

Social Monitoring of Conservation of  
Biodiversity Project in GHNP

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## GHNP - COB PROJECT : A MONITORING PROPOSAL

### 1. BACKGROUND

The integration of conservation with rural development is the latest proposed means of preventing loss of the earth's biodiversity and of solving the dilemma of *"People versus Parks"*. Now-a-days, the need to preserve natural resources and biodiversity in concert with improving human well being is well recognised. Likewise conservation agencies acknowledge that parks can not be protected over the long term without the consent and support of local inhabitants. Keeping these basic principles in mind conservation of biodiversity project with an ecodevelopment component was initiated in GHNP in 1994. Under this project the department has been taking up several activities in and around GHNP in order to:

- i) **Increase resource productivity in areas peripheral to the park;**
- ii) **Reduce dependence through development of alternatives by provision of non-forest based employment, income generation schemes, improved agriculture etc.**

The basic strategy or mode of development activities is ecodevelopment which revolves around the involvement of village communities in the preparation and implementation of micro-planes using participatory techniques. For this purpose, a five km area around the western boundary of the park is being declared as an ecodevelopment project area. It covers 12 revenue villages, each comprised of several hamlets of 5 to 20 households on an average. For the purpose of participatory planning and implementation, the whole ecodevelopment area has been divided into nearly 15 units (usually one revenue village has been considered one ecodevelopment unit with slight modifications) and village ecodevelopment Committees (VDC) have been constituted in almost all the units.

Since 1994 a number of activities aimed at institution building, improving park management, increasing on farm and off farm employment opportunities and enhancing natural resource base have been taken up and substantial resources have been invested (see project map). There is a vital need for ecological and social monitoring of the CoB project in order to assess whether the project activities have had the desired articulated impacts or not and to provide guidelines for project adjustment in the light of results such as identifying the possible social consequences of project activities and alternative course of action on stake holders etc. Monitoring is also very important in order to evolve a mechanism whereby negative impacts of COB project can be studied particularly during the project period so that required adjustments can be made.



Considering this important role of monitoring, attempts are being made to design appropriate monitoring programme for the COB project. Three years of research conducted on various parameters has yield valuable information which can be used as baseline to do subsequent monitoring. This proposal is an attempt in this direction which is particularly aimed at social monitoring. The following framework is proposed for monitoring the conservation of biodiversity project in Great Himalayan National Park and Tirthan and Sainj Wildlife Sanctuaries including ecodevelopment project area. It is being designed keeping in view the logical frame work approach of project monitoring.

## **2. PROJECT LOGICAL FRAMEWORK**

### **The vertical logic**

The CoB project with a definite goal of biodiversity conservation envisages to do the same by having distinct objectives. The twin objectives of ecodevelopment ' remain ; reduction of people's dependency on park resources (mushroom, herbs and grazing) and improving dependent communities / people's socio-economic conditions by providing alternate income generation programmes and building in sustainable harvesting regimes. The project also has an objective of improved park management. Seen in totality the objectives are supposed to lead to realisation of project goal.

Definite results or outputs would be required to get to the objectives. A list of outputs has been shown in the project map seemingly contributing to the objective.

The next level pertains to the project activities. The envisaged outputs can not come through without a set of activities and matching budgetary inputs.

### **The Project Map**

The vertical logic therefore relies on If – Then causality. If activity the output; If output the objective and if objective the goal. If external condition or assumption that will operate at different level (if activity - output; output - objective; objective - goal) come true then realisation of project result come true.

### **The horizontal logic**

The project monitoring therefore needs to be taken up both at output level as well as objective level. Criteria or indicators of monitoring, the methods, frequency and responsibility of data collection to verify the indicators form the horizontal logic in the framework. The logical frame work (horizontal logic) details out the indicators, methods and also indicates whether the baseline information against the indicators has been obtained by early research studies. Further discussion in the horizontal logic is built in the following sections.



## Criteria for Monitoring

- a. Monitoring is to be done on objective and outputs levels only. In the case of inputs, a feasibility analysis of activities is proposed to be carried out while monitoring at goal level shall form part of the overall biological monitoring.
- b. Outputs to be taken up for monitoring shall be prioritized based on investments/inputs in different sectors as well as linkages with the biodiversity conservation. It shall be done after consultation with Park Management and local institution.
- c. Prioritization of villages/eco units and other areas for taking up monitoring is to be done on the basis of level of dependency and investments.















