People grow with trees

The experience of Haryana Community Forestry Project

FOREST DEPARTMENT HARYANA

DOCUMENTATION ON HARYANA COMMUNITY FORESTRY PROJECT

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ABBREVIATIONS

ACF	-	Assistant Conservator of Forests
AFC	-	Agriculture Finance Corporation
AFPRO	-	Action for Food Production
ASEED	-	Asian Society for Entrepreneurship Education and Development
AWP	-	Annual Work Plan
BDO	-	Block Development Officer
BPL	-	Below Poverty Line
CBA	-	Cost Benefit Analysis
CDB	-	Community Development Block
CE	-	Community Entry
CF	-	Conservator of Forests
CFD	-	Community Forestry Development
CPA	-	Community Problem Analysis
CPRs	-	Common Property Resources
CSWCRTI	-	Centre Soil and Water Conservation Research, Demonstration and Training Institute
DCF	-	Deputy Conservator of Forests
DFO	-	Divisional Forest Officer
DIA	-	Development Institute for System Alternatives
DLA	-	Degraded Land Amelioration
DOST	-	Development Organisation for Sustainable Transformation
DR	-	Deputy Ranger
DRDA	-	District Rural Development Agency
DRS	-	Development and Research Services
EC	-	European Commission
ECC	-	Earth Care Consultants
EOP	-	End of Project
EPA	-	Entry Point Activity
ERC	-	Energy Research Centre
EU	-	European Union
FA	-	Financing Agreement
FD	-	Forest Department
FEW	-	Fuelwood Equivalent
FFA	-	Farm Forestry Association
FG	-	Forest Guard
FGD	-	Focus Group Discussion
GIS	-	Geographical Information System
GoH	-	Government of Haryana
GoI	-	Government of India
GPS	-	Geo-positioning System
HCFP	-	Haryana Community Forestry Project
HFD	-	Haryana Forest Department
HRMS	-	Hill Resource Management Society
ID	-	Institutional Development
IGA	-	Income Generating Activity
IRM	-	Institute Rural Management
ISD	-	Institute for Sustainable Development
J/PFM	-	Joint/Participatory Forest Management
JBIC	-	Japan Bank of International Cooperation

JFM	-	Joint Forest Management
KAP	-	Knowledge, Attitude and Practice
KG	-	Kitchen Garden
KVIC	-	Khadi Village Industries Commission
LCS	-	Leadership and Communication Skills
LFM	-	Logical Framework Planning Matrix
LPG	-	Liquefied Petroleum Gas
LW	-	Link Worker
M&E	-	Monitoring and Evaluation
MC	-	Management Committee
MCSS	-	Multi-Criteria Selection System
MIS	-	Management Information System
MM	-	Money Management
MoEF	-	Ministry of Environment and Forests
MR	-	Monitoring Report
MSDF	-	Modified Sand Dune Fixation
MSFF	-	Multi-species Farm Forestry
MTR	-	Mid-term Review
NGO	-	Non-Government Organisation
NPD	-	National Project Director
NTFPs	-	Non-timber Forest Products
NWFP	-	Non-wood Forestry Products
OBC	-	Other Backward Classes
OCI	-	Overall Capacity Index
OD	-	Organizational Development
OVIs	-	Objectively Verifiable Indicators
OWP	-	Overall Work Plan
PA	-	Participatory Assessment
PAME	-	Participatory Assessment and Monitoring and Evaluation
PAU	-	Panjab Agricultural University
PCFD	-	Participatory Community Forestry Development
PFM	-	Participatory Forest Management
PLA	-	Participatory Learning and Action
PM	-	Participatory Management
PME	-	Participatory Monitoring and Evaluation
PMU	-	Project Management Unit
PRA	-	Participatory Resource Appraisal
PRP	-	Participatory Resource Planning
RA	-	Rapid Appraisal
REEDS	-	Rural Environment Enterprises Development Society
RDT	-	Rapid Diagnostic Tools and Techniques
RLEK	-	Rural Litigation and Entitlement Kendra
RLES	-	Rural Livelihood and Environmental Services
RMF	-	Resource Management Fund
RT	-	Root-trainer Technology
SC	-	Scheduled Castes
SDF	-	Sand Dune Fixation
SDFO	-	Sub-Divisional Forest Officer
SEWA	-	Self-Employed Women’s Association
SEWA	-	Society for Social Education Employment and Welfare Affairs
SFD	-	State Forest Department
SHG	-	Self-Help Group

SIDT	-	Support Initiatives in Development
SoV	-	Sources of Verification
SPACE	-	Society for Promotion and Conservation of Environment
SRETA	-	Society for Rural Economic and Technology Advancement
SVPK	-	Samaj Vikas Prayatan Kendra
SWOT	-	Strengths, Weaknesses, Opportunities and Threats
TA	-	Technical Assistance
TERI	-	The Energy and Resources Institute
ToT	-	Training of Trainers
VE	-	Village Entry
VIS	-	Village Information System
VLI	-	Village Level Institution
VRF	-	Village Revolving Fund
VRMC	-	Village Resource Management Committee
VRMF	-	Village Resource Management Fund
WHD	-	Water Harvesting Dam
WIMCO	-	Western India Match Company
WUA	-	Water Users Association

1. INTRODUCTION

India has been losing its forest cover rather rapidly. While 23.57% of the total geographical area of nearly 329 million ha (or about 77.5 million ha) has been recorded as forest, the actual forest cover is of the order of 67.83 million ha (20.64%). Equally significant is the fact that the quality of natural forests is widely accepted to have deteriorated. Of the recorded forest area, nearly 40 million ha, is severely degraded and over 0.15 million ha (or about 0.2%) is estimated to be deforested annually. There has been a decline in biodiversity over the years and the problems of soil and nutrient erosion are extensive in several areas.

In the context of present day depletion of India's natural resources causing serious economic, environmental, and social repercussions, putting natural resource management on a sustainable footing is as complex an undertaking as it is vital to our very existence. Several of the lessons learnt have changed the design and implementation of forest interventions. Among other things, emphasis in policy has changed to involve the local communities in the protection, regeneration and development of forest resources including degraded forests. The policy document envisages, as one of the essentials of forest management, that forest communities should be motivated to identify themselves with the development and protection of forests from which they derive benefits. It is further emphasized that an industry-farmer nexus be developed for meeting the raw material needs of the forest-based industries; to promote farm and agro-forestry for meeting the local needs of fuel, fodder and timber; and creating a massive people's movement, with the involvement of women, for achieving the various objectives of forest policy and to minimize pressure on existing forests.

Thus the new forest policy signals fundamentally a different approach. Among other things it places emphasis on the participation of poorer communities living in and around forests in their management. This approach of Joint/Participatory Forest Management **(J/PFM)** attempts to achieve a better balance between the needs of nearly 100 million rural poor who derive their income from forest products and the demand of the remaining 750 million or so, including particularly the nearly 300 million in the urban industrial sector. This participatory approach is intended to allow communities to extract Non-timber Forest Products **(NTFPs)** in a sustainable manner and also share with the village communities sale proceeds of various forest products. By so increasing the stake of rural communities in forest resources and vesting them with a greater control of the management of these resources, Joint Forest Management **(JFM)** is expected to rationalise the distribution of benefits as well as help improve land productivity on sustainable basis.

Community efforts have a considerable role in the sustainable development and management of forest resources, and striking successes have been achieved in the development of forest resources through Participatory Management **(PM)** involving the forest departments and the local communities.

But many questions about JFM still remain unanswered. First, the JFM approach is confined to limited areas. Well-documented information on the implementation or the distribution of benefits between the communities and the Government is limited. Much of the focus of experimentation, monitoring and evaluation to date

has been at the micro/village or the district levels. The scope for rapid and effective adaptation of the approach on a significant scale is not yet known, including particularly their implications for a legal and institutional framework, although successes have been cited in several states (West Bengal, Haryana etc) with JFM rapidly spreading to other states with diverse climatic conditions, vegetation types and socio-economic structures. How does the JFM experience vary among these highly diverse eco-socio-political circumstances and what generalizable lessons, if any, can be drawn in terms of productivity, sustainability or equity of JFM approach?

The likely impact of JFM, as indeed the impact of other innovations such as Community, Social, Farm, or Agro-Forestry needs also to be better understood in a well documented, quantitative and comparative terms as also their effect on forest productivity, distribution of benefits and implications for institutional, legal, organizational and market policies. This will help assess the likely impact of these various strategies on the overall supply of, and the demand for forest products, their composition, and correspondingly the composition of their beneficiaries (i.e. rural, urban, low and other income households) at the broader (regional, state and to the extent possible, the national) levels. As the nature of beneficiaries is closely related to the nature of interventions, it could then provide an important input into the development of several different approaches.

The present document is an attempt to briefly present the implementation of Haryana Community Forestry Project **(HCFP)** with Community intervention through various phases of its implementation from objective setting, planning, decision making, regeneration, protection, management, development and conservation of forests, to the benefit of the communities concerned. It is hoped that the document would prove to be a good help for the projects in community forestry to follow hereafter.

2. STATE BACKGROUND

The State of Haryana with a total geographical area of 43,910 sq km and population of over 21 million (2001 census), is one of the smallest states of the Indian Union bounded by severely eroded Shivalik Hills and Aravalli ranges in the north and the south respectively. The State of Rajasthan (Rajasthan Desert) lies to its west and southwest, Punjab to its northwest, Himachal Pradesh to its northeast and the river Yamuna to the east, beyond which are the states of Uttar Pradesh and Uttrakhand.

2.1 Land Use

Of the total land area of 44,212 sq. km, 3.527 million ha (79.8%) are under agriculture, 0.1587 million ha (3.6%) under forest and 0.7355 million ha (16.6%) under other land uses (**Table 1**). 0.3039 million ha constitute *Panchaya*t land, 0.62 million ha are under sand dunes, while 0.45 million ha are affected by salinity and alkalinity.

Table 1: Land Utilisation in Haryana

Land use	Area (million ha)	% of the total
Agricultural (net area sown)	3.527	79.8
Forests	0.1587	3.6
Other land uses (non-agricultural, fallow, barren wasteland, pastures)	0.7355	16.6
Total	***4.4212***	***100***

Sources: *Forest Survey of India, State of Forest Report 2005*
Government of Haryana Directorate of Economics & Statistics (2003-04)

The cultivable area consists of 1.7 million operational holdings with an average size of 2.1 ha, 47% of which are below 1 ha. Close to 3 million ha are under irrigation (around 85% of the cropped area), irrigation water being available from two main canal systems and about 600,000 tube-wells and pumping sets. Land varies in quality from prime cropland to highly degraded saline/alkali soils and moving sand dunes resulting from deforestation and poor land management. Net sown area has remained static at 80% since 1971, indicating that the potential for expansion of agriculture was already exhausted more than 35 years ago. At the same time, the number of landholdings has increased by 70% due to increased population pressure.

2.2 Climate

The climate of the State is subtropical with distinct winter, summer and monsoon seasons. Normally the months from November to February are cold, whereas the hot weather begins from March to the advent of the monsoon in June or early July. The average annual rainfall varies from year to year (so do the number of rainy days, being on an average 55) with a low of 217 mm in Bhiwani District to a high of 1560 mm in Ambala District, maximum rainfall being received in the months of July and August. Monsoon showers may continue up to September-October, after which there is usually very little rain until the winter months, caused by western disturbances. Intense cloudbursts may occur during July to

September, causing high run-off. These high velocity discharges lead to the formation of gullies and multiple ravines along the slopes. The southern half of the State receives less rainfall spread over few days in a year. There is normally a five-month dry season (December to April) and 60 to 70% of the total rainfall occurs from June to August. In general, 65% of the area of the State is characterised by arid and semi-arid climate and drought is a recurring phenomenon. Frost is common in drier areas during winter and hailstorms occur in March-April. Temperatures vary from 47º C in summer to 0º C in winter with high diurnal variation.

2.3 Agro-ecological Zones

There are four main agro-ecological Zones in the State, each with its own peculiar potentialities for use and problems of utilization. These are:

- ***Shivalik Hills*** in the northeast, which are steep and comprise of friable sandstone and conglomerates. The hill slopes represent a severely eroded landscape, which has resulted in *Cho* (seasonal river) formation in the plains below, mainly due to removal of vegetation through excessive grazing and indiscriminate exploitation of vegetation.

- ***Central Plains*** wherein as a result of cultivation on marginal lands and increase in irrigated cropping, large areas have been affected by soil erosion, water-logging, soil salinity and lowering of groundwater.

- ***The Desert*** comprising of numerous low stabilised and shifting sand dunes in the southwest and characterised by recurrent overgrazing and droughts with consequent degradation of vegetation, soil erosion and inducement of livestock migration.

- ***Aravalli Hills*** traversing through the plains in the southwest. Super-imposed on this physical feature is the rainfall pattern, which declines from north to south. Denudation of tree cover, uncontrolled grazing and quarrying are accentuating desertification conditions in this zone.

2.4 Human Resources

The total population of Haryana, according to the 2001 census, is over 21 million with a population density of 477 people per sq. km, which is above the all India average of 313. Population by the end of 2004 is estimated at 22.5 million. 71% of the population is rural and 20% of the total population belong to Scheduled Castes. The literacy rate for population aged seven years and above was 67.9% as per 2001 census (78.5% for men and 55.7% for women). The gender ratio is 861 females to 1000 males, one of the lowest in all India.

Haryana has one of the highest per capita incomes in the country – Rs. 15,721 in 2003-04 at constant (1993-94) prices – mainly because of its proximity to Delhi and extensive use of irrigation facilities. The per capita net state domestic product at current prices was Rs. 32,712 in 2004-05, second highest amongst Indian states. However, wealth is unevenly distributed, both within individual

communities as well as across the State. About 8% of the rural population were below the poverty line in 1999-2000.

