3
Nadabar	53 E/6 C2
Nadahra	53 E/5 B3
Nadahra	53 E/6 B2
Nadohar	53 E/6 B1
Nah	53 E/6 B1
Nahin	53 E/6 C2
Najan	53 E/5 A2
Nanti	53 E/10 C2
Narwali	53 E/5 B3
Natseri	53 E/10 C2
Nevli	53 E/5 B3
Niharni	53 E/5 B3



VILLAGE/HAMLET	SOI MAP REFERENCE
Nunuribahli	53 E/5 B3
Pachari	53 E/5 B3
Paigi	53 E/5 A3
Pashi	53 E/5 A3
Patahra	53 E/5 B3
Pekhri	53 E/6 C2
Phagla	53 E/5 A3
Pingrang	53 E/5 A2
Pubna	53 E/5 B3
Puin	53 E/1 C2
Pukhri	53 E/5 A3
Pulga	53 E/5 C1
Punthal	53 E/5 A1
Railah	53 E/5 A3
Rakshukhlu	53 E/5 A3
Riari	53 E/5 B3
Ropa	53 E/5 B3
Ruar	53 E/1 C2
Runan	53 E/5 A3
Rupaih	53 E/5 A3
Sajahra	53 E/5 A3
Salga	53 E/5 A3
Sambha	53 E/5 B3
Sambha	53 E/5 B3
Sambha	53 E/5 B3
Sari	53 E/5 A3
Saryari	53 E/5 B3
Satesh	53 E/5 B3
Shaindhar	53 E/5 A3
Shalag	53 E/5 A1
Shalah	53 E/5 A3
Shalinga	53 E/6 C2
Shamkor Dogri	53 E/14 A2
Shanar	53 E/6 B1
Shangarh	53 E/5 B3
Shansher	53 E/5 B3
Sharan	53 E/5 A3
Sharan	53 E/5 A3
Sharaniber	53 E/5 A1
Sharoh	53 E/5 A3
Shetitol	53 E/5 A3
Shigaira	53 E/5 B3
Shikari	53 E/5 A3
Shikari	53 E/5 B3
Shirachi	53 E/6 B1
Shulga	53 E/5 A3
Shungcha	53 E/6 C1

VILLAGE/HAMLET	SOI MAP REFERENCE
Sir	53 E/5 B3
Sirikot	53 E/6 C1
Sis	53 E/5 A2
Socha	53 E/5 A3
Sodhan	53 E/5 A2
Sohan	53 E/5 B3
Sphurang Dogri	53 E/14 A2
Suchen	53 E/5 B3
Tatardi	53 E/5 A1
Telehra	53 E/5 B3
Thachan	53 E/5 B3
Thagwacha	53 E/5 A3
Thanach	53 E/6 B1
Thanegad	53 E/10 B2
Thanegad	53 E/6 C2
Thari	53 E/6 C2
Thela	53 E/5 A2
Thonjah	53 E/5 B1
Tikar	53 E/10 C2
Tindar	53 E/6 C2
Tulga	53 E/5 C1
Tung	53 E/5 B3
Ursu	53 E/5 A2
Ushag	53 E/5 A2