## INPUTS

S.No.	ACTIVITY	BUDGET
1	PUBLIC AWARENESS	
a	Public meetings	
b	Distribution of literature, painting/singing completions, street plays etc.	
c	Exhibitions in various fairs, festivals etc.	
d	Tours	
e	Workshops/Seminars	
2	CONFIDENCE AND TRUST BUILDING	
a	Compensation for damage by wildlife	
b	Repair of bridle paths, water sources, temples, stone soling etc.	
c	Construction of water tanks	
d	Construction of rain shelters/other public utility services	
3	INSTITUTION BUILDING ACTIVITY	
a	Establishment of ecodevelopment committee	
b	Capacity building of staff and stake holders; training of staff and stake holders and infrastructure/purchase of equipments etc.	
c	Inter-agency (Inter-stake holder) activities	
4	ON FARM ACTIVITIES	
a	Distribution of improved seeds of various grains and vegetables	
b	Distribution of improved seedlings of various fruit species particularly apple	
c	Distribution of pesticides/subsidised fertilizers	
d	Compost pits	
e	Artificial insemination among cows/sheep and goat	



F	Immunization of livestock/cattle against diseases	
G	Distribution of veterinary medicines	
h	Loan scheme for purchase of high breed cows/livestock	
i	Expert counselling to farmers for better agriculture, horticulture and livestock management/production through seminars/workshops	
j	Study tours/training etc.	
5	OFF FARM ACTIVITIES	
a	Direct income generation activities	
i	Training to unemployed in household industry such as weaving/bee keeping etc.	
ii	Scheme of subsidized loan for infrastructure and raw material	
iii	Creation of more jobs/employment activities in civil works/management of forest/park	
b	Transportation and communication improvement activities (infrastructure building/civil works)	
i	Construction of two jeep roads	
ii	Mule paths, repair of bridges/old village routes	
iii	Inspection huts, rest houses etc.	
iv	Information centre	
v	Check dams, bridges	
6	FOREST RESOURCE ENHANCEMENT ACTIVITIES	
a	Planation of fuelwood, fodder and timber species	
b	Distribution of fuel saving devices such as solar cooker, improved hearth ( <u>Chulah</u> ) and ordinary cooker etc.	
c	Distribution of timber saving devices such as steel containers for storing agricultural produce etc.	
d	Distribution of fodder saving devices such as construction of feeding stalls.	



E	Closure/fencing of certain areas for better regeneration	
7	MANAGEMENT	
a	Wildlife improvement activities	
b	Habitat improvement activities	

### 3. PROJECT MONITORING : INDICATORS , METHODS & AVAILABILITY OF BASELINE INFORMATION

#### 3.1 Objective 1 - Reducing major dependencies from GHNP

The most important aspect to be monitored is the effect of project activities on the resource use from inside the park because reducing major dependencies from park resources is the primary objective of conservation of biodiversity project. Collection of mushroom, various medicinal plants and grazing livestock in the summer months constitute the major dependencies on park. In order to access whether project intervention have led to any significance decrease in these pressures and if yes to what extent, the following three indicators are to be taken into consideration ;

- Change in the volume / weight of produce in respect of each medicinal plants and mushroom collection.
- Change in the total numbers of Collectors right holders as well as outsiders in each of the villages / hemlets and in each of the forest / collecting sites forming part of GHNP / WLS.
- Change in the number of livestock both local as well as migratory going for grazing and period of their stay in each of the forests / grazing sites forming part of GHNP.

#### Measuring the indicators : The Methods

##### a. *Measuring change in pressure of mushroom & herb collection*

Although more than 250 ethnobotanically important plant species have been identified from the park out of which 60 species of medicinal value, most people collect only a few plant for earning cash income by selling them. Therefore it is proposed to monitor those important medicinal plants which are of vary high commercial value. These include apart from mushroom; Dhoop, Karu ; Patish ; Hath panja; Nahani (higher altitude plants > 3300 m), Chora ; Nahru ; Banfsha ; Bansanti ; and Mehandi (lower altitude plants < 3300 m). The following methods are suggested for monitoring these species ;