The tract is inhabited mostly by communities like *Gujjars* (both Muslims and Hindus), *Labanas*, *Jats* and *Harijans*. Agriculture livestock rearing and daily wage jobs are their major occupations. Goats are generally reared by landless *Gujjars*, (particularly Muslim *Gujjars*) and *Harijans*. Land holdings are small and agriculture is mostly rain fed. There is acute water scarcity in the entire tract but wherever earthen dams have been constructed and water is made available for irrigation, agricultural production has increased two to three fold, boosting the economy of the concerned villages considerably.

2.5 Energy Consumption

Haryana's domestic energy requirement is primarily met through the use of wood, charcoal, agricultural wastes and dung cake. Given that per capita income in the State is somewhat higher than in other states of the country and all villages have been electrified, only about 4.1% of the energy requirements are met from non-renewable energy sources. The high cost of electric power, as well as of cooking gas, coal and kerosene, precludes their use as a source of domestic fuel especially for the rural poor and disadvantaged groups.

Based on an average daily household consumption of 20 kg of fuel wood, the State's domestic energy requirement is around 12 million tonnes of Fuelwood Equivalent **(FWE)** per year as follows.

- Fuelwood, charcoal and agricultural waste - 8 million tonnes (66.6%)
- Dung cake (73% of the total dung production) - 3.5 million tonnes (29.3%)
- Non-renewable sources - 0.5 million tonnes (4.1%)

It is estimated that tree cover in Haryana would have to be increased 10 times to meet its fuelwood requirement. There is thus a clear need to increase fuelwood production to permit more dung to be used as manure, agriculture waste as fodder, and to reduce pressure on natural forests and other vegetation.

Fuelwood deficits also point to the need for more efficient energy saving devices – smokeless *chulhas* (cooking stoves) etc., which to date have not made any perceptible impact to ease the situation.

2.6 Livestock and Grazing

Animal husbandry is an integral part of the livelihood system of the people of Haryana, both poor and the elite. It is estimated that a rural household on an average keeps five head of livestock to meet their milk, draught power, manure and energy (dung cake), requirements. Increasing demand for milk and animal products from urban centres is a major incentive for people to rear livestock. The provision of dairy cattle under credit-linked anti-poverty programme has made livestock rearing a major source of sustenance to the poor.

With a livestock population, excluding poultry, of 8.9 million (17th Indian Livestock Census, 2003), the pressure of grazing both on forest and common lands is very high. There are areas with (i) high livestock pressure (Ambala, Kurukshetra Districts etc), (ii) moderate livestock pressure (foothills of Shivaliks), and (iii) low livestock pressure (Bhiwani, Rewari Districts), where sheep and goats predominate.

There has been a steady decline in the number of cows and draught animals during the past 35 years, with the herd strength being reduced by over 30% between 1992 and 2002. The number of sheep and goats decreased by 40% 1992-2002. At the same time, the number of buffaloes increased by almost 40% 1992-2002 and by 140% since 1972. This indicates a shift from open grazing to stallfeeding. The poultry population in the State has increased dramatically; up by 60% 1992-2002 and by 1300% since 1972.

A large proportion of livestock throughout the State is uneconomic and their unfettered grazing in public, community and even in private lands is, no doubt, a cause of environmental concern. Evolving appropriate Silvi-pastoral systems, need-specific breeding policy, encouragement of stall-feeding and establishment of *Gaushalas* (homes for stray cattle) are necessary for the success of any tree-planting programme.

2.7 Forest Resources

Forests in the State occupy an area of 0.16 million ha, constituting 3.6% of its total geographical area. Social and Farm Forestry plantations in the last two Five Year Plans helped in extending tree cover to 6.6% by 2003, which has further increased to 7.1% in 2005. Natural forests, however, cover only 40,000 ha, two-thirds of which are degraded and the remaining one-third has a density of over 40%.

The Shivalik Hills support vegetation corresponding to Northern Dry Mixed Deciduous Forest Type. Forest cover is sparse on the western side as the area has been heavily grazed and is over-exploited. Excessive grazing and frequent fires have resulted in bushy growth and coarse unpalatable grasses. *Acacia catechu (Khair), Acacia nilotica (Kikar) Dalbergia sissoo (Shisham)* and *Anogeissus latifolia (Chhal)* are the dominant tree species. Co-dominant and associate tree species found in the region are *Lannea coromandelica (Jhingan), Acacia leucophloea (Reru), Dyospyros Spp. (Tendu), Ehretia laevis (Chamror), Bauhinia variegata (Kachnar)* and *Butea monosperma (Dhak).* The clayey forest tracts, where moisture regimes are better, support *Shorea robusta (Sal), Terminalia tomentosa (Sain), Ougeinia oojeinensis (Sandan)* and *Syzygium cumini (Jamun).* At higher reaches, sporadic trees of *Pinus roxburghii (Chir)* are met with.

Among the shrubs, *Carissa spinarum (Karaunda), Adhatoda vasica (Basuta) Dodonaea viscose (Mendar), Nyctanthes arbortristis (Kuri)* and *Lantana camara (Booti)* are common. Other major species are *Flacourtia ramontchi (Kangi) Capparis horrida (Hins), Zizyphus Spp. (Ber)* and *Murraya keoengii (Gandhela).* In shady depressions *Phoenix Spp.* also occurs.

Dendrocalamus strictus (Bamboo)*, Eulaliopsis binata (Bhabbar)* and *Chrysopogon fulvus (Daulu) Saccharum munja (Sarkanda), S. spontanium* and *Heteropogon contortus (Sarala)* are the common grasses found in the area. Among the climbers, *Bauhinia vahlii (Maljhan)* is of importance.

The per capita forest area in the State is 0.01 ha; far below the Indian average of 0.11 ha, and world average of 1.04 ha. The Haryana Forest Department **(HFD)** plans to extend tree cover to "10% of the land area by the year 2010 so as to realise the ultimate goal of 20% in a phased manner" (Haryana Forest Policy 2006). The potential areas for plantation are the common lands, mainly owned by *Panchayats*, institutional land, river banks, privately owned sand dunes in western parts, salt affected and waterlogged areas in the central and southern plains and degraded hills in the north and the south.

2.8 Land Degradation

According to National Bureau of Soil Survey and Land Use Planning (1996-1997) one third of the total land area (44,200 sq. km) in the State is degraded, with mobile sand dunes in the southwest (about 0.63 million ha are affected by active sand dunes), saline and alkali soils in the central plains (estimated variously to be between 0.42 and 0.63 million ha) and severely eroded hills (Aravalli and Siwalik ranges) in the south and the north.

This degradation is caused by over-cutting and overgrazing of vegetation on public, community and even private lands, poor management of irrigation water in the Central Plain; increasing population pressure and uneven distribution of wealth in the rural communities. Landless Scheduled Castes and other disadvantaged groups in a poverty spiral have no alternatives of income and depend on access to grazing, fodder and fuelwood on common and public lands.

The resulting pressures on these areas have depleted vegetation, caused soil erosion and diminished the yield of grass and fuelwood. Rural poverty is commonplace with women, Scheduled Castes and the landless being among the most disadvantaged groups. Afforestation is one way to reverse this degradation.

3. COMMUNITY FORESTRY IN HARYANA

The State of Haryana inherited a small forest area after the trifurcation of the then Punjab State in 1966 and there is not much scope for increasing the same, as the State is primarily agriculture based. For various reasons, however, the State Forest Department **(SFD)** is not able to deal with all *Panchayat*, common and community lands etc, which are otherwise lying barren but could be used for raising forest crops to make them economically viable and environmentally benign. Community Forestry, therefore, with the involvement of the general public, is one of the solutions to stop further land degradation in the State.

3.1 Past Efforts

Shivalik Hills were well protected with a luxuriant cover of both broadleaved and coniferous species up to the end of the eighteenth century, when forests belonged to the local *Rajas* and *Jagirdars.* Some of these forests, however, came under the British administration at the beginning of the nineteenth century, when in 1806 a first attempt at administration of forests in India was aimed at, with their exploitation to meet the large size timber requirement of the royal navy. Later in 1822, land settlement was carried out with the sole purpose of ensuring that lands were rapidly brought under plough. Revenue officers were authorised to grant leases and the hillsides were divided among villages located in the hills. Brushwood and forest produce were declared to be village common property.

During the period 1815 to 1860 the State had practically no control over most of the forests when during 1861 to 1876 they were brought under the control of the Revenue Department and in the process large areas were clear-felled for meeting the firewood requirements of cantonments and civil hill stations. Management of forests was transferred to the Forest Department in 1879, and demarcation of forests was taken up in 1890.

As forests provided excellent grazing areas and agriculture was labour intensive, difficult, and not paying, large herds of cattle were reared by the people with an increasing number, in excess of the carrying capacity, being grazed in the forests. Rapid denudation of Shivaliks ensued, resulting in the destruction of much of the agricultural lands in the plains below, by hill torrents (*Chos)*. This necessitated adoption of special legislation called “The Punjab Land Preservation (*Chos)* Act” (commonly referred to as *Chos* Act), enacted in 1900. This Act regulated pasture and wood cutting rights as well as rights to break up new land for cultivation in forest areas. However, the pressure of population on forests remained very heavy both for forest produce and grazing.

During the period 1914 to 1916, the Government evicted sheep and goats after payment of compensation, but in large areas of low foothills, nomadic sheep and goats used to crowd in the open forests during winter (November to February) causing much damage. In 1931, a special Committee of Legislative Assembly was convened under the Chairmanship of Sir Miles Irving, Financial Commissioner, which found that the basic cause of erosion was the disappearance of forests.

From 1939 onwards the Cooperative Department of the Government organised cooperative *Chos* Reclamation Societies for reclamation of *Cho* areas and extensive soil conservation works were undertaken along with planting. It was

realised that appreciation and cooperation of the general public for the various soil and water conservation and land reclamation measures was a must to have their strong support, and complete closure of at least 50% of each forest area was essential. Government followed the policy of persuasion for people volunteering for closure of forest areas. After independence, with the advent of the Five Year Plans, such measures were taken up on a more extensive scale but areas could not be closed effectively. Increasing human and livestock population put tremendous pressure on natural forests, resulting in deforestation and degradation of many areas.

3.2 Evolution of Participatory Management

The seriousness of the problem of soil erosion in the Shivaliks came into sharp focus in mid-seventies when deforestation in the catchment (Shivaliks) of Sukhna Lake (source of water supply for Chandigarh city) was causing siltation of the lake. Various engineering and vegetative measures became ineffective in the wake of lack of people's cooperation in maintaining these measures. This led to the evolution of participatory approach to forest management by enlisting people's participation in the protection and management of forests jointly with the HFD. This experimental programme started by the Chandigarh Centre of Central Soil and Water Conservation Research, Demonstration and Training Institute **(CSWCRTI)**, Dehra Dun, and the HFD in Sukhomajri and Nada watersheds, was designed to achieve increased productivity and effective resource conservation. The strategy adopted for obtaining the willing cooperation of the local people was the construction of water harvesting structures to provide irrigation water to rainfed agriculture, which increased yield two to three times and proved a great incentive in soliciting cooperation of the local communities. This captured the attention of the farmers and gave a new direction to the concept of watershed rehabilitation. Communities gained confidence as the economic returns from this new management approach began to materialize.

3.2.1 Hill Resource Management Societies

Local communities after observing improvement in the condition of pilot watersheds and other benefits like increased agricultural production and availability of more fodder, etc. became more cooperative in the management of these forest watersheds. Open grazing was replaced by stall-feeding, goats were replaced by high milk yielding buffaloes and illicit felling was given up in favour of removing dead and fallen wood. The villagers were convinced that various restrictions were in their own interest as otherwise the dams would get silted up.

With the growing number of dams the field staff of the Forest Department got overstretched and could not evolve an effective management system. It was also necessary to pass on the benefits of social fencing to the people for their deeper involvement. It was, therefore, decided to hand over the management of this Programme to the villagers and for this purpose a Water Users Association **(WUA)** was formed in the year 1981, which was later renamed as Hill Resource Management Society **(HRMS),** a village body registered under the Registration of Societies Act, 1860, with responsibilities of: (i) protection of forests against grazing and illicit felling, (ii) distribution of irrigation water, (iii) fixing of rates for water, grass, etc., (iv) maintenance of dams and conveyance systems, (v) maintenance of accounts, and (vi) cooperation and interaction with the staff of the

Forest Department. All adults of all families in the village were free to become members of the Society, thereby sharing equal rights and responsibilities.

Each society had a duly elected Management Committee **(MC)** of 7-13 members including two or more women members. The Committee was required to meet every month to discuss various priorities and was attended by outside resource persons from the then Tata Energy Research Institute **(TERI)** (now renamed as The Energy and Resources Institute) and officials of the SFD.

3.2.2 Joint Forest Management Policy

The revised National Forest Policy of 1988 envisages, as one of the essentials of forest management, that forest communities should be motivated to identify themselves with the programmes of protection, management, development, and conservation of forests. The basic philosophy underlying the proposed policy was to link the economic interests of the rural communities living in and around forests with sustainable management of these areas.

June 1, 1990 was indeed a watershed in the history of India's forest management when, inspired by the success stories of Participatory Forest Management **(PFM)**. Government of India, Ministry of Environment and Forests **(MoEF)** issued policy instructions, consistent with the National Forest Policy of 1988, to all the state governments supporting greater participation of village communities and Non-Governmental Organisations **(NGOs)** in the regeneration, management and protection of degraded forests. The implications of this document are far-reaching and assertive in support of PFM strategy.