**ANNEXURE 36: THE SETTLEMENT OFFICERS ASSESSMENT OF  
THE NUMBER OF FAMILIES TO BE  
COMPENSATED IN SHAKTI AND MARAUR**

**LIST OF EXCHANGE OF LAND CASES IN RESPECT OF LAND BEING ACQUIRED  
FOR THE GREAT HIMALAYAN NATIONAL PARK**

Sr. NO.	Name and address of the landowner	Total holding (in bighas)	Area of land given in exchange. (in bighas)
<b>TEHSIL BANJAR</b>			
1.	Shri Chainy s/o Shri Tulu of Phati Garaparli	13-6-0	13-0-6
2.	Shri Moth Ram s/o Bhaget Ram Phati	85-14-0	85-14-0
3.	Shrimati Khim Dassi d/o Larju and w/o Kalu of Phati Garaparli	16-16-0	16-16-0
4.	Smt. Rami d/o Kalu of Phati Garaparli	8-8-0	8-8-0
5.	Shri Jawa Ram s/o Mansa of Phati Garaparli	19-6-0	19-6-0
6.	Shri Kadahi Ram s/o Nigam of Phati Garaparli	39-19-0	39-13-0
7.	Sh. Man Chand s/ Gumat Ram of Phati Garaparli	2-13-0	2-13-0
8.	Smt. Bali d/o Gunat Ram of Phati Garaparli	7-2-0	7-2-0
9.	Smt. Lali d/o Gumat Ram -do-	12-9-0	12-9-0
10.	Smt. Ablu -do-	12-11-0	12-12-0
11.	Smt. Shadi wd/o Gumat Ram -do-	62-9-0	62-9-0
12.	Smt. Shiri d/o Budh Ram of Phati Garaparli	12-9-0	12-9-0
13.	Budh Ram s/o Bhagat Ram of Pathi Garaparli	6-3-0	6-3-0
14.	Shri Ram Saran etc. s/o Budh Ram of Pathi Garaparli	0-13-0	0-13-0
15.	Shri Tejram s/o Bhagat Ram of Garaparli	13-5-0	13-5-0
16.	Shri Lotram s/o -do-	13-2-0	13-2-0
17.	Shri Surat Ram s/o -do-	2-5-0	2-5-0
18.	Shri Sherh Singh s/o Suratram of Phati Garaparli	3-10-0	3-10-0
19.	Shri Kanahiram s/o Beliram of Phati Garaparli	65-15-0	65-15-0
	<b>TOTAL</b>	<b>397-9-0</b>	<b>397-10-0</b>
20.	Smt. Laju w/o of Chamaru of Phati Garaparli	28-12-0	28-12-0

Sr. NO.	Name and address of the landowner	Total holding (in bighas)	Area of land given in exchange. (in bighas)
21.	Shri Belu s/o of Laju -do-	16-1-0	16-1-0
22.	Smt. Poshi d/o of Lacchiram of Phati Garaparli	1-18-0	1-18-0
23.	Shri Shaulu and Smt. Begam Bhagi s/o Smt. Dil Baru d/o Lacchiram of Phati Garaparli	4-1-0	4-1-0
24.	Shri Pritu Devi Rma s/o and Smt. Dashmu d/o Biuli of Phati Garaparli	4-1-0	4-1-0
25.	Smt. Kudi d/o Lacchiram of Phati Garaparli	4-0-0	4-0-0
26.	Shri Dayaram s/o Parlu of Phati Garaparli	68-11-0	68-11-0
29.	Smt. Ramkali w/o Beliram of Phati Garaparli	16-15-0	16-15-0
30.	Smt. Dhalu wd/o Dalu of Phati Garaparli	4-13-0	4-13-0
31.	Shri S.E.s Ram s/o Uttam Ram of Phati Garaparli	18-13-0	18-13-0
32.	Devta Bith of Phati Garaparli	13-6-0	13-6-0
33.	Deta Chumbal of Phati Garaparli	0-17-0	0-17-0
34.	Panchayat Garaparli	7-2-0	7-3-0
35.	Phati Abadi Phati Garaparli	15-1-0	15-1-0
	TOTAL	203-11-0	203-12-0
	NON RESIDING LAND OWNERS TO BE COMPENSATED		
1.	Shri Naina of Phati Garaparli	2-9-0	2-9-0
2.	Shri Khan Chand etc. of Phati Garaparli	11-17-0	11-17-0
3.	Shri Fatha Chand s/o Jhoppha of Phati Shansher	3-10-0	3-10-0
4.	Shri Chunnilal s/o Khanchand of Phati Garaparli	0-18-0	0-18-0
5.	Shri Tholuram s/o Chalti of Phati Succhan	10-8-0	10-10-0
6.	Shri Bir Singh s/o of Tholu -do-	1-0-0	1-0-0
7.	Shri Khan Chand s/o Kadsh Phati Shansher	13-6-0	13-6-0
8.	Shri Omprakash s/o Magandas of Phati Dhaugi	2-19-0	2-19-0
9.	Shri Thakar Datt s/o Hariram of Phati Shansher	0-6-0	0-6-0
10.	Shri Kishen Singh of Phati Shansher	2-3-0	2-3-0
11.	Smt. Chitra w/o Jassiram of Phati Shansher	2-0-0	2-0-0
12.	Shri Jassiram s/o Besram of Phati	2-18-0	2-18-0