##### i) General household survey

Baseline data collected through a random survey of hundred households in 1997 in the Tirthan area of ecodevelopment zone pertaining to quantities of various species collected by household is available (Annexure 1). Therefore a general household survey conducted every year in respect of quantities of various medicinal plants and mushroom collected by the household shall show the change in the quantities collected over time.





ii) Verification

Baseline data in respect of number of collectors in various villages of ecodevelopment area is available (Annexure 2). These villages can be visited every year and change in the total number of collectors can be ascertained by discussing with key persons of the village.

iii) Transects and Experimental plots

A number of transects and experimental plots has been set up in the field both inside the park as well as in ecodevelopment area for monitoring various medicinal plants and mushroom. Some of these plots can be selected for monitoring the change in their status (rate of regeneration etc.). For details on these transects and experimental plots please refer to report on vegetation monitoring.

iv) Checkpoint and Export permits

Park management has set up checkpoint on most of the entry points of the park and they are supposed to enter in the register, the number of collectors, name of the villages to which they belong and quantities of medicinal plants collected by them. Comparing this data for various years shall also give an idea of the change in the number of collectors as well as quantities of herbs collected by them. In addition all the dealer are required to obtain permit from forest department for exporting the medicinal plant after depositing necessary fees. A survey / study of the number of permits (quantities are recorded in the permit) issued by the department each year shall reveal the change in the quantities of various species exported over time.

iv) Resource use mapping in respect of various areas and legal rights

Resource use right In GHNP are recorded in the settlement report of Kullu forests. The names of the villages / hamlets having rights of medicinal plant collection in each forest forming part of GHNP are available (Annexure 3). However it has been seen that these are not strictly followed and a number of non right holders also go inside the park for collecting medicinal plants. In addition a number of right holder go for their collection in areas where they don't have right. Therefore resource use mapping in respect of various forest s / area of GHNP *vis-viz.* different hamlets / villages done periodically shall reveal the change in these parameters over time.



b) *Measuring change in grazing intensity*

Monitoring of grazing intensity in respect of number of livestock going inside the park as well as period of their stay at various forests / *thaches* of GHNP should be done. In addition monitoring of change in the average number of livestock per house hold in ecodevelopment project area deserve to be under taken. The following methods shall be adopted for estimating change in the pressure of live stock grazing.

i) Counting of livestock Grazing in the Park

Baseline data on the number of livestock both local as well as migratory is available along with their timings and points of entry in the park . Therefore for subsequent monitoring livestock going in the park should be counted and their number compared with baseline data. These can be counted either at the entry points or alternatively at the *thaches* (camping sites).

ii) Assess the change in the average number of livestock in the ecodevelopment area

Data / information is available on the average number of livestock held by the household in the Tirthan area of ecodevelopment zone. This can be used as baseline for subsequent monitoring. Current data / information on the average number of livestock held by the households is to be gathered through a random survey of households or by discussing with key persons and VDCs. Comparing the subsequent data with the baseline shall demonstrate the change in the average number of livestock in the ecodevelopment area.

Monitoring on these aspects is to be conducted every year by the VDCs.







## ANNEXURE - III

### Collection of Medicinal Plants

Name of Herbs	1	2	3	4	5	6	7	8	9
Quantities Collected  1996  1997  1998									

### 3.2 Objective 2 - Improved quality of life (Increased cash incomes of dependent households)

There might be a number of indicators for monitoring the improvements in the human well being in the project area. However at the objective level only enhancement in the cash incomes of households have been taken into consideration for monitoring mainly because of the following two reasons;

- i) The most significant pressure on GHNP and adjoining WLs i.e collection of mushroom and medicinal plants is directly related to the cash incomes of the households. While most of the other economic activities work only on subsistence level, it the collection and selling of medicinal plants and mushroom which brought the households considerable cash incomes. Therefore it is the necessity of the cash incomes which derive the household to undertake such tedious work in the absence of other cash generating avenues. The project visualises that by increasing cash incomes of households from alternative economic activities, pressure on GHNP can be reduced to a large extent.
- ii) some of the important indicators related to the improvement of human well being, are taken as the indicators of certain outputs such as 4, 6 and 7 etc. It is therefore also to avoid duplicity of the information that only cash income has been selected as indicators for monitoring improved human well being at the objective level.

In this section therefore it is proposed to monitor the increase in the net cash incomes of the households.