Based on various field tests involving beat profiling, explaining the programme to the community, meetings with individual communities when resource problems were discussed, assisting communities to form groups and also to get a feedback regarding programme policy proposal, drawing of micro-plans and creating of HRMS, a policy document on JFM was prepared and the same was approved by the Government of Haryana **(GoH)** on June, 13th 1990 (GoH, Forest Department, Memo No. 3373-Ft-I-90/15610 dated 13-06-1990 and Notification No. 3799-Ft-I-98/13358 dated 29-06-1998). The enunciation of this policy was a landmark in the evolution of JFM in Haryana.

The policy document contains the rights and responsibilities of the HFD and the village societies and discusses the details of sharing increased protection. In order to lay down the procedure for implementing the JFM policy, rules were formulated and approved by GoH in 1998. These rules besides dealing with leases and sharing of income from increased forest produce from a management area also allows the members of HRMS to collect, dead, dry and fallen wood and other NTFP for their bona fide domestic use. Surplus if any may be sold in an open auction. However, previously existing rights of members or non-members are not to be interfered with.

3.2.3 Joint Forest Management Programme

Based on the experience gained, the HFD adopted the PFM approach for the management of degraded forests in the Shivalik Hills in 1989. Although HFD built dams with improved construction efficiency, it was observed that the forest staff lacked the capacity to support the development of the local HRMS, as they were

not trained in the operational procedures of the Programme. The cooperation between the forest staff and the village communities was not as effective as it was in the pilot village of Sukhomajri. The problems of dam breaches, institution building, villager's commitment to protection and regeneration of forests, poor distribution of resources etc. emerged and it was getting difficult for the forest staff to keep pace with the new challenges.

It was, therefore, felt that unless the Department overcomes these limitations and the communities form management societies, JFM Programme will not be implemented and watersheds will not rehabilitate. These problems were discussed in 1989 with outside resource persons and it was decided that HFD needs to be strengthened so that liaison with village communities is streamlined.

3.2.4 JFM Support Programme

In response to the problems of implementing a JFM Programme, TERI undertook a JFM Support Programme in Haryana Shivaliks in July 1990 in collaboration with HFD, with financial support from the Ford Foundation. The Programme sought to facilitate the development of sustainable PFM systems through various institutional, training, research, policy and legal mechanisms with peoples' (including women) association and participation in the management and sustainable development of forest resources of the State jointly with the HFD. The primary objective of the Programme was to devise mechanisms and evolve plans that enabled systematic integration of PFM within the policies, programmes, procedures and operations of the HFD and at the same time secure willing participation of the local communities to protect and manage these forests for their sustainable development, increased biomass production, maintenance of biological diversity and conservation of the environment.

While the Programme sought to facilitate the development of sustainable PFM systems through various institutional, training, policy and legal strategies and mechanisms with people's association and participation (including women), constant research and case studies were undertaken on various aspects of JFM. A critical assessment of the impacts of various strategies and mechanisms adopted, on sustainable production, regeneration and ecology of the area and to evolve the most suitable management options to promote community participation, was made in 1994.

3.3 Social Forestry Project

It was in the above background that a Social Forestry Project funded by the World Bank was implemented by the HFD from 1982-1990. Under the Project, the Department has been able to convert a good proportion of *Panchayat* lands into village forests. The practice adopted was to obtain a resolution from the village *Panchayat* to the effect that a given area of land would be handed over to the Forest Department for tree planting purposes, the right over land continuing to remain with the *Panchayat*. The *Panchayat* also had a share in the harvested wood. Though the *Panchayats* were to manage and protect the forests till maturity, most of them did not abide by this commitment. The reason probably was the low level of institution building and poor community participation. This called for a strong effort at Institution building and community organization and this is precisely the strategy of the Haryana Community Forestry Project.

4. HARYANA COMMUNITY FORESTRY PROJECT

4.1 Project Background

With the experience gained by the Department in the Social Forestry Project and given the potential of raising plantations on village common lands, a new project entitled "Afforestation of Wastelands and Agro-forestry", as a continuation of the Social Forestry Project was submitted to the Government of India **(GoI)** for International funding.

The Project proposal was appraised by a Project Identification Mission fielded by the European Union **(EU)** in May 1995. After extensive field visits and examination of the documents, the Mission prepared a new community based "Haryana Community Forestry Project" (HCFP) which was finalised following a series of meetings regarding its technical and administrative provisions. A Financing Agreement **(FA)** between the European Commission (**EC)** and GoI was signed on January 24, 1997.

The total cost of the project is estimated at Euro 30.10 million, with the EC having committed a grant of Euro 23.30 million, the financial commitment of the GoH being of the order of Euro 6.80 million. Using actual exchange rates during the course of project implementation, the respective contributions of EC and GoH stand at approximately Rs. 1,200 million and Rs. 340 million, respectively.

The project became officially operational on November 30, 1998 and would be implemented through June 30, 2008 – the end date for implementation of the EU commitment.

4.2 Project Area

The project area comprises three of the four agro-climatic zones of the State, i.e. the Shivalik Hills and foothills in the north; Central Plain; and Arid Sandy Plains (Desert) in the west, southwest and the south; the zone excluded being the Aravalli Hills. Desertified areas abound in parts of Sirsa, Fatehabad, Hisar and the selected areas of Bhiwani, Mahendragarh, Jhajjar and Rewari districts.

The selected agro-climatic zones have sizeable blocks of common land owned either by the village *Panchayats* or groups of families in villages to whom tenurial rights are inheritable (*Shamlat* land), and administratively controlled by the Revenue Department/Block Development Officer **(BDO)**.

The total area of common land in the project area is about 125,000 ha, of which 39,000 ha are cultivable and the balance is uncultivable. It is only the uncultivable land that is available for tree plantations and some of this area has already been planted by the HFD under the Social Forestry Programme or by the State Government through various centrally sponsored schemes. Good proportions of *Shamlat* lands have restricted access for obvious reasons, while *Panchayat* land, on the other hand, is the common property of the entire village, on whose behalf it is held in trust by the elected *Panchayat*. Cultivable lands are generally leased out to private individuals on an annual basis through public auction presided over

by the BDO. Lease rent is directly proportional to land capability and prime land may fetch as much as Rs. 10,000 to Rs. 12,000 per acre.

Panchayat lands unfit for cultivation are either used as pastures or for stacking cow-dung, though a major portion of this land is under encroachment.

4.3 Objectives

The overall objectives of the project are to build up the capacity of rural communities to improve the natural environment and maintain land fertility through sustainable management of natural resources undertaken in a participatory manner, with the expected results of increased wood production, improved productivity of common and private lands and greater involvement of project stakeholders, including women, in planning and management of Common Property Resources **(CPRs)**. The project purposes (immediate objectives) are:

- Improved capabilities of village communities to undertake a process of self-directed community development, especially through greater involvement and empowerment of disadvantaged groups in village decision-making;

- Improved and sustainable management of CPRs that have previously been degraded by loss of biomass and topsoil and/or by moving sand;

- Increase in the number of sustainable forestry and agro-forestry interventions in farming systems;

- Increase in the number of market-led, environment friendly and energy efficient technologies introduced into villages.

4.4 Operational Areas

Of the 3,000 inhabited villages in the project area, the project is being implemented in 338 villages of 37 Community Development Blocks (CDBs) in 11 districts and five forest divisions, with an estimated population of 700,000 (based on 2001 census), a total area of approximately 350,000 ha and a total common land area of around 40,000 ha. The districts, number of CDBs and villages included in the project are given in **Table 2**.

Table 2: Districts, Number of Community Development Blocks and Villages included in the Haryana Community Forestry Project

District	No. of CDBs	No. of Villages
North		
Panchkula	3	35
Ambala	4	45
Yamunanagar	3	38
Kurukshetra	5	21
West		
Sirsa	2	25
Fatehabad	2	14
Hisar	5	26
South West		
Bhiwani	5	74
South		
Mahendragarh	2	29
Rewari	3	23
Jhajjar	3	08
Total	***37***	***338***

The project intervention zone excludes the areas covered under the Aravalli Project and districts with sodic and salt affected areas. **Table 3** indicates the project intervention areas of HCFP, down to villages.

Table 3: Project Intervention Areas of Haryana Community Forestry Project

Project Zone	Project Division	*District*	*C. D. Block*	*Villages*
Shivalik Hills, Foothills and the Central Plains	**Ambala**	**Panchkula**	**Barwala**	Bhareli
				Shamtoo
				Dhandardu
				Khairwali
				Bharauli
				Kaimbwala
				Naggal
				Jaloli
				Tibbi
				Bunga
				Bailwali
				Rehorh
				Khatauli
				Bhood
				Sukh Dars
			Raipur Rani	Hangola
				Tabar
				Natwal
				Hangoli
				Kheri
				Haripur
				Garhi
				Dandlawar
				Pyarewala
				Tharwa
				Mandapa Badhaur
				Jaspur
			Morni	Mirpur
				Dhandion
				Toron
				Banswala
				Bhediwala
				Rana
				Mawas
				Baloti
		Ambala	**Barara**	Bhudian
				Holi
				Ganganpur
				Zafarpur
				Binjalpur
				Aliaspur
				Sardheri
				Hema Mahjara
			Shahzadpur	Nagla Jattan
				Korwa Kurd
				Tasrauli
				Rasidpur
				Ghani Khera
				Ghazipur
				Behloli
				Fategarh
				Handi Khera
				Sherpur
				Dhanana
				Khanpur Brahman
			Naraingarh	Baktuha
				Dehar
				Nagla Rajputan
				Shahpur
				Chandsauli
				Budhakhera
				Laha
				Khanpur Rajputana
				Ujjal Marjri
				Kohra
				Badhouli
				Sambhalwa
				Batora

Project Zone	Project Division	District	C.D. Block	Villages
Shivalik Hills, Foothills and the Central Plains	Ambala	Ambala	Saha	Takurpura
				Gokargarh
				Paplotha
				Kakar Kun
				Taprian
				Nurhad
				Sambhalkha
				Khera
				Tamnauli
				Gola
				Ramgarh
				Talheri Gujran
	Kurukshetra	Yamunanagar	Chhachhrauli	Bhagpat
				Shahzadwala
				Kansli
				Khilanwala
				Darpur
				Jatanwala
				Ibrahimpur
				Salimpur
				Malikpur Bangar
				Baniawala
				Meghuwala
				Bhangera
				Bhangeri
			Bilaspur	Ranjeetpur
				Nagli
				Bhagwanpur
				Sultanpur
				Shergarh
				Battuwala
				Gadwali
				Rampur Harian
				Sandhya
				Painsal
				Haibatpur
				Machhrauli
				Kathgarh
				Sarami
				Lalhari Kalan
				Rampur Gainda
				Paniwala
			Sadhoura	Bakala
				Rampur Rariyan
				Thaska
				Pammuwala
				Jhanda
				Nanheri
				Nawagaon
				Bholiwala
		Kurukshetra	Shahbad	Dangali
				Jandheri
				Deeg
				Gumti
				Karindhwa
				Chhapra/Chhapri
			Ladwa	Makarpur
				Bodla
				Bir Kheiri
				Lohara
				Gudah
			Babain	Sujri, Sujra, Haripura
				Bir Kalwa
				Ramsaran Majra
				Bhagwanpur
			Thanesar	Kanipala
				Khizarpura
				Barana
				Ghiradsi
			Pehowa	Diwana
				Jakhwala

Project Zone	Project Division	*District*	*C.D. Block*	*Villages*
Arid Sandy Plains	**Hisar**	**Hisar**	**Hisar – II**	Banda Heri
				Gawar
				Rawalwas Kalan
				Sarsana
				Basra
				Gorchi
				Balsamand
				Burak
				Neoli Kalan
				Chaudhariwas
				Bherian
				Dhobhi
				Matersham
				Sundawas
				Rawat Khera
				Chirod
			Hisar - I	Nalwa
				Mirkan
				Talwandi Rukka
			Adampur	Ghursal
				Bagla
				Chudhar Wali
				Telanwali/Kutia Kheri
				Sadalpur
			Agroha	Sabarwas
			Barwala	Khedar
		Fatehbad	**Batthu Kalan**	Banawali
				Dhingsara
				Khirdan
				Mehuwala
				Shekhupur Dharauli
				Dhand
				Pili Mandori
				Bodiwala
				Sirdhan
			Fatehabad	Badopal
				Kara Kheri
				Chindhar
				Kumharia
				Khairatikhara
		Sirsa	**Ellenabad**	Dhani Sheran
				Khari Surera
				Mithi Surera
				Podka
				Bhuratwala
				Umedpura
				Chilkani
				Nimla
				Mithanpur
				Karamsana
			Nathusari Chopta	Bakarianwali
				Rupana Darda
				Nirwan
				Tarkanwali
				Makho Sorani
				Kagdana
				Shakar Mandhori
				Rupawas
				Nahrana
				Chaharwala
				Gigorani
				Jamal
				Gudia Khera
				Jogiwala
				Gosaiana

Project Zone	Project Division	*District*	*C.D. Block*	*Villages*
Arid Sandy Plains	**Bhiwani**	**Bhiwani**	**Bhiwani**	Pahladgarh
				Dhana Ladanpur
				Dhana Narsan
				Dhirana Kalan
				Nimriwali
				Asalwas Dubia
				Ajitpura
				Aswalwas Merheta
				Rajgarh
				Rupgarh
			Loharu	Kurdal
				Alaudinpur
				Kharkheri
				Jhanjhara Toda/Sheoran
				Gignaw
				Gothra
				Singhani
				Dhigawa Shamyan
				Mandholi Kalan
				Gokalpur
				Kasni Kalan
				Bidnoi
				Sirsi
				Paju
				Pahari
				Jhumpa Kalan
				Baralu
				Serla
				Bardhu Chaina
				Fartia Kehar
				Bithan
				Shaharyapur
				Nangal
				Gopalwas
				Sudhiwas
				Surpura Kalan
			Siwani	Morka
				Garwa
				Mithi
				Mandoli Khurd
				Siwatch
				Jhumpa Kalan
				Ghangala
				Dhani Silanwali
				Mohila
				Gadwha
				Lilas
				Naloi
				Dhani Bhakhra
				Gurera
				Budhseli
				Matani
				Khera
				Isarwal
				Devawas
				Bhera
			Tosham	Bhariwas
				Badola
				Busan
				Salewala
				Hasan
				Bajina
				Seral
				Dinod
				Kohar
				Dariyapur
				Patodi
			Badhra	Khorda
				Kari Dharni
				Arya Nagar (Govindpura)
				Chandwas
				Nandha
				Badrai
				Berla