Sr. NO.	Name and address of the landowner	Total holding (in bighas)	Area of land given in exchange. (in bighas)
12.	Shri Jassiram s/o Besram of Phati Garaparli	2-18-0	2-18-0
13.	Shri Daberam-Hiru-Thikuru etc. of Phati Shansher	0-3-0	0-3-0
14.	Shri Thakerdas s/o Laganchand Phati Garaparli	0-1-0	0-1-0
15.	Smt. Dharmi Bashki of Phati Garaparli	6-12-0	6-12-0
16.	Shri Lalchand Sesram of Phati Garaparli	1-10-0	1-10-0
17.	Shri Nandram s/o Jhalli of Phati Deshad	1-8-0	1-8-0
18.	Shri Hirachand s/o Nandu of -do-	1-10-0	1-10-0
19.	Shri Madhuraj Singh etc. Phati Shanghor	51-17-0	51-16-0
20.	Tadi Singh s/o Tikramram of Phati Kotla	0-3-0	0-3-0
21.	Shri Fatoh Chand s/o Tarachand of Dashad	0-19-0	0-19-0
22.	Shri Shukaru s/o Bukamu of Phati Dashad	1-0-0	1-0-0
23.	Shri Shukari wd/o Bhangru of Phati Shansher	0-18-0	0-18-0
24.	Shri Laganchand etc. of Phati Shansher	8-5-0	8-5-0
25.	Shri Laganchand s/o Nandram etc. -do- Phati Succhan	20-11-0	20-13-0
26.	Shri Chetru s/o Bihu of Phati Garaparli	2-5-0	2-3-0
27.	Shri Teju s/o Nhanu of -do-	3-10-0	3-10-0
28.	Smt. Maya dasi wd/o of Jindu of Phati Garaparli	15-1-0	15-1-0
29.	Shri Napu s/o Bholu of Phati Lapah	1-11-0	1-11-0
30.	Shri Hari chand s/o Harfu -do-	3-1-0	3-1-0
31.	Smt. Maghi d/o Ram Diyal of Phati Succhan	2-10-0	2-10-0
32.	Sh. Man Dass s/o Ram Diyal -do-	0-9-0	0-9-0
	TOTAL	130-19-0	130-9-0
	<b>TEHSIL KULLU</b>		
1.	Sh. Kadshi Ram s/o Ude Ram of Phati Raila	6-15-0	6-15-0
2.	Sh. Chande Ram s/o Paras Ram of Phati Raila	7-6-0	7-6-0
3.	Sh. Ude Ram s/o Parsu -do-	7-6-0	7-6-0
4.	Sh. Bhagata s/o Khinmu - do-	0-13-0	0-14-0
5.	Sh. Moti Ram s/o Ude -do-	0-13-0	0-16-0

Sr. NO.	Name and address of the landowner	Total holding (in bighas)	Area of land given in exchange. (in bighas)
8.	Shri Narotram s/o Smt. Man Dassi -do-	2-18-0	3-0-0
9.	Shri Dinu Alais Diho Ram s/o Hari Ram of Phati Raila	14-0-0	14-2-0
10.	Shri Khimi Ram s/o Dine Ram -do-	4-7-0	4-7-0
11.	Shri Kuram Ram s/o Dine Ram -do-	4-8-0	4-9-0
12.	Shri Nand Ram s/o -do-	4-7-0	4-7-0
13.	Shri Dharam Chand s/o Nasru etc. of Phati Raila	0-2-3	0-4-0
14.	Shri Chande Ram s/o Dharam Chand of Phati Raila	2-10-0	2-11-0
15.	Shri Hariram s/o Dharam Chand -do-	2-10-0	2-10-0
16.	Shri Kuramram s/o Doluram -do-	9-0-0	8-19-0
17.	Shri Doharu Ram s/o Udairam -do-	1-3-0	1-5-0
18.	Shri Jairam s/o -do-	1-3-0	1-4-0
19.	Shri Balaram s/o Jhadi -do-	14-16-7	14-16-0
20.	Shri Ravtiram-Hetram ds/o Doleram -do-	1-3-0	1-5-0
21.	Shri Sangat Ram s/o Bukami Ram -do-	5-1-0	5-0-0
22.	Shri Jhaoeram s/o Sesu -do-	4-17-0	5-0-0
23.	Shri Liladhar s/o Daulatram of Phati Raila	9-4-0	9-5-0
24.	Devtesudar Nagian of Phati Raila	0-18-0	2-5-0
25.	Shri Dinu s/o Alihi of Phati Raila	9-4-0	9-4-6
26.	Shri Saulu s/o Alihi -do-	7-3-0	7-5-0
27.	Smt. Parwat s/o Chaina -do-	0-1-0	0-1-0
28.	Shri Suratram s/o Atu -do-	2-4-0	2-6-0
	GRANT TOTAL	909-11-0	913-11-13