## METHODS

In order to assess the change in the total cash incomes of the household in ecodevelopment area, a random household survey is to be conducted wherein households can be simply asked about their total cash incomes of current year and also the change (increase./decrease) in it over the past 2/3 years. Cash incomes can also be calculated by asking the households about the quantities of various medicinal plants they collected and sold and incomes can be calculated by computing the rates and quantities collected. Further they shall be asked the quantities of agricultural and horticultural products sold by them and incomes computed. Adding the incomes so derived with incomes earned by other sources such as weaving, labour work, service, or other household industry shall give a fair idea of total cash incomes earned by them in a n year. Alternatively only those households can be surveyed whom the management or local institution has provided some sort of help. Their list shall be obtained from the concerned agencies and change in the income caused by project interventions ascertained through a survey / discussions.



Comparing the current information / data with the baseline data described below shall demonstrate change in the cash incomes of households over time.

### **Available Baseline information**

Data on average net cash incomes of the house holds collected through a random survey of 100 households in the ecodevelopment area is available. Initially this can be used as baseline. Subsequently all data collected for monitoring of incomes shall become baseline information for the coming year.

Monitoring of change in cash incomes of the households should be done every year by the VDCs since it is annual cash incomes which are to be monitored.







## ANNEXURE - I

### Total cash income of households

Name of the households

Village

Year	Income from sale of medicinal plants	Income from sale of agriculture products	Income from other sources	Total cash income in a year
1995				
1996				
1997				
1998				

### 3.3 Monitoring of output 1. Functional local institution in place

As mentioned in the beginning of this proposal the basic strategy or mode of developmental activities is Ecodevelopment which revolves around the involvement of village communities in preparation and implementation of microplanes using participatory techniques. In order to mobilise and involve local people in implementing the project, a number of trust and confidence building activities mainly small civil works were undertaken by the management in almost all the villages/eco-development units. Ecodevelopment committees/VDCs have already been formed in most of the villages and it is expected that by now strong or atleast functional local institutions are in place. However, given the ground realities such as lack of participation in some areas as well as some conflicts in others at the beginning of the project there is a vital need for monitoring not only of whether there are functional local VDCs in all the units/villages or not but also their strengths and weaknesses, so that remedial steps can be taken in time.

#### Indicators

In order to monitor the local institution, there is need to identify the characteristics/indicators of good or functional institution in the first place. For this propose we are considering some of the most common characteristics of functional local institutions which includes ; representation of females, SCs and landless etc. in the VDCs; conflict management capacities of VDCs ; their financial capacities and accountability; community assets and their maintenance; number and type of agreement aimed at protection and management of forest resources and degree of protection provide to the forest and wildlife & participation in microplanning and decision making. The criteria suggests above are not exhaustive and villagers would be involved to generate additional indicators/criteria which could capture the strength of institutions.

#### Methods

Although we have a quite fair idea of the past and current working of the local institution/VDCs in the ecodevelopment area, systematic baseline data on this subject is lacking. However this deficiency can be made up by generating base line data on the bases of local records and interview with key informants/and in groups as well as by comparing various VDCs in the light above mentioned characteristics/indicators of functional local institutions. The following two methods are proposed for monitoring the local institutions in the ecodevelopment areas;

- (i) Survey of local records: A survey of local records such attendance sheets, minute books, microplanes, cash books/cash books accounts and bank pass books etc. can provide some idea of the functioning of VDCs. It can reveal the priorities considered while preparing microplanes and their financial capacities and liabilities apart from the level of participation by various stake holders.



- (ii) Ranking and Scoring against Agreed Criteria.: In this method, key informants or groups of each of the Eco-development units/villages shall be asked to rank their VDCs against the agreed indicators of functional local institutions on scale of 0-5. Total scores of each of the VDCs could show their respective functionality. In addition this method shall show their respective strength and weaknesses in respect of each of the indicators selected as criteria of functional local institution (annexure i).
  
- (iii) In addition conflict mapping shall be done for judging intra VDC conflicts (Annexure ii)

Monitoring of the functionality of the local institutions as well as their weaknesses and strengths should be undertaken as frequently as possible. It is proposed to monitor this aspect every six months which will be done by local institutions themselves.