Project Zone	Project Division	*District*	*C.D. Block*	*Villages*
Arid Sandy Plains	**Jatusana**	**Rewari**	**Jatusana**	Parkhotampur
				Baldhan Kalan
				Badroli
				Lisan
				GothraTappa Dhina
				Didoli
				Masit
				Berli Khurd
				Haluhera
				Shadipur
			Nahar	Shyamnagar
				Bhurtala
				Lula Ahir
				Bawa
				Lookhi
				Surehli
				Bishoa
				Dharoli
				Rattanthai
				Zahadpur Tapa Kosli
				Nathera
			Khol	Siha
				Mundi
		Mahendragarh	**Kanina**	Sundrah
				Bewal
				Bhalkhi
				Mundain
				Kheri
				Dhanunda
				Kharkhara Was
				Gudha
				Bhojawas
				Kotia
				Sihor
				Bharaf
				Chelawas
				Karira
			Mahendragarh	Mandola
				Jerpur
				Barda
				Nangal Mala
				Digrota
				Madhogarh
				Khudana
				Garhi
				Pali
				Balana
				Dalanwas
				Kherkhi
				Kothal Khurd
				Palh
				Beri
		Jhajjar	**Matanhail**	Matanhail
				Ruriawas
				Sasroli
				Dhalanwas
			Salhawas	Khanpur Khurd
				Salhawas
			Jhajjar	Kirdodh
				Utloda
Total	***05***	***11***	***37***	***338***

4.5 Organisation

As already mentioned earlier a participatory approach has been envisaged for implementation of HCFP, which is a marked deviation from the traditional system of forest management. The underlying philosophy of this approach is that the stakeholders will contribute positively towards the management of the forest, if they are a party to the process of objective setting, planning, decision-making and its execution. This is the fundamental principle of HCFP.

Towards meeting this end, Government of Haryana has set up a functionally autonomous Project Management Unit with headquarters at Panchkula within the Haryana Forest Department, which has the overall responsibility for project implementation. The State Government has also appointed a Steering Committee to co-ordinate the development of the project and to provide guidance on policy issues, besides approving the financial statements and auditors' reports, progress reports, work plans and budgets.

In order to ensure proper co-ordination between the project and other line departments and state agencies/programmes, a State Level Policy Review Committee and District Level Implementation Committees have been constituted to meet at least once and twice a year, respectively. For co-ordination at the local level, the project has worked out mechanisms for enlisting cooperation of BDO, village extension workers etc.

HCFP is headed by a National Project Director **(PD)**, supported by an expatriate Technical Assistance **(TA)** Project Manager (Team Leader of the TA Team) and Deputy Conservator of Forests **(DCF)** at the headquarters. The Project Director is assisted by three Conservators of Forests **(CF)**, namely (1) Conservator of Forests, Monitoring, Evaluation, Information, Training and Communication (M&E), with headquarters at Panchkula, (2) Conservator of Forests, Western Circle, at Hisar, and (3) Conservator of Forests, Northern Circle, at Ambala. CF (M&E) is responsible for monitoring and evaluation, training, publicity and extension and the other two Conservators for carrying out field operations in Northern and Western Circles. The three Conservators are supported by specialist field staff like Divisional Forest Officers **(DFOs)**/Assistant Conservator of Forests **(ACF)** (10 Nos.), Sub-Divisional Forest Officers **(SDFOs)** (17 Nos.), Deputy Rangers **(DRs)**/Foresters (51), and Forest Guards **(FGs)** (235), who implement the project in 337 target villages with active community participation in all phases from appraisal, micro-planning and micro-project formulation to planning, implementation, monitoring and maintenance. Besides, all the offices of the project are provided with the necessary ministerial and other technical supporting staff for their efficient working.

4.5.1 Project Management Unit

Within the HCFP, HFD has established a functionally autonomous Project Management Unit **(PMU)**, with the National Project Director, the TA Project Manager, the Conservator of Forests (M&E) and the DFO (HQ) as members.

The PMU established by the HFD has delegated financial, administrative and technical responsibilities for implementation of the project to HCFP, once the

Steering Committee and the EU have approved the Overall and Annual Work Plan.

The project is sufficiently staffed with counterpart staff strength of 557 provided by the GoH to handle all its technical, administrative, and financial duties. For smooth implementation of the project, the PMU directly contracts local consultants, supplementary staff and NGOs on a short-term basis, as required.

Under the technical cooperation component of the project, the PMU is supported by 163½ man months of expatriate and 142 man months of national TA personnel. TA is provided by the consultancy firm Agriconsulting (Italy), in association with Agrisystems (UK) and Agriculture Finance Corporation **(AFC)** (India).

4.6 Stakeholders

Though the local community as a whole is the primary stakeholder, special attention would be paid to the needs and perspectives of the disadvantaged groups within the communities, namely, women, scheduled castes, landless and resource poor farmers. The project stakeholders at the community level are:

- Women in general and women heads of households in particular who have a stake in biomass production for fuel and fodder;
- Scheduled castes that generally are landless and depend on traditionally low paid occupation;
- Households dependent on degraded lands and sand dune areas;
- Cultivators who are willing to take up poplar plantations, preference being given to marginal and small farmers;
- All potential and actual resident users of common lands;
- Communities living in degraded and drought prone areas bordering and within Shivalik Hills.

4.7 Project Components

The various major project components that are aimed at reversing the process of degradation and to meet the diverse needs of the community are as follows: These are discussed in subsequent chapters.

- **Community Development** including community capacity building, income generating activities for self-employment through micro-enterprises, energy efficient technologies and other alternative sources of energy.
- **Afforestation** of village common lands, institutional lands, moving sand dunes, private lands, including farm forestry and poplar planting, and establishment of kitchen gardens.
- **Water Resource Management** through construction of 19 water harvesting dams for development of micro-watersheds.

5. PROJECT LOGICAL FRAMEWORK

5.1 First Logframe

The original Logical Framework Planning Matrix **(LFM)** for the project, as outlined in the Overall Work Plan **(OWP)**, has defined three Overall Objectives (wider objectives), four Project Purposes (immediate objectives) and twelve Project Results (outputs), as follows.

Overall Objectives

1. Rural population in 10 districts assisted to improve the natural environment;

2. Rural population in 10 districts assisted to preserve land fertility;

3. Rural population in 10 districts assisted to achieve sustainable management of natural resources.

Project Purposes

1. Improved capabilities of village communities to undertake a process of self-directed community development, especially through greater involvement and empowerment of disadvantaged groups in village decision making;

2. Improved and sustainable management of common property resources that had previously been degraded by loss of biomass, by loss of topsoil and/or by moving sands;

3. Increase in the number of sustainable forestry and agro-forestry interventions in farming systems;

4. Increase in the number of market-led, environmentally appropriate and energy efficient technologies introduced into villages.

Key Results

1. Disadvantaged groups, including women, scheduled castes, landless and marginal/small farmers, are empowered and better equipped to be involved in village decision making and have enhanced capabilities to sustain development activities unassisted;

2. Village organisations, such as Village Resource Management Committee **(VRMC)**, HRMS and Farm Forestry Association, are developed with capabilities in sustainable management of village forest/ rural resources;

3. Arid and semi-arid areas affected by sand dunes and wind erosion are rehabilitated and are productive again;

4. *Panchayat*, *shamlat* and institutional lands are rehabilitated and are productive again;

5. Micro-watersheds in the Shivalik Hills are managed to provide water supplies for various users;

6. Wastelands within villages are converted into community tree groves for amenity purposes;

7. Multi-species agro-forestry cropping patterns are established on marginal and small farms;

8. Poplar plantations are established on prime agricultural land;

9. Households establish improved homestead plots and/ or kitchen gardens;

10. Alternative income generating micro-projects are established by disadvantaged groups.

11. Energy efficient cooking stoves are introduced in villages;

12. Energy efficient crematoria introduced.

Key Project Inputs

1. Strengthening the capacity of staff in Haryana Forestry Department to better service the community;

2. Strengthening the rural infrastructure base to the benefit of the community in target villages;

3. Training provided for the main project stakeholders;

4. Funds provided by the main donors.

The original Project Logical Framework Matrix is given in **Table 4**.

5.2 Revised Logframe

The Original Logical Framework Planning Matrix was revised during the EU Mid-term Review in October 2003, with one Overall Objective (Wider Objective), one Project Purpose (Immediate Objective) and four Project Results (Outputs). It has since been revised every year. Its objective, purpose and expected results are outlined below.

Overall Objective (5-10 years after End of Project)

To improve the natural environment of Haryana State through sustainable management of natural resources

Project Purpose

To develop a process for sustainable management of natural resources through active participation of village communities in eleven districts of Haryana

Project Results

1. Improved project management and institutional capacity for participatory community forestry development within Haryana Forest Department;

2. Improved capabilities of village communities to manage community forestry activities within their *Panchayats*;

3. Common Property Resources improved in eleven districts;

4. Agro-forestry and farm forestry practices enhanced on private land in eleven districts.

The Revised Project Logical Framework Matrix (as revised in June 2006) is given in **Table 5**, along with the project achievements against all objectively verifiable indicators.

Table 4: Original Project Logical Framework Matrix

Intervention	Objectively Verifiable Indicators (OVIs)	Sources of Verification (SoV)	Assumptions
Overall Objectives: 1.1 Rural population in 10 districts assisted to improve the natural environment 1.2 Rural population in 10 districts assisted to preserve land fertility 1.3 Rural population in 10 districts assisted to achieve sustainable management of natural resources	• By year 2020, at least 27,000 ha of natural resources with stable or improving condition in 300 village communities within the project area	• Vegetation cover monitoring by remote sensing study • Soil condition/ fertility monitoring study • Groundwater monitoring study in drought prone area • Hydrological and sediment monitoring in hilly micro-watersheds	• Monitoring studies continue after completion of the project
Project Purposes: 2.1 Improved capabilities of village communities to undertake a process of self-directed community development, especially through greater involvement and empowerment of disadvantaged groups in village decision making	• By End of Project (EOP) 300 disadvantaged communities are rated good in the '9' (nine) community capabilities (suitable for developing a community sustainability/ maturity index and identified in a Community Forestry Development Process manual)	• VRMC records • Community micro-project monitoring reports • Community impact assessment reports • External monitoring by NGO	• Disadvantaged groups have access to and are willing to participate in village decision making
2.2 Improved and sustainable management of common property resources that had previously been degraded by loss of biomass, by loss of topsoil and/or by moving sands	• By EOP, 300 disadvantaged communities assisted to rehabilitate at least 17,000 ha degraded land areas through improving production and income from common property resources	• VRMC records • Community micro-project monitoring reports • Community impact assessment reports • External monitoring by technical consultants	• Degraded lands are made available for tree planting in >10 ha blocks • Sufficient areas of untreated common lands are available
2.3 Increase in the number of sustainable forestry and agro-forestry interventions in farming systems	• By EOP, members of 300 farmers associations/groups assisted through at least 60,000 new or improved sustainable individual farm forestry or agro-forestry interventions	• VRMC records • Community micro-project monitoring reports • Community impact assessment reports • External monitoring by technical consultants	• Marginal and small farmers willing to take up tree planting
2.4 Increase in the number of market-led, environmentally appropriate and energy efficient technologies introduced into villages	• By EOP, communities in 100 village clusters assisted to establish new or improved energy efficient technologies throughout the project area	• VRMC records • Community micro-project monitoring reports • Community impact assessment reports • External monitoring by NGO	• Socially acceptable technologies are available, enhancing potential for widespread adoption

Intervention	Objectively Verifiable Indicators (OVIs)	Sources of Verification (SoV)	Assumptions
Key Results: 3.1 Disadvantaged groups, including women, scheduled castes, landless and marginal/small farmers, are empowered and better equipped to be involved in village decision making and have enhanced capabilities to sustain development activities unassisted	3.1.1 By EOP, 300 communities have VRMC where more than 25% of members are women 3.1.2 By EOP, 300 communities have VRMC with at least three members from scheduled castes or landless groups 3.1.3 By EOP, number of new income generating micro-projects managed by disadvantaged groups is increasing 3.1.4 By EOP, number of person days hired from amongst disadvantaged groups by the VRMC is increasing 3.1.5 By EOP, 300 communities have at least one VRMC official from disadvantaged groups	• VRMC records • Community micro-project monitoring reports • Community impact assessment reports • External monitoring by NGO	• Disadvantaged groups integrated into VRMC • VRMC willing to take on role of natural resource manager
3.2 Village organizations, such as VRMC, HRMS and FFA, are developed with capabilities in sustainable management of village forest/ rural resources	3.2.1 By the EOP, 300 communities with good capability to gather and assess information on community resources 3.2.2 By the EOP, 300 communities with good capability to prepare micro-plans concerning use and management of village resources 3.2.3 By the EOP, 300 communities with good capability to plan and prepare proposals/ feasibility studies for micro-projects 3.2.4 By the EOP, 300 communities with good capability to solve conflicts of interest within their community 3.2.5 By the EOP, 300 communities with good capability to access and mobilise resources 3.2.6 By the EOP, 300 communities with good capability to implement protection and rehabilitation of common property resources 3.2.7 By the EOP, 300 communities with good capability to undertake new and improved market-driven rural enterprises 3.2.8 By the EOP, 300 communities with good capability to monitor micro-projects and to adjust direction as needed 3.2.9 By the EOP, 300 communities with good capability to evaluate the impact of village micro-plans and to organise re-planning as needed 3.2.10 By the EOP, 300 VRMC funds are in place and have a revolving capital of at least 10,000,000 Rupees	• VRMC records • Community micro-project monitoring reports • Community impact assessment reports • External monitoring by NGO	• Other line agencies willing to co-operate with the project • Forestry staff fully integrated into community for participatory development activities