SD/-

Additional District Magistrate

Kullu (H.P.)

# ANNEXURE 37: WILDLIFE RANGES, FORESTS AND KOTHIS IN GREAT HIMALAYAN NP

(Source: Park Authorities map/FV2, mp)

WILDLIFE RANGE	FOREST	RESERVE/PROTECTED FOREST	KOTHI
Jiwa Nal	Gatipat	RF	Bhalan
Jiwa Nal	Droshar	PF	Bhalan
Jiwa Nal	Khande Dhar	PF	Bhalan
Jiwa Nal	Deun	RF	Shainsar
Jiwa Nal	Paniharu	PF	Shainsar
Sainj	Kali Kanda	PF	Shainsar
Sainj	Parali	PF	Shainsar
Sainj	Humkani	RF	Shangarh
Sainj	Kamba	PF	Shangarh
Tirthan	Rakhundi	PF	Nohanda
Tirthan	Rolla	PF	Nohanda
Tirthan	Basu	PF	Nohanda

## **ANNEXURE 38: FOREST BLOCKS AND BEATS IN EACH WILDLIFE RANGE IN GREAT HIMALAYAN NP**

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### **Jiwa Nal Wildlife Range**

<b>Blocks</b>	<b>Beats</b>
1. Kundar	a) Gati b) Biradhar c) Khande Dhar
2. Deun	a) Kandi b) Paniharu

### **Sainj Wildlife Range**

1. Maraur	a) Shakti b) Maraur c) Parkachi
2. Dhela	a) Humkhani b) Kamba

### **Tirthan Wildlife Range**

1. Rolla	a) Gumtarao b) Chalocha
2. Tirth	a) Basu b) Bhandar



**ANNEXURE 39: FOREST DEPARTMENT ACCOMODATION  
AVAILABLE IN AND AROUND GREAT HIMALAYAN  
NATIONAL PARK**

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Accomodation	Location (Valley)	Total number of sets	Is it open to non- officials
Inspection hut, Maraur	Sainj	One set	YES
Inspection hut, Rolla	Tirthan	One set	YES
Inspection hut, Khrongcha	Tirthan	One set	YES
Inspection hut, Lapah	Sainj (outskirts)	One set	YES
Patrolling hut, Dhela	Sainj	One set	NO
Patrolling hut, Parkachi	Sainj	One set	NO
Patrolling hut, Gatipat	Jiwa Nal	One set	NO
Patrolling hut, Subli	Jiwa Nal?	One set	NO
Patrolling hut, Chalocha	Tirthan	One set	NO
Patrolling hut, Nara	Tirthan	One set	NO

## ANNEXURE 40: LIST OF LOCAL TERMS

LOCAL TERMS	DESCRIPTION
Baja	Dried "Panakkhad" (type of grass)
Bakri	Tahr ?
Basla	Spice ("heeng") - asafoetida
Battoore	Puffy round wheat rotis (eaten in Railah)
Betdi	Woman/women
Chappa	Kestrel
Chakki	Water mill
Challi	Corn
Chanka	Store house for gress/fodder ?
Churi	Root
Dhohad	Blanket
Dhach	Sickle
Drad	Sickle
Gahri	Bamboo - used to make baskets ("kiltas")
Ghorad	Goral
Gottu	Ibex ?
Gotiah	Spice (Manjhan)
Gurahu	Honey bee
Jagamadamrishi	Devta of Pashi Village
Hath Karga	Weaving loom
Hath kalu	Weaving loom
lthra	Spice (Manjhan)
Kanga	Loom
Kannak	Wheat
Khadi	Weaving loom?
Karth	Male goat/Tahr?
Karaddi	Female Monal
Kilni	Hoe
Kilta	Conical, tapering basket for carrying corn, apples, etc. ("tokri")
Kulhadu	Axe
Khand(va)	Rock sugar
Loon	Rock salt
Mandra/Mandru	Woven grass mat made from "Shaddoli" grass
Mard	Man/Men
Narel	Hookah
Pannakkhad	Type of grass, preferred fodder sp.
Patti	Woven woolen coat for men
Pattu	Woven woolen blanket worn like pinafore by women
Samale	Spice (Manjhan)
Shaddoli	Type of grass, used for weaving mats
Shayil	Porcupine
Shela	Thick woven goat hair blanket/rug