## ANNEXURE - II

### Conflict Map

Stake holders	1	2	3	4	5	6
1	Sign O denotes conflict Size of O shall denote the intensity of conflict.					
2						
3						
4						
5						
6						

### 3.4 Output II - Increased interstakeholders Collobarations

The conservation of biodiversity project aims to improve the quality of life of the local people particularly enhancing their incomes by increasing the productivity of agriculture, animal husbandry and household/handicraft industry etc. It is obvious that fores department and local institution alone cannot achieve these goals and collaboration of other line departments is imperative for the success of these efforts. Keeping these facts in mind, various efforts have been made to involve other key line departments particularly industry, agriculture, horticulture and animal husbandry in improving the productivity of existing occupations and opening up of new employment generation avenues. In addition the cooperation of panchayats, local administration and NGO's is very crucial for the overall success of the project. For monitoring therefore, it is very important to monitor the level of inter stake holder activities/ collaboration.

#### Indicators

Important indicators necessary for monitoring this aspect includes flow of technical/financial support from the agencies to VDCs, agreement over the nature and type of programmes taken up in the ecodevelopment area and number of interstakeholders meetings held in the area.

#### Methods

- (i) The assessment regarding the flow of technical / financial support from line departments and other agencies to local institution shall be made through a survey of official/ administrative records of VDCs and park administration. It shall be followed by discussions / interviews with the key persons of the VDCs, forest department and other line departments.
- (ii) The nature / type of agreements entered into by line agencies with the VDCs and park management as well as number of meetings organised in the ecodevelopment area by these departments/agencies shall be varified from the meeting records and other available records besides discussing with the key persons. A simple format for containing this data is given in annexure iii.

Monitoring of interstakeholders collobaration is to be undertaken every 6 months by the VDCs and park staff.



## ANNEXURE - I

### Interstakeholders Activities

Year	Name of Stakeholder/ Agency	No. of Meetings	Place of Meeting	Subject Matter	Activities



## ANNEXURE - II

### Conflict Map

Stake holders	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						

Sign O denotes conflict  
Size of O shall denote the intensity of conflict.





### **3.5 Outputs 3 and 4 - Enhanced use of energy conservation devices and increased accessibility / availability of natural resources / bio-mass**

Increased use of energy and biomass saving devices and increased availability of various forest resources particularly fuelwood, fodder and timber species to the households are among some of the most important outputs of project activities. It is not only because these resources are basic needs of the community, hence important for their survival and for the survival of their agriculture and livestock but also because enhancement and sound management of natural resources in the vicinity of villages is also an important objective of COB project and substantial money and labour have been invested for this purpose.

In order to analyse the change in the availability/accessibility of natural resources of their basic needs, and the level of use of energy saving devices , following questions need to be investigated:

- Whether due to project interventions people's needs/requirements on various species of fodder, fuelwood, timber, bamboo etc has decreased/increased or remained the same (provision of alternatives);
- Whether due to project interventions the availability/accessibility of various forest resources of their needs has decreased/increased or remained the same in terms of time, distance and labour spent as well as quantities/quality collected.

#### **Methods**

In order to access the change in the quantities of various forest resources mentioned above, we need to know the current and past level of quantities consumed by them as well as time or distance allocated for their collection by the household. Data / information on the pre project level, of consumption of some of the preferred species used for firewood, fodder and other uses was collected from the Tirthan ecodevelopment area (Annexure 1). Subsequent data / information shall be collected through a survey or by using other participatory methods on the level of consumption of these species by the household and the results compared with the available information which would act as baseline to monitor the changes.

Besides interviews / discussion and transects as well as survey of existing local records shall be conducted for obtaining possible supplementary information on the current level of resource use and the efforts made for their conservation. Monitoring of this aspect can be under taken every year or every six months depending on the level of inputs given in various ecodevelopment units / villages. Formats for containing required information is given in Annexure 2.

Monitoring of resource use is to be conducted every year by the local institution / VDCs in their respective areas.



