Intervention	Objectively Verifiable Indicators (OVIs)	Sources of Verification (SoV)	Assumptions
Key Results (continued)			
3.3 Arid and semi-arid areas affected by sand dunes and wind erosion are rehabilitated and are productive again	3.3.1 By the EOP, 9300 ha of sand dune affected areas on common (and adjacent private) lands stabilised, benefiting disadvantaged village communities in 6 districts	• VRMC records • Community micro-project monitoring reports • Community impact assessment reports • External monitoring by NGO	• Common lands and private sand dunes can be managed jointly
3.4 *Panchayat, Shamlat* and institutional lands are rehabilitated and are productive again	3.4.1 By the EOP, 7400 ha of *Panchayat, Shamlat* and institutional land rehabilitated, benefiting disadvantaged village communities in 10 districts	Ditto	• *Shamlat* land is available for common property resource management projects
3.5 Micro-watersheds in the Shivalik Hills are managed to provide water supplies for various users	3.5.1 By the EOP, 18 micro-watersheds protected (or rehabilitated) and with new water harvesting dams, benefiting 18 disadvantaged village communities in 3 districts	Ditto	
3.6 Wastelands within villages are converted into community tree groves for amenity purposes	3.6.1 By the EOP, 200 ha of tree groves established, providing environmental benefits to 300 disadvantaged village communities in 10 districts	• VRMC records • Community micro-project monitoring reports • Community impact assessment reports • External monitoring by NGO and technical consultants	
3.7 Multi-species agro-forestry cropping patterns are established on marginal and small farms	3.7.1 By the EOP, 5300 ha of marginal and small farms diversified through multi-species forestry/ agro-forestry treatments benefiting at least 25,000 households in 10 districts	Ditto	• Farmers willing to plant and protect trees
3.8 Poplar plantations are established on prime agricultural land	3.8.1 By the EOP, 5000 ha on prime agricultural land diversified through establishment of poplar plantations, benefiting at least 1000 households in 4 districts	Ditto	
3.9 Households establish improved homestead plots and/or kitchen gardens	3.9.1 By the EOP, 180 ha of kitchen gardens/ homestead plots diversified or intensified, benefiting at least 35,000 households in 10 districts	Ditto	• Villagers willing to establish/ improve kitchen gardens/ homestead plots

Intervention	Objectively Verifiable Indicators (OVIs)	Sources of Verification (SoV)	Assumptions
Key Results (Continued)			
3.10 Alternative income generating micro-projects are established by disadvantaged groups	3.10.1 By EOP, 100 disadvantaged groups assisted to design, operate and sustain rural enterprises based on production, processing and sale of locally available natural resources in 10 districts 3.10.2 By EOP, 100 rural enterprise savings groups formed and savings of 25,000,000 Rupees mobilised 3.10.3 By EOP, *mahila* nurseries are established and producing seedlings every year, benefiting 100 women's groups in 10 districts	• VRMC records • Community micro-project monitoring reports • Community impact assessment reports • Group bank account statements • External monitoring by NGO	• Markets for income generating opportunities are available • Possible to identify entrepreneurs and labour • Rural finance facilities are locally available
3.11 Energy efficient cooking stoves are introduced in villages	3.11.1 By EOP, 50 disadvantaged groups assisted to design, field test, produce and market energy efficient cooking stoves in 10 districts 3.11.2 By EOP, 100 villages clusters have adopted energy efficient cooking stoves in at least 5% of households	Ditto	• Study identifies socially acceptable, technically sound and economically viable technologies
3.12 Energy efficient crematoria introduced.	3.12.1 By EOP, 10 crematoria have adopted improved energy efficient designs in ten districts	Ditto	Ditto
Key Project Inputs:			
4.1 Strengthening the capacity of staff in the Haryana Forestry Department to better service the community	4.1.1 By the End of Year 2, 13 Forestry Department Sub-Divisional teams are capable and willing to facilitate participatory community forestry planning, monitoring and evaluation activities unassisted 4.1.2 By EOP, staff deployment has followed the annual recruitment plan in all years of the project	• Performance reports • Human Resources data base	
4.2 Strengthening the rural infrastructure base to the benefit of the community in target villages	4.2.1 By the EOP, 300 *Chetna Kendras* have been constructed in 10 districts, and are being regularly used by the community for VRMC meeting	• Completion and hand over reports	
4.3 Training is provided for the main project stakeholders	4.3.1 By EOP, staff and beneficiary training has been completed according to the Training Needs Assessment and Annual Training Plans in each year	• Training reports	
4.4 Funds are provided by the main donors	4.4.1 By EOP, fund allocations and releases by the two main donors have been in line with the annual work and financing plans and have arrived in time in the project bank accounts in each year of the project	• Quarterly financial statements	

Table 5: Revised Logical Framework of Haryana Community Forestry Project, along with Achievements

Intervention Logic	Objectively Verifiable Indicators (OVIs)	Source of Verification	Assumptions	Achievements
Overall Objective (5-10 years after End of Project) To improve the natural environment of Haryana State through sustainable management of the natural resources	• The Haryana Forest Department (FD) operates throughout the state according to the new policies, systems and organization structures developed by Haryana Community Forestry Project (HCFP) • In 20% of the village Panchayats in Haryana Village Resource Management Committees (VRMCs) or similar village institutions under any other name are in operation and have regular contact with the Forest Department • Tree cover increased to 30% of common land in Haryana	• Government of Haryana (GoH) policy papers • GoH has adjusted Forest Manual for FD staff and modified the objectives of the FD • Monitoring reports • Associations of VRMCs • Satellite images • Forest Training Centre in Pinjore has included Community Forestry in its curriculum		• HCFP policies adopted in JBIC project, also being proposed for new Resource Management and Livelihood Project to succeed HCFP • HCFP experience incorporated in new Haryana Forest Policy • Module on participatory approaches included in training of new FD staff • VRMCs or similar village institutions under other name exist in 14% of Haryana villages • Tree cover on common land in Haryana not ascertained (but definitely less than 30%)
Project Purpose To develop a process for sustainable management of natural resources through active participation of village communities in eleven districts of Haryana	• HCFP has developed new policies, systems and organization structures on participatory community forestry • HCFP is active in 11 districts and 330 villages • All HCFP forestry staff has been trained • All VRMCs have been offered the full training package • VRMCs are active in 75% of the villages • In 25% of the villages VRMCs act autonomously • Self-Help Groups (SHGs) are active in 100 villages • In 25% of SHG villages SHGs act autonomously • In project villages tree cover has increased to an average of 30% of common land	• HCFP policy papers • VRMC policy papers • Project monitoring reports • Special studies	• No major changes in staffing in the project • Cooperation with other GoH departments, projects and NGOs is good • Additional funds will be found for non-forestry activities by VRMCs • Climatic conditions permit planting • Extreme weather conditions and fires do not wipe out large tracts of plantations	• New policies/approaches developed as outlined in Field Operations Manual and other manuals • HCFP active in 11 districts and 338 villages • All HCFP forestry staff trained • All VRMCs fully trained including refresher training • VRMCs active in 93% of villages (rated “Good” or “Moderate”) • VRMCs act autonomously in 24% of villages (rated overall “Good”) • SHGs active in 101 villages • SHGs act autonomously in more than 50% of the SHG villages • Tree cover has reached average 30% of common land in project villages

Intervention Logic	Objectively Verifiable Indicators (OVIs)	Source of Verification	Assumptions	Achievements
Intervention Logic	**Objectively Verifiable Indicators (OVIs)**	**Source of Verification**	**Assumptions**	**Achievements**
Project Results • Improved project management and institutional capacity for participatory community forestry development within Haryana Forest Department	• Participatory systems and procedures for effective and efficient Community Forestry Development (CFD) have been formulated and implemented • Organisational structures are in place in 11 districts • Manual developed on the management of natural resource on common lands by VRMCs • 300 FD staff are trained • Forestry training centres in Haryana have internalised CFD • Monitoring and evaluation system for CFD is in place	• GoH agrees to integrate CFD in the FD service • GoH agrees to continue the activities of HCFP in the ten districts • GoH agrees to continue with training of staff in training centres • M&E system integrated in FD	• GoH will be able to generate enough funds to introduce CFD through the state • GoH will be able to reorganise the FD in line with CFD principles	• Participatory systems/procedures for CFD formulated and implemented • Organisational structures in place in 11 districts • Manuals prepared for common land natural resource management by VRMCs • 300 FD staff trained • CFD internalised in staff training at forestry training centres • CFD monitoring system in place
2. Improved capabilities of village communities to manage community forestry activities within their Panchayats	• 330 VRMCs are established, trained and in operation • 330 VRMCs have members of all societies in the village • 330 VRMCs have undertaken entry point micro-projects through self-help with project assistance • 330 villages have prepared overall natural resource management plan and are pursuing this • 100 villages have women Self-Help Groups (SHGs) • 150 villages have adopted fuel-efficient cooking stoves or crematoria • In 300 villages grass/fodder has been collected from the woodlots • In 150 villages woodlots have been pruned and used for firewood • In 100 villages poles have been produced from woodlot thinning • In 150 villages various NWFP have been collected • In 80 SHG villages vermi-composting is practised • In 60 villages SHGs are taking measures to protect the environment (apart from planting trees)	• VRMC reports • NGO reports • M&E reports • Special TA studies • Manuals on training VRMCs • Manuals on harvesting tree products from common land	• VRMC role is accepted by the village Panchayat • Local politics allows the VMRC to play its role in the village community • VMRC is able to generate funds from outside the project • Sufficient NGOs available to train VRMCs and SHGs	• 337 VRMCs established and trained, out of which 330 VRMCs operative • All VRMCs have representation from all sections of the community • 341 entry point activities done • Village microplans prepared in 335 villages • Women SHGs exist in 101 villages • 155 villages have adopted improved cooking stoves or crematoria • Woodlot grass/fodder collection in 318 villages (currently 261) • Woodlots pruned and used for firewood in 181 villages • Woodlot thinning not yet done, such thinning still premature in most cases • NWFP collected in 199 villages (excluding grass & firewood) • Vermi-composting practised in 94 SHG villages • SHGs have taken measures to protect environment in 94 villages (apart from planting trees and just

Intervention Logic	Objectively Verifiable Indicators (OVIs)	Source of Verification	Assumptions	Achievements
				participating in environment rallies)
3. Common property resources improved in eleven districts	• In 330 villages at least 9500 ha of common land planted • At least 75% of villages with woodlots have tree survival of ≥80% in the North and ≥60% in the Western zone • New water harvesting dams and reservoirs have been constructed in 19 villages • Old reservoirs rehabilitated in 2 villages • Watersheds in these 21 villages are protected • 27 degraded johads rehabilitated in Western zone and used by communities	• Reports on common land use (GPS surveys in sample village) • Survival monitoring reports • Evaluation reports on dams and johads • M&E reports • Special TA studies	• Climatic conditions permit planting • Extreme weather conditions and fires do not wipe out large tracts of plantations • Sufficient (at least 10 ha per village) common land available in the eleven districts • Villagers are able to protect the 21 watersheds with disturbances by outside forces kept at a minimum	• 10135.75 ha of common land planted in 328 villages • 281 villages, 88% of villages with woodlots, have woodlot survival of ≥80% in the Northern and ≥60% in the Western zone • Water harvesting dams constructed in 19 villages • Old reservoirs of water harvesting dams rehabilitated in 2 villages • Watersheds in these 21 villages are protected • Degraded johads rehabilitated in 28 villages and used by communities
4. Agroforestry and farm forestry practices enhanced on private land in eleven districts	• 2000 farmers have adopted sand dune fixation on 3150 ha • 1000 farmers have adopted agroforestry of the modified sand dune fixation model (1750 ha) • 40,000 farmers have adopted agroforestry and farm forestry on 10,500 ha of rainfed agriculture land • 6000 farmers have adopted new poplar clones on 6900 ha of agriculture land • 115,000 households have received planting material for kitchen gardening • Average tree survival rates on private land exceeds 50% in Northern and 30% in Western zone	• M&E reports from VRMCs and FD • Special studies by TA • Survival monitoring reports	• Climatic conditions permit planting • Extreme weather conditions and fires do not wipe out large tracts of plantations • Access to market • Market prices for trees are competitive	• 3743 farmers have afforested sand dunes under either the standard or the modified model, total area planted being 4928 ha (number of farmers given above includes some double-counting of farmers who planted in more than one year) • More than 40,000 farmers (most of them planting several years) have adopted farm forestry of 10525.5 ha • 7230 farmers have planted poplar on 6944.44 ha (number of farmers given above includes some double-counting of farmers who planted in more than one year) • 123,545 households have received seedlings for kitchen gardens • Average tree survival on private land is 54% in the Northern and 44.4% in

Intervention Logic	Objectively Verifiable Indicators (OVIs)	Source of Verification	Assumptions	Achievements
				the Western zone