**LOCAL TERMS****DESCRIPTION**

Shoru bhang	Wild Cannabis
Sunnunarain	Devta of Manjhan Village
Tambaku	Tobacco
Tapra	Small stone structure/shelter found on many thaches, used by graziers
Toll	Family
Tumka	Crop protection device - 2 large tins strung up on rope over field
Vaasala	Type of spice (Manjhan)

**ANNEXURE 41: LIST OF COPIES OF OFFICIAL DOCUMENTS ON  
GREAT HIMALAYAN NATIONAL PARK  
(LETTERS, ETC.)**

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1. Letter from Tehsildar Banjhar to ADM, Kullu, dt. 6.4.89, with petition representation') of villagers of Shakti and Maraur regarding relocation, submitted to the Tehsildar Banjhar on his visit to the Park, dt. (in Hindi).
2. Letter from ADM, Kullu to the Secretary (Forests), H.P., dt. 21.4.89, regarding settlement of rights.
3. Letter from V.P. Mohan, CCCF (P & D), to S.S. Sidhu, Commissioner cum Secretary (Forests), dt. 15.5.89 (D.O. letter no. ft.wl.123/87) regarding settlement of rights. In response to letter from Secretary (Forests), (letter no. 6-16/73-SF-III, dt. 2.5.89)
4. 2 photocopied pages of rights in the Inner Seraj Reserved Forests. Not fully comprehensible. Pages numbered 83, 85. Perhaps one page missing.
5. List of forest areas (ha) and class of forest within each forest division and range contained in the Park.
6. Letter from Pradeep Monga (? Dt. Admin.?) to S.S. Sidhu (Secy., Forests), dt. 23.7.88, asking for State Govt. approval for resettling Park villagers.
7. Letter from Dy. Commissioner, Kullu, to CWLW, H.P., dt. 28.2.87, regarding value of land to be acquired from within the Park?
8. Letter from CWLW, H.P. to CCF (P & D), H.P. (No: 756-16/69(M)/Dept. of Forests, Farming and Conservation, H.P., dt. 15.6.89).
9. List of "Exchange of Land Cases in Respect of Land Being Acquired for the Great Himalayan National Park", prepared by the ADM, Kullu. Includes names and addresses of land owners, total area of land holding, and area of land to be given in exchange. All are in Banjhar or Kullu Tehsils. 33 resident and 32 absentee landowners in Banjhar T. and 28 resident landowners in Kullu T.
10. Internal Forest Dept. note? Details of land to be acquired within Park and outside for resettlement (in Hindi).

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- AVS - Abbreviated Village Schedule
- DCH - District Census Handbook
- FSI - Forest Survey of India
- FV1 - Field Visit 1 (August 1989)
- FV2 - Field Visit 2 (September-November 1991)
- FV'94 - Field Visit 1994 (June-July 1994)
- HCS - Herb Collectors' Schedule
- HHS - Household Schedule
- MG - Migratory Graziers
- MGS - Migratory Graziers' Schedule
- mp - Management Plan
- QA - Questionnaire completed by field visitors for Himachal Pradesh Directory (May 1985)
- Q.A1 - Questionnaire A completed with PD P.P. Madan during FV1
- MQ.A2 - Questionnaire A completed by RO Sharma and RO Negi during FV2
- QQ - Queries Questionnaire completed by RO Sharma and RO Negi during FV2
- tp - Survey of India toposheets
- VS - Village Schedule
- FV - Field Visit