### 3.6 Output 5 - Sound resource use practices developed

The other important aspect to be monitored is the effect of project activities on the resource use and management practices. Due to awareness among the people regarding project objectives and strengthening of village institution as well as forest department, significant changes/improvements in the resource use practices are anticipated. In the forgoing pages monitoring programme for analysing the actual change in the quantities of various forest resources collected by the households has been made. However even if no significant changes on this aspect are noticed due to short period of efforts, and other constraints, it shall be worthwhile to observe / monitor the efforts / agreements etc. made for their sound management. It is therefore to observe the efforts aimed at improving the management of the following;

#### 1. *Resource use from inside the park*

Significant proportion of resources collected from within the park constitutes mushrooms, various medicinal plants and bamboo etc. All these resources are collected for earning cash incomes by selling them after processing etc., In addition grazing activity in the summer months is undertaken for subsistence and not for earning cash income.

#### 2. *Resource use from the ecodevelopment zone/village forests*

Contrary to the former category most of the resources collected from the ecodevelopment area (village forests) are aimed at fulfilling the basic domestic, agricultural and livestock/ cattle needs of households. Most of the species collected from these areas are used as fuelwood & fodder. In addition a number of species are used for making household utensils and agricultural implements etc besides being used as medicines/manure etc.

Monitoring of efforts / agreements etc. aimed at resource use practices in the former category should focus at :

- Controlling the number of collectors (right holder Vs. non right holders).
- Restricting the period of collection
- Managing the areas of collections
- Controlling / restricting the quantities to be collected
- Any other notable agreements / efforts.

Monitoring of change in the later category should focus at:

- Attempts / agreements made / implemented to increase their availability, such as plantations and closing etc.



- Attempts made at formulating programmes to control / restrict the use of resources.
- Attempts made at increasing the use of alternative
- Any other notable efforts / agreements made and implemented.

These parameters are simple to monitor and a survey / scrutiny of existing administrative and local records as well as discussion with the key persons are sufficient for this purpose. Data format is given in annexure 1. Monitoring on this aspect is to be done annually by the VDCs in their respective areas.



## ANNEXURE - I

### Change in Resource Management Practices

Sl. No.	Name of Resources	Change old Practice Suggestion/ Decided	Change Implemented	Remarks

### **3.7 Output 6 - Provision of alternative livelihood to dependent stakeholders, increased employment through handicrafts / households industries' development**

While studying the effect of COB project on economic status of the dependent population, we not only have to assess the absolute increase or decrease in their monthly/annual incomes but also the reasons which have brought about this change. Moreover the change in proportional share of various economic activities (agriculture, forest, livestock and others) to the total income of households is of paramount importance because even if the incomes remain more or less static, the change in the proportional share of different activities to the total income could have significant linkages with project activities and can demonstrate the impact of project activities on economic status of the households. In addition, the change in the proportional share of different sectors to the total incomes, also effects the quality of life in various ways. For instance earning the same income in less time and by putting less efforts (labour) would certainly amount to an improvement.

Likewise the changes in employment status of the dependent population, in terms of getting a new employment/occupation as well as strengthening/improving the existent occupations both on-farm as well as off-farm, is to be monitored. Monitoring on this aspect should also include the study of occupational change. As most of the households undertake a number of economic activities within the broad framework of subsistence economy, a notable change in the daily / seasonal calendar of activities caused by project interventions deserves to be noted. For this the following questions are to be investigated.

- Change brought about in the allocation of time, resources and number of persons in any economic activity.
- Change in the production or any other benefits from the major economic activities. New economic activities undertaken in the last three years particularly number and type of new industries / units opened and old ones strengthen and the number of persons employed in them.
- Number and class of various stakeholders given alternative employment.

#### **Methods**

##### *i Estimating change in the importance of major economic activities*

In order to find out the change in the importance of various economic activities undertaken by the households, preferential rankings/scoring of various activities for different years shall be done. Households shall be asked to list the various economic activities pertaining to



agriculture/horticulture sectors, forest sector, household sector and industrial sector in preference according to important they assigned to them for different years (Annexure -II). In addition seasonal / daily activity calendars for various years shall be prepared and compared in order to find out change brought about in the allocation of time, resources and labour in various activities over time.

*ii) Provision of alternative employment, improved households / handicraft industry*

In order to monitor this aspect of the outputs, the households shall be asked whether they have adopted any new occupation in place of their old ones or any new economic activity have been taken by them in addition to their old ones. If the answer is affirmative, details shall be recorded. In addition the improvement brought about in the existing occupations / industry shall be asked and recorded. Format for collecting required information for this survey is given in appendix 2.