Project Activities	Means	Costs (Euro)			Assumptions	Achievements
1. Capacity Development at Forest Department • Develop the methodology for participatory community forestry • Prepare manuals and guidelines for CFD • Carry out special studies and surveys to influence policy and/or decision makers • Train 300 FD staff to adjust their knowledge, attitude and practice (KAP) • Train a cadre of 20 trainers in Participatory Community Forestry Development (PCFD) • Carry out study tours with key project staff • Establish an effective awareness, publicity and communication system for promoting PCFD • Establish criteria to select villages that take part in PCFD • Establish procedures for nursery and plantation development • Establish procedures for computerised accounting system • Establish procedures for monitoring and evaluation of the project activities • Establish procedures for GPS mapping of plantations • Establish procedures for coordination/linkages with other development organisations • Establish 26 project field offices • Improve mobility of CFD staff • Procure modern equipment to improve efficiency of the work of the Forest Department staff (computers, GPS) • Create awareness for the need for greater quality control in project activities, rather than emphasis on quantity in targets		EU	GoH	Total	• GoH and HFD appoint staff on time and avoid frequent transfer • GoH and EC provide in time the funds for the project • Land is available for planting of trees • Land is available for the construction of offices • GoH sanctions procurement	• Methodology for participatory community forestry developed • 24 manuals prepared • 35 study reports produced • 300 FD staff members trained • 20 Forest Guards/Foresters trained as trainers of VRMCs • Staff study tours arranged • Wall paintings, newsletters, booklets, pamphlets, videos, radio programmes, puppet shows, etc. produced for awareness raising • Village selection criteria established in Working Paper 1 • Procedures for nurseries and plantations established through separate manuals/guidelines • Computerised accounting system established • Monitoring systems established for project progress and impact • Procedures established for GPS mapping of plantations and dams • Procedures for cooperation with NGOs, etc. established • 26 field offices established • Staff mobility ensured through 5 cars, 11 jeeps and 64 motor cycles • 18 computer stations, 3 GPS units etc. procured • Germination of awareness on importance of quality over quantity amongst project staff
	A. Infrastructure	548,500	0	548,500		
	B. Equipment	521,700	0	521,700		
	C. Supplies & Materials	0	0	0		
	D. Field Operation & Maintenance	0	976,000	976,000		
	E. Link Workers & External Support	163,300	0	163,300		
	F. Studies, Workshops & Meetings	309,700	0	309,700		
	G. Training	112,100	0	112,100		
	H. Staff	0	5,824,000	5,824,000		
	SUB-TOTALS	1,655,300	6,800,000	8,455,300		

Project Activities	Means	Costs (Euro)			Assumptions	Achievements
2. Capacity Development of VRMCs • Recruit NGOs • Establish 330 VRMCs • Complete 330 entry point activities • Organise PRA in 330 villages • Formulate 330 microplans • Recruit 660 link workers • Train around 10000 village stakeholders – VRMC & SHG members, link workers & farmers • Organise study tours for key stakeholders • Construct awareness centres in villages that have common land plantation >10 ha (300 centres) • Implement awareness campaigns in 330 villages • Organise yearly information exchange VRMC workshops • Accelerate functional and financial viability of VRMCs through incentive and fund raising schemes • Form and train 150 women's SHGs • Assist 150 women's SHGs in designing primarily land-based income generating projects, skills training, small matching grants and marketing • Assist 150 villages with adaptation of fuel-efficient cooking stoves or crematoria • Train 70 SHGs in repair and maintenance of the stoves • Establish a participatory record and reporting system • Carry out regular community capability surveys including self-assessment exercise by VRMC members • Carry out continuous tree survival surveys through assessment by village monitoring teams		EU	GoH	Total	• Village Panchayats will accept the arrangements of the project • Common land is made available	• Cooperation with 28 NGOs • 337 VRMCs established, of which 330 VRMCs in current operation • 341 entry point activities carried out (a few villages rejected) • PRA organised in 357 villages (some of them later rejected) • 335 microplans formulated • 670 link workers recruited • 10000 village stakeholders trained • Stakeholder study tours organised • 294 awareness centres constructed • Awareness campaigns arranged in 337 villages • VRMC workshops held annually • Resource management fund paid to 291 VRMCs, woodlot survival incentives paid to 311 VRMCs • 180 SHGs formed and trained (of which 177 women SHGs) • All these SHGs assisted by skills training, matching grants, market support, etc. to take up IGAs • 155 villages covered by improved cooking stoves or crematoria • 65 SHGs trained in repair and maintenance of the stoves • Participatory record and reporting system established • VRMC capability surveys including self-assessments carried out six times; SHG surveys four times • Tree survival surveys carried out each year through village monitoring teams
	A. Infrastructure	601,500	0	601,500		
	B. Equipment	0	0	0		
	C. Supplies & Materials	578,600	0	578,600		
	D. Field Operation & Maintenance	1,035,400	0	1,035,400		
	E. Link Workers & External Support	592,800	0	592,800		
	F. Studies, Workshops & Meetings	176,300	0	176,300		
	G. Training	607,900	0	607,900		
	H. Staff	0	0	0		
	SUB-TOTALS	3,592,500	0	3,592,500		

Project Activities	Means	Costs (Euro)			Assumptions	Achievements
3. Common property resources • Establish 10 permanent mist chambers • Establish 230 temporary nurseries • Afforest 8300 ha of common land to become village woodlots • Afforest 1200 ha of common land to become tree groves (including road side plantations) • Afforest 100 ha of common land to become fixed sand dune • Build 19 water harvesting dams • Rehabilitate 2 dams • Rehabilitate 27 degraded johads		EU	GoH	Total	• Climatic conditions permit planting. • Sufficient common land is made available for tree plantation by participating villages	• 10 permanent mist chambers • 240 temporary nurseries • 8338.4 ha village woodlots • 1347.3 ha tree groves (including road side plantations) • 99.85 ha common land sand dunes afforested • 19 water harvesting dams constructed • Reservoirs of 2 old water harvesting dams rehabilitated • 28 degraded johads rehabilitated
	A. Infrastructure	0	0	0		
	B. Equipment	0	0	0		
	C. Supplies & Materials	1,164,000	0	1,164,000		
	D. Field Operation & Maintenance	6,601,500	0	6,601,500		
	E. Link Workers & External Support	0	0	0		
	F. Studies, Workshops & Meetings	0	0	0		
	G. Training	0	0	0		
	H. Staff	0	0	0		
	SUB-TOTALS	7,765,500	0	7,765,500		
4. Agroforestry and Farm Forestry • Establish 40 poplar nurseries • Develop efficient planting delivery system to the farmers • Establish farm forestry or agroforestry on 3150 ha of private moving dunes • Establish farm forestry or agroforestry on 1750 ha private sand dune under sprinkler irrigation • Establish farm forestry or agroforestry on 10500 ha of private land • Establish 6900 ha of poplar based farm forestry or agroforestry on private irrigated land • Distribute fruit trees, ornamental trees and vegetable seeds suitable for approximately 550 ha of kitchen garden and/or homestead plot space		EU	GoH	Total	• Climatic conditions permit planting	• 42 poplar nurseries • Seedling delivery systems to farmers established • 3154.2 ha privately owned sand dunes afforested in dense plantation (1000 trees/ha) • 1784.8 ha privately owned sand dunes afforested in plantation of less density, allowing irrigated inter-cropping • 10525.5 ha farm forestry • 6944.44 ha poplar plantation • About 618 ha of mainly fruit trees planted on homestead plots; kitchen garden vegetable seeds distributed in the Western zone
	A. Infrastructure	0	0	0		
	B. Equipment	0	0	0		
	C. Supplies & Materials	1,035,700	0	1,035,700		
	D. Field Operation & Maintenance	3,341,000	0	3,341,000		
	E. Link Workers & External Support	0	0	0		
	F. Studies, Workshops & Meetings	0	0	0		
	G. Training	0	0	0		
	H. Staff	0	0	0		
	SUB-TOTALS	4,376,700	0	4,376,700		

6. APPROACH AND METHODOLOGY

The participatory approach adopted by the project implies development of/strengthening the capacity of the community for collaborative action, identifying and analysing their problems, setting goals and actively implementing micro-projects. The community takes management decisions and the technocratic outsider acts as a facilitator in the process.

The three major project components, namely Community Development, Afforestation and Water Resources Management, mentioned earlier are discussed hereafter.

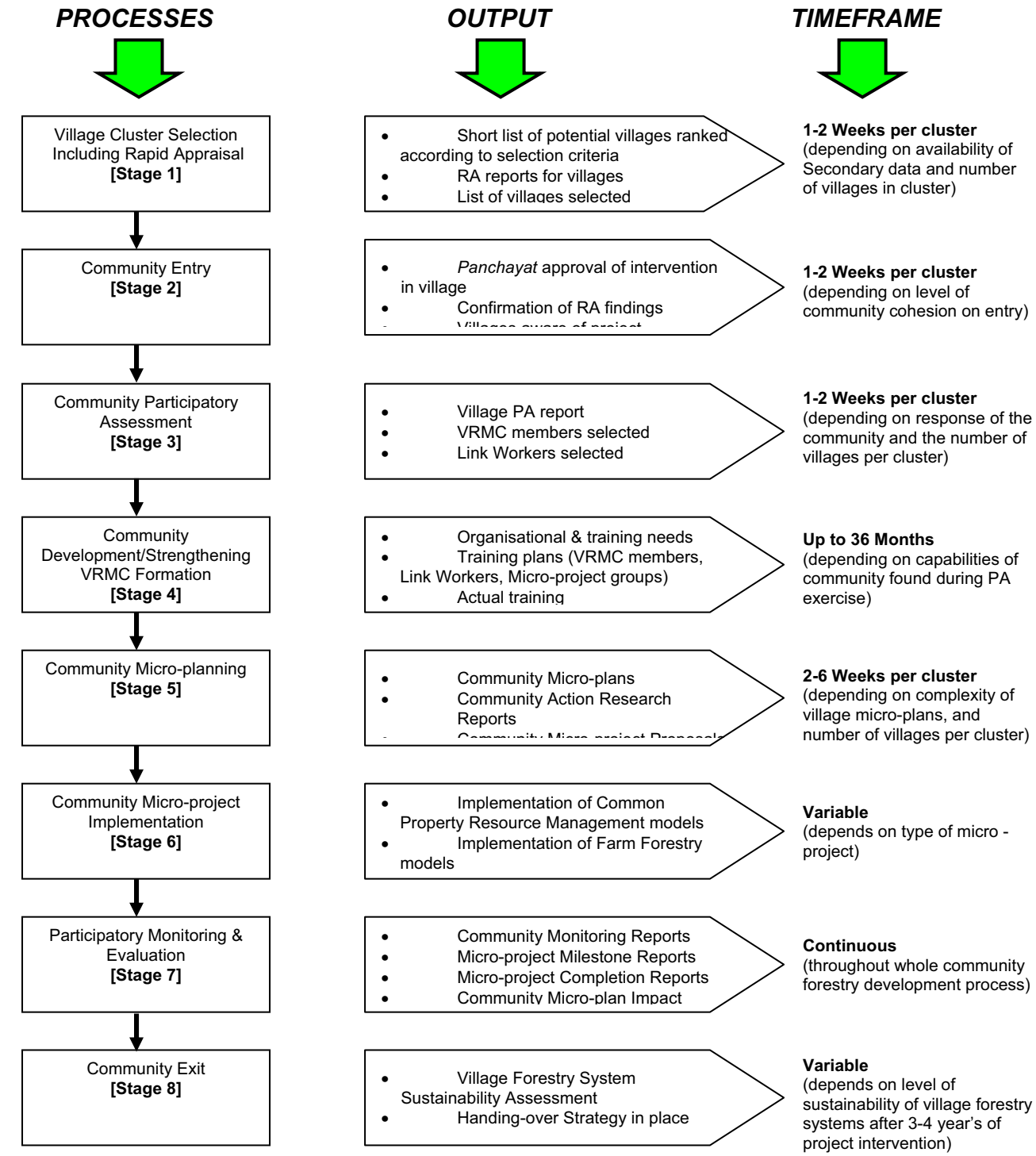
6.1 Community Development

In order to make the participatory approach adopted for the Project a success, sufficient attention is paid to Community Development Process **(Figure 1)**. The process aims at building up/strengthening the capacity of the community to plan and undertake participatory development activities. The process starts with Village Selection with simultaneous deployment of staff and selection of NGOs, who as mandated in the project, are to be involved in project implementation process to assist in Rapid Appraisal **(RA)**, community development through Participatory Assessment **(PA),** Participatory Resource Planning **(PRP)**, Participatory Monitoring and Evaluation **(PME)**, on-the-job training for leadership development and communication skills for villagers and VRMCs, gender sensitisation and to carry out process evaluation studies.

There are eight (8) distinct stages of overall Community Development Process as given below and discussed thereafter.

1. Village Selection
2. Village Entry
3. Participatory Assessment
4. Formation of Village Level Institutions
5. Micro-planning
6. Micro-project Formulation and Implementation
7. Participatory Monitoring and Evaluation
8. Project Exit

Figure 1: Overall Community Forestry Development Process



6.1.1 Village Selection

Villages for project implementation were selected on the basis of a Multi-Criteria Selection System **(MCSS)** followed by RA **(Figure 2)**. This selection is based on a set of objective criteria conforming to target groups and forestry model/area specifications. The prime stakeholders (women and resource poor farmers like landless, Scheduled Castes, etc.) are present in all villages and have not, therefore, been included for the multi-criteria selection systems. Following are the criteria used in MCSS.

- ***Land suitability and availability***

    - Village ecological condition vis-à-vis intervention models as identified by the project;

    - Availability of common land (for woodlots) in the village.

- ***Socio-economic***

    - Community mobilisation potential based on village size;

    - Proportion of the marginalized/disadvantaged section/s (scheduled castes, resources poor farmers and landless) as percentage of the total village population.

- ***Physical planning***

    - Proximity of village sites enabling clustering for operational convenience.

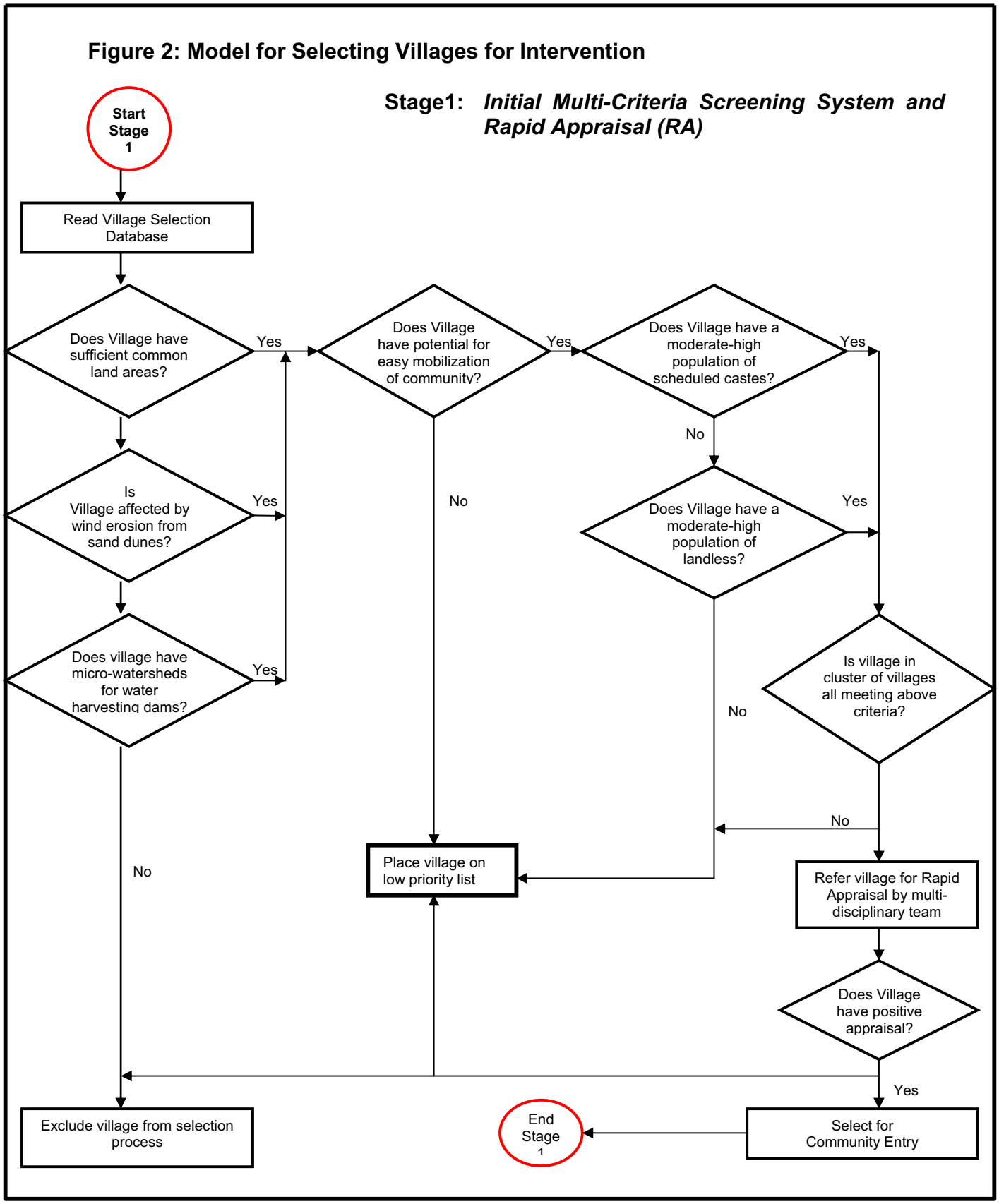
RA methods were used for quick validation of findings based on secondary data and their analysis in villages short-listed through MCSS. The findings of RA were used for arriving at a final decision regarding inclusion of a village for project implementation. A detailed account of the selection process and RA methods is given in ***Community Forestry Working Paper 1, (Billing and Viruthiyel, 1999)***.

The project area has about 3,000 inhabited villages of which 337 have been selected with 11 of these villages having only water harvesting dams. The village selection process was on the basis of the following parameters.

(1) Identifying villages that (i) have sufficient common land, or (ii) are affected by wind erosion, or (iii) are suitable for water harvesting dams.

(2) Villages having any of the above characteristics were screened to see if they possess potential for community mobilisation indicated by the number of households in the village. A range of 200 to 500 households was deemed ideal, though modifications in this size were made depending on the actual information in this regard.

Figure 2: Model for Selecting Villages for Intervention



(3) Selected villages were further screened for their social and economic backwardness measured by two proxy indicators of poverty, namely the percentage of scheduled castes and agricultural labour to total population, which on an average is about 20%. This percentage is deemed sufficient for the purpose in the context of social distribution in Haryana. The higher the percentage of these parameters, the greater is the priority of a village for selection.

(4) Selected villages were further examined for contiguous geographic clusters of three or more for logistic and administrative convenience and for ease of knowledge sharing between villages. Those villages, which fell outside a potential cluster, were put on a lower priority.

(5) Villages that met all the above criteria were put to a RA to confirm the preliminary findings, to assess the willingness of the community to participate in the project and to see that necessary conditions for success exist.

The procedure outlined above was adopted for the initial batch of 80 villages, of which 59 were finally selected, when these villages were subject to RA followed by Village Entry, PA, micro-planning and micro-project formulation in a phased manner.

6.1.2 Village Entry

Village Entry **(VE)** also referred as Community Entry **(CE)** activities were initiated, for intervention, in villages with a positive appraisal, with the approval of the villagers as a prelude to community development.

Village (Community) Entry, the first stage of association of the staff with the village community was to win their confidence. The staff team requires an introduction to the village before starting working with them and a VE is precisely undertaken with this primary objective in view. During this period the team confirmed the findings of RA and obtained a written approval from the village *Panchayat* for intervention by HCFP.

The VE process thus serves the purpose of:

- Introducing the team to the village;
- Publicising the project;
- Familiarizing the village community with the project and its objectives;
- Ascertaining a positive attitude of the village community to cooperate with the project;
- Ascertaining availability of sufficient common land for planting.

Village Entry lends an atmosphere of transparency to the process of interaction between the team and the local community; by laying bare the motive/s and objective/s of the outsiders, who aid the process of rapport building. It also provides the facilitating team with an opportunity for collection of observational data about the village, and identification of Entry Point Activities **(EPAs)**.

One of the related objectives of community entry is to initiate the process of cooperative work, and by the end of this stage the team is able to obtain community commitment for continuation of the participatory process for resource management. A good VE translates into better rapport, and more effective implementation. When equipped with basic information about the village, the team conveys a seriousness of intent that goes beyond mere statement of motive.

As mentioned earlier, VE is about starting off the process of working with the community. Although the activities that may actually be undertaken during VE are innumerable, and some optional, the following are considered mandatory.

- Convening a general meeting with all sections of village community in close collaboration with *Panchayat*;
- Introduction of the team (SDFO, Forester, FGs) assigned to the given village cluster and v*ice-versa*;
- Introduction of the community to HCFP and its objectives;
- Meeting with Key persons in the village;
- Preparation of Base Maps;
- Awareness of participatory approach to PA;
- Agreement with the *Panchayat*;
- Scheduling PA.

The details of Village Entry are given in ***Community Forestry Working Paper 2,*** on the subject ***(ISD, 1999a)***.

6.1.2.1 Entry Point Activities

An EPA is quick-return, low-investment activity, undertaken primarily by the facilitating team, that may not directly be related to the project, but *is an immediate and expressed need of the community,* and helps establish quick rapport with the community at large, thus creating channels for effective communication.

It is important that the activities identified as EPAs serve the purposes of establishing rapport with the community and getting across the message, through action, of being serious about the welfare of the village. An EPA:

- Is a need expressed by the people;
- Brings returns to the community within a short span of time;
- Need not be an activity pertaining to the project;
- Is a vehicle for creating goodwill and popularizing the project.

EPAs are meant for addressing community needs based on immediate problems. A list of EPAs identified by the community was drawn up and the community itself prioritised them objectively, using the Paired – Ranking Tool and decided on the most important Need/EPA.

The project worked with the communities on EPAs in order to keep up their momentum and interest. These activities were mainly self-help activities with some limited support from the project; up to Rs.15, 000/- per village.

Execution of EPAs may coincide with their identification or may take place during PA, VRMC formation, micro-planning and micro-project formulation, but before micro-project implementation. For additional information on EPA execution, reference may please be made to guidelines in the ***– Field Operations Manual (TA Team, 2000)***. EPAs were done in all the 337 villages, as targeted up to 2005-2006 (Year 7).

There are several spin-offs from the process of VE and execution of EPAs, some intended (directly) and others that may be derived by a sensitised team, through cashing on opportunities as they present themselves during the EPA. These include project publicity, rapport building and an understanding of the village, its people, and their dynamics – social, economic and political.

Some examples of the most common EPAs selected by the communities are:

- Drinking water facilities in villages and schools;
- Utensils for public use;
- Sports equipment;
- *Durries*
- Shelters and benches at bus stands;
- Construction of shelters at cremation grounds;
- Improvement of roads and paths;
- Ceiling fans in schools;
- Drinking water structures for domestic animals.

At the end of EPA, another general meeting of the village was organised to review with the community the tasks accomplished and those pending. The community members were encouraged to take on the responsibility for the undone jobs, assuring them that the project will continue to guide them as and when necessary. They were also asked to prepare an estimate of the cost and labour input to EPA, to acknowledge the contribution made by the community. A special word of appreciation was included for those who had played an exemplary role during the EPA.

Once again, a brief visually-aided presentation on the project and its components was made and the villagers were invited to participate in the planning process to make the village a success story in natural resource management.

6.1.2.2 Community Entry Report

In order to keep track of the villages where the project was being implemented, and for future reference of the team and the community, the team prepared a brief report on the process and outcome of CE, giving an analysis of the secondary and observational data collected during the exercise, the tasks accomplished and a brief plan of action for the future. Included in the report were other remarks about the village community and its potential for further development. A sample outline of the VE report and its contents are placed at **Appendix 1**.

6.1.3 Participatory Assessment

6.1.3.1 Concept

Participatory Assessment in Community Forestry concerns: (a) the status, condition or problem of a resource that needs to be developed; (b) the social environment within which the development has to take place; and (c) the potential of the project to improve the status or condition or solve the problem. There are two distinct groups who are to do the assessment. The first and primary group may be termed as the **"Insider,"** that is the community, the people who ordinarily live in the village and whose livelihood is dependent on the resources of the village. The other group may be termed as the **"Outsider"** – the Government functionary, NGO or a consultant – people who do not belong to the village, whose livelihood is not dependent on the village resource, who come into the village for the limited purpose of implementing the project. The perspective of the **"Insider"** is influenced by the benefit he can derive from the project, the opportunity cost he has to incur for an alternative use of the resource and by local social set up and politics. The outsider perspective is limited to the achievement of a target, or reaching a project objective or goals.

The relationship between the insider and the outsider should ideally be that between a prime stakeholder or owner and a catalyst or change agent or facilitator. It should not be viewed as the relationship between a receiver or beneficiary and a giver or expert or technocrat.

The first stage of participatory process was VE when the project was introduced and publicised to the widest section of the village community. PA is the second stage of the community organisation process wherein the village community, supported by project staff, identifies and analyses its basic problems with focus on resource management. It allows the community to think collectively on the problems and their potential solutions. It is a stage of sensitisation and self-awareness. At the end of the process the community prepares a baseline of such problems which contains information on population, social groups, inter-group relations, livelihood, natural resources, habitat, livestock, energy, gender relations, seasonality and a host of other facets of village life.

One of the basic goals of the HCFP is to enhance the capacity of the village community to participate actively in sustainable management of natural resources of the village. Integrating tree planting into the farming system of the village is a major activity of the project. The immediate task for the facilitating team at the initial stages of community mobilisation and organisation is to get the commitment of the community on three basic values of:

1. ***Sustainability*** that implies that even after external assistance is withdrawn from the project, local communities will continue to manage it efficiently, equitably and in a conflict-free manner. Community capacity to plan, implement, evaluate and manage village micro-project independent of outside help is also one of the goals of HCFP.

2. ***Self-Help*** meaning that the community will mobilise internal finances and access available external support required to manage the activity efficiently through collective action.

3. ***Participation*** is the voluntary involvement of people in self-determined change. People become closely involved in the development of their own selves, community and environment. Projects reach higher levels of participation when the: (1) Outsider consults the community regarding goals and agenda for development; (2) community makes voluntary contributions; (3) community cooperates with the Outsiders; (4) Insider and the Outsider have a dialogue; (5) Community takes initiatives and asserts its autonomy; and (6) Community takes decisions with regard to goals, agenda and management of its micro-projects.

The goal of a truly participatory project is to reach the stage when the community is empowered to take decisions regarding goals, agenda and management of the project. Only then can the project achieve the objective of sustainable management of natural resources. However, there are two obstacles to reaching this level of participation:

- Communities are used to receiving help from outside without having to make any effort to contribute in the development of the village with the expectation that it is the duty of the Government without any community initiative.

- Development functionaries tend to believe that they have answers to all problems and the fear that too much involvement of people will decrease their power and influence.

Participatory Assessment is a method used by HCFP to overcome these twin obstacles and to encourage participation of village communities in its planning and implementation.