*iii) Survey of records / discussion with key persons*

A survey of existing records pertaining to relevant information on the number of new units opened/financed or facilitated by management and the VDCs over the last few year, budgets spent on it as well as target groups or beneficiaries selected, efforts made / activities undertaken by them to strengthen the existing occupations shall be undertaken. Interviews / discussion shall be undertaken with key persons for obtaining necessary information.

Monitoring of this aspect should be done jointly by VDCs and park staff after every six months.

## ANNEXURE - I

### Occupational Structure of families in Tirthan Valley of GHNP

Occupation	No. of families (Percentage)
1. Only Agriculture	4
2. Agriculture, Animal Husbandry and Weaving	10
3. Agriculture, Animal Husbandry, Weaving and collection of Medicinal plants	60
4. Service	6
5. Agriculture, Collection of Medicinal Plants, Handicrafts, etc.	8
6. Carpenter, Tailors, etc.	9
7. Shopkeepers	3



## ANNEXURE - II

### Preferential ranking of various occupations/activities undertaken by the households in different years

Write the following economic activities in preference according to the importance you assigned to them in different year from among the following:

1. Agriculture      2. Livestock      3. Medicinal Plants Collection      4. Labour Work  
 5. Any other Household Industry      6. Commerce/Business      7. Others

Sl. No.	1996	1997	1998
1.			
2.			
4.			
5.			
6.			
7.			



### ANNEXURE - III

**Any new occupation adapted during the last 2 years : Yes/No**  
**If yes, what and;**

Investment	No. of persons	Production	Marketing and income	Remarks



## Negative impact on vulnerable stake holders

Vulnerable stake holders such as females, SCs, land less and other economically weaker sections are supposed to be the primary beneficiaries of the project investment and activities. Therefore, the social benefits of project activities either the enhancement of incomes and employment or the increased availability of natural resources (energy & biomass etc.) should reach them in the first instance. The results of survey/monitoring of objective two and outputs 4 and 6 shall demonstrate the extent and magnitude of these benefits received by these sections.

On the contrary however, there might be some direct negative impacts on these sections which may be caused ignorantly due to implementation of certain programme and activities, for example road construction may result in the loss of jobs to potters and mule owners etc. Enforcement may hard hit to those who are landless and are totally dependent on the sale of natural resources for their livelihood. It is therefore desirable to monitor, if there are any direct negative impacts of project activities (microplanning and implementation) on the vulnerable stakeholders so that compensatory efforts can be made or alternative course of action taken.

## Indicators

Major variables on which impact of ecodevelopment activities shall be studied includes vulnerable stakeholders' income, employment accessibility and displacement of natural resources, legal and customary rights and other indicators of socio-economic importance. For obtaining information aimed at monitoring such negative impacts on vulnerable stake holders, data format is given in Annexure-2.

## Methods

### *i) Impact mapping of ecodevelopment activities*

In order to determine the impact of various ecodevelopment activities on vulnerable stake holders, a general impact assessment mapping is proposed. In this, impact of each activity on each group of vulnerable stakeholders shall be assessed through SSI / discussion with key persons of these groups. The sole question investigated is whether the particular activity has effected a vulnerable group of stakeholder; POSITIVELY or NEGATIVELY or WITH NO EFFECT (annuexure 1)

### *ii) Specific analysis of impacts of certain activities on vulnerable stake holders*

On the basis of general impact mapping discussed above, certain specific activities shall be identified ( having negative impacts) and their impact on each of the indictors mentioned in this action shall be analysed in detail ( Annexure2).

Systematic information / baseline data on this aspect is lacking and it is proposed to conduct its monitoring at short intervals in the beginning so that a reliable baseline data can be generated in time and subsequent monitoring is to be taken up every six months by VDCs.



## ANNEXURE - I

### Ecodevelopment Activities and their Impact on Various Stakeholders

Stakeholder	Activities	1	2	3	4	5	6	7
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Positive Impact (+)

Negative Impact (-)

No Impact (0)



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## ANNEXURE - II

### Impact Assessment of Certain Ecodevelopment Activities on Vulnerable Stakeholders

### **3.8 Outputs 7 - Basic village infrastructure developed / availability / accessibility to other services/amenities**

Other important indicator of the quality of life to be considered in the light of project investments can be the provision of social/municipal services to the villagers. Most of the investments made in the trust building activities were aimed at building infrastructure such as footpaths, bridle paths, bridges etc and providing potable drinking water, toilets, rain-shelters and repair of grounds, temples etc.

It shall, therefore, be not out of place to monitor what social / municipal services have been provided, where and who are the major beneficiaries.

#### **Methods**

Most of these activities are civil works and their monitoring can be done by verification on the spot and by the survey of available records / budget etc. In addition interviews and discussion with key persons from various stake holder groups shall reveal whether there are any disparities in the distribution of services and amenities among the various stake holders groups.

Monitoring of this aspect can be undertaken annually, jointly by the VDCs and department every year.

### **3.9 Output 8 - Increased agriculture/horticulture production / development:**

In order to monitor the changes in the agriculture and horticulture production as well as changes in the overall cropping pattern, two basic questions are to be investigated:

#### **A. Change in the net area under various crops / Change in cropping pattern:**

Baseline data is available on the proportional area allocated by the households to various crops in the ecodevelopment area (Annexure-I). A survey/transect and discussion with the households shall reveal the current pattern i.e. area allocated to various crops by the households at present. By comparing both the data it shall be possible not only to see the changes in the area under various crops but also new crops grown and preferred by the households.

#### **B. Change in the productivity of various agricultural/horticulture products:**

As baseline data on this aspect is lacking, relevant information pertaining to changes in the yields of various crops can be obtained only through the households or by key persons of the area/villagers. Though the information given by them on the yields of previous years might not be very precise but significant changes must have been noted by them. It is therefore, proposed to find out the yields of various crops for the years 1996, 1997 and 1998 by discussing with the selected households and key persons. Format for containing this data is given in Annexure-V.

Monitoring of the agricultural / horticulture development can be undertaken twice in a year by the VDCs in their respective areas.



## **ANNEXURE - I**

### **Major crops grow in Tirthan Valley of GHNP**



**ANNEXURE - I (Contd..)**

**Horticulture in Tirthan Valley of GHNP**



## ANNEXURE - II

### Agricultural Production

Name of Crop	1	2	3	4	5	6	7
<p><b>Total Land</b></p> <p style="padding-left: 40px;">Area Sown 1995 Production 1995</p>   <p style="padding-left: 40px;">Area Sown 1996-97 Production 1996-97</p>   <p style="padding-left: 40px;">Area Sown 1997-98 Production 1997-98</p>							

### **3. 10 Output 9 - Staff and stake holders capacities improved:**

A number of activities have been undertaken to improve the capacities of staff particularly the front line staff and the local institutions. These include training, infrastructure development such as construction of inspection path, checkpost, forest huts and rest houses; procurement of equipment's (wireless sets / camping gear etc.) and conducting different workshops and seminars for improving their skills. These outputs can be monitored by the survey of existing records, budget allocated to them and by physical verification. However the net output which is directly related to the improved skills of staff and local institution is the decrease in the number of forest offences so far as management of protected areas is concerned.

#### **Indicators**

Number of forest offences particularly poaching, felling, encroachments and other serious illegal acts.

#### **Methods**

Number of various forest offences are to be taken from the official records for pre project and initial years of the project period. They are to be compared with subsequent number of offences, data / information on which shall be collected from official records, local institution and key persons / informers of the area. It shall reveal the change in the number of forest offences over time caused by project intervention.

Monitoring on this aspect is to be conducted every six months jointly by the VDCs and park staff.





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## ANNEXURE - I

### Impact of COB Project on Forest Offenses

#### **4. FEASIBILITY ANALYSIS OF ACTIVITIES**

As discussed in the beginning of the proposed monitoring frame-work, monitoring is to be done at objective and outputs level only. However, it has been felt that at inputs/activity level, a feasibility analysis should be undertaken in respect of each major activity in the ecodevelopment area. It should assess the impact of various activities on biodiversity of the park, society, economy as well as on wider ecological status of the area. In addition, technical, economic and political feasibility of the activities should be analysed.

##### **Methods**

In order to assess feasibility and impact of various activities on the variables discussed above, activity ranking exercise shall be undertaken in consultation with key persons. Format for activity ranking is given in Annexure-I.



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## ANNEXURE - I

### Activity Ranking For Prioritization