An attempt to equip the project staff with the skills and knowledge necessary for this second stage of association with the village community has been attempted through ***Community Forestry Working Paper 3 on participatory Assessment (ISD and TA Team, 1999a).*** It elaborates step-by-step the procedure for conducting PA and the tools and techniques for use at different stages in the process along with some practical examples.

6.1.3.2 Pre-Requisites

There are certain pre-conditions that were met before the team and the community together began the process of PA. These are:

1. Completion of *VE*;

2. Completion of ongoing execution of *EPAs*;

3. *Link Workers:* The Link Worker is a critical link between the project and the community. Two Link Workers (one male and one female for each village) were selected by the community from the educated unemployed youth of the village. They had to work to serve as a link between the community and the project and render all possible assistance to build up their (community's) skills in collaborative development. During the project period, they are given structured training related to project induction, their roles and responsibilities, participatory assessment, micro-planning and micro-project formulation and execution, participatory monitoring and evaluation and management of village institutions to equip them to fully assist in the various activities of the project including training, maintenance of records, information dissemination and campaign for the project.

4. Constitution of village PA team consisting of SDFO (Wherever possible), Forester and FG with SDFO as Team Leader;

5. *Agreement* between village *Panchayat* and the PA team where both parties make a commitment to cooperate and work together for PA and subsequent operations.

6. *Logistics:* It is important that the Team stays in the village or close to the village during the process of PA and even later, if necessary.

6.1.3.3 Methodology

There are six basic steps for the conduct of PA. The time taken in a village varies depending on the internalisation of the process by the village community. The order of the steps outlined here also needs rearrangement depending on village conditions. The field team is encouraged to be as creative and innovative as possible, during the process.

Step 1: Organising the First PA Meeting

The PA exercise began with a general meeting **(Appendix 2)** of the village community *(Gram Sabha)* convened by the *Panchayat* and chaired by the *Sarpanch/ Upsarpanch*. Efforts were made to see that at least one male and one female member from each household attended the meeting. The PA Team Leader acted as a resource person supported by his team members.

After introductions, the Team Leader explained the purposes of the meeting and the various PA exercises that follow. The purposes are: (1) facilitating village wide consultation regarding village problems; (2) evolving a common perception in the community regarding problems related to management of natural

resources; (3) an understanding by the village community of how the project can contribute to solving some of the problems; (4) understanding the responsibilities that the community will have to shoulder to enable the project to operate in the village; (5) identifying focus groups that have a stake in implementation of HCFP models; (6) conveying the necessity for the focus groups to participate in group discussions; (7) informing people about the need to form a village resource management institution to plan and implement village level micro-projects; (8) informing the people about the need to identify community resource persons – VRMC office bearers, Link Workers and Enumerators; (9) explaining different Rapid Diagnostic Tools and Techniques **(RDT) (Appendix 3)** that will be used in PA and their purposes; (10) explaining the information that would be collected using the tools and the purpose for which they could be utilized; (11) reaching an agreement on the information that the community may wish to collect as part of the village information system.

Finally, an agreement emerged on the dates and venue of conducting different PA exercises and the date of the final PA meeting **(Appendix 4)**. which was again another extraordinary general meeting of the *Gram Sabha.*

Technique:

- Village meeting-cum-discussion

Step 2: Understanding the Village Community

This step has two dimensions: Firstly the different tools used in this and subsequent steps deepened the self-knowledge of the community and helped viewing itself from fresh angles. Secondly, the understanding of the community gained by the facilitating team during VE was further deepened. This helped the team to place the issues in the context of information to be collected. The tools used for this purpose also provide opportunities to the team for strengthening ties with the village community.

Tools:

The tools used at this stage were essentially “Openers” that help identify the issues of concern and lead on to the process of detailed data collection. The tools used were as follows.

- Village Historical Timeline
- Trend-line for Resources
- Transect Walk through the Village

Technique:

- Interview with Key Informants

Step 3: Problem Identification

The problems to be addressed relate mainly to different aspects of resource degradation, and the exercise of problem identification during PA, therefore,

revolved around the same. The techniques employed for problem identification in PA emerge from the community perceptions of resource degradation, and impact of the same on their lives and livelihoods. This process sensitised the community of its resource-related problems. Resources for inclusion were land (including soil, common land and grazing land), water, forests and livestock.

This step included a review of the Historical Timeline exercise conducted in the previous step particularly with regard to problems that the community has faced in the past, and the manner in which the problems were resolved. This provides interesting and useful insights into how the community has geared up itself in crisis situations, and may be used as an indicator for assessment of the maturity of the village community.

Techniques:

- Focus Group Discussion
- Village Meeting-cum-Discussion

Step 4: Assessment of Resource Availability with the Community (Resource Condition)

The resources included in PA were land (including soil), water and forests. The data collection process on resources already begun with Transect Walk provided an opportunity for rapport building, seeing the village and meeting people, understanding the village geography and land use. This was followed by preparation of a village resource map, which provided an overall picture of the resources available to the community, their use and management. An assessment of common land situation and preparation of a common land tenure map, which followed, provided information about common land patterns, seasonality of use, and identification of groups most dependent on them. Common land tenure mapping included information on use of the land for forestry/plantations and agricultural purposes.

Tools:

- Village Resource and Tenure Map
- Farm Information Analysis
- Common Land Mapping
- Common Land User Analysis
- Seasonal Calendar
- Environmental Pressure-State-Response

Technique:

- Focus Group Mapping drawing exercise and discussion

Step 5: Assessment of Socio-Economic Situation (Community Condition)

The main focus of the project is the community. So, the question whether the community has the necessary conditions to make the project a success assumes relevance. This requires information of village institutions and organisation. Other

relevant information required relates to demography, socio-economics and gender.

Tools:

- Socio-economic cum Demographic Matrix
- Village Social Map
- Socio-Gram
- Institution-Gram
- Gender Analysis

Techniques:

- Door-to-Door Interviews
- Household Gatherings
- Village General Meeting
- Focus Group Discussion

Step 6: Analysis and Reporting of Information

During the process of PA, data was collected on several aspects of the village community, its resources and problems. This data had to be properly documented and analysed.

The analysis focused on aspects like, (a) similarities; (b) differences and contrasts; (c) proportions, percentages, averages and range of variation (extremes); (d) relationships; (e) preference, likes and dislikes; (f) needs and wants; and (g) problems and limitations.

Technique:

- Village General Meeting-cum-Discussion

6.1.3.4 Participatory Assessment Report

After the summary of all the tools and techniques was made, a subgroup, comprising of knowledgeable individuals and the PA team, was formed which prepared the draft PA report with proper arrangement of information. Thereafter, the final PA meeting, which was a general meeting of the *Gram Sabha* chaired by the *Sarpanch,* was convened and the draft report presented. After some discussion during which changes suggested by members were incorporated and the report approved, in the form of a formal resolution.

A suggested format for a PA report is given in **Appendix 5**.

6.1.4 Village Level Institutions

Community leadership would emerge during PA and working together for a few weeks when a village institution called VRMC would be constituted and formalised.

6.1.5 Micro-planning and Micro-projects

6.1.5.1 Concepts

The process of Community Development goes through the stages of awareness generation, sensitisation and empowerment. Capacity building of the community for taking up self-directed development, through identification of problems, analysing the same, collecting and synthesising information, planning and implementing problem solving strategies, and monitoring and reviewing the activities are integral components of the entire process. Participatory Assessment results in awareness creation and sensitisation, as well as in generation of information that can be used for planning and evaluation. These help the community and the facilitating team to arrive at a common perception about natural resources related and other problems. The data generated during PA is classified, analysed and shared with the community.

The stage is now set for village planning, commonly referred to as Micro-planning which, in the context of HCFP, means village wide strategic planning for sustainable village resources management by the village community. It focuses on preparing short-term plans for 3-4 years, which fit in with the micro-project establishment phase on the project. During Participatory Assessment, the community identifies its main resources and problems' concerning resource management, while during micro-planning the community classifies the problems, attempts to find out their causes, sets its goals and decides what needs to be done to achieve these goals.

The main objectives of Micro-planning in the context of HCFP are to:

(i) Address the natural resource related problems and needs of the village community;

(ii) Promote better, more effective and efficient management and use of available and additional resources;

(iii) Contribute towards an equitable, sustainable and balanced socio-economic development of the village community.

A micro-plan is a document that lays down the broad goals and objectives for development in a particular sector, while a micro-project, on the other hand, is a charter for action for meeting some or all objectives, with clear-cut start and end dates, time and resource budgets, listing of expected outputs, outcomes and impacts and the means of achieving these results.

The micro-plan document, prepared jointly by the community and the facilitating team will delineate what activities are possible within the intervention areas and the scope of HCFP models, as well as what needs to be pursued by the community through other support systems available. The activities that are possible under the HCFP framework constitute the Resource Development Micro-plan and the latter, the General Village Development Plan.

6.1.5.2 Methodology

Village resource micro-plans involve strategic planning for sustainable management of village resources, within the framework of intervention models included in the overall HCFP plan. It will include goals related to all village resources; including land, water, forests and environment with special emphasis on forest systems based on community and private lands. The planning stage is complete when this general plan is converted into specific micro-project proposals that correspond with the HCFP models.

The essential participants at the micro-planning and micro-project proposal stages are the residents of the village and their resource management institutions. PA and micro-planning are the phases when the community is sensitised to the problems that affect its natural resources, and those of the people dependent on them.

The process of micro-plan preparation is essentially one of interaction, debate, discussion and consultation. The community has already been sensitised to the concept and use of the micro-plan. The facilitating team elaborated to the community the detailed process of making of a micro-plan towards the end of PA. This included: the process of community goal setting, preparation of the plan, its sanction and implementation. A detailed briefing session at the start of micro-planning was conducted for effective participation of the community in the planning process.

An attempt to equip the project staff and other beneficiaries with the skills and knowledge necessary for micro-planning and micro-projects has been made in ***Community Forestry Working Paper 4 – Micro-planning and Micro-project Formulation (ISD and TA Team 1999)***. This working paper gives the methodology to be followed in the preparation of micro-plans and micro-projects and the RDTs and techniques used for the same ***(Appendix 6)***. In the various steps of micro-planning process, described hereafter, all decisions regarding the use, management and development of resources are taken by the community, as it is their plan.

Step 1: Community Problem Analysis

Several problems, and corresponding needs, of the village community emerged during VE and PA. It is important to understand here that only the existing problems should be listed. The needs that emerge out of these are those that address the real problems, rather than a “wish-list” of what the community wants.

The facilitator then arranged the problems, category-wise, and established an overview of the situation, from a “problem” perspective, incorporating all ideas/ opinions expressed by the group community.

Tool:

- Community Problem Analysis with causation diagram

Techniques:

- Focus Group Discussion

- Village Meeting-cum-Discussion
- Semi-structured Interview

Step 2: Community Visioning

After making a thorough analysis of the nature, extent and causes of problems, the community looked for possible options available for solving these problems – community visioning – from within the community and through collaborative action with external agencies like HCFP, Rural Development Department, etc.

In a situation where people are used to getting doles from the Government, the importance of this step is not apparent to the community members in the beginning. They were, therefore, reminded that one of the long-term objectives of this project is to develop the capacity of the community in order to find its own solutions to problems and plan a strategy for these solutions. Planting of trees would become a permanent solution to their resource management problems only when communities feel that it is the right solution to their resource depletion. This has to be done first in focus group meetings and later in a combined village meeting.

Tools:

- Community Option Matrix
- Scoring and Ranking of Species

Step 3: Community Goal Setting

On the basis of problems and their possible solutions, the community sees its own goals and strategies. Goal setting is a slow and long-drawn out process, requiring discussion, deliberation and, if necessary, even negotiation. The facilitating team made sure that every problem and need identified earlier was duly considered and understood, especially the problems of the marginalized and deprived sections of the village community. For every problem the gender specific aspects were highlighted, discussed and accordingly included in the plan.

There should be a single, over-arching goal that embraces all the needs and aspirations of the village community, in the context of Natural Resource Management and its implications for the community.

Depending on the goal, and the project intervention models, the community draws up a strategy for attainment of objectives. In addition to the problems the project can address, there are certain areas for which the project has made provisions (kitchen gardens, energy-efficient cooking stoves), which may not necessarily be a “solution” to any of the identified problems. This was explained to the community at a general village meeting, and the models were included in the overall plan, depending on the willingness of the community members to adopt these interventions.

Technique:

- Village Meeting-cum-Discussion

Step 4: Community SWOT Analysis

This step enables the community to analyse and understand the **S**trengths, **W**eaknesses, **O**pportunities and **T**hreats to the community contributing towards achieving the goals set (***see S. No. 8, Appendix 6)***.

Technique:

- Village Meeting-cum-Discussion

Step 5: Micro-planning

After goal setting and identification of objectives, the community, with assistance from the facilitating team, prepared an outline of activities to be undertaken. This included details of the physical works to be carried out, the resource requirements for the same (money, time, labour, others), the time schedule for its execution, and the division of roles and responsibilities. It was important for the community to understand clearly the commitments they had made during the process of preparation of the proposal. The proposal should carry, as an annexure, a resolution by the community, declaring its commitment to the proposal.

The proposal consisted of:

- Resource treatment and management plans;
- Nature, number and/or extent of intervention models of the HCFP;
- Time schedule of activities to be undertaken;
- Broad division of responsibilities between the community and the HFD/ HCFP:
- Other areas of intervention, such as some income generating activities, or specialized/ site-specific solutions to existing and crucial problems.

A suggested format for the micro-plan is given at ***Appendix 7.*** The listed annexures to the micro-plan are very important, as they give crucial details pertaining to the proposed micro-projects, including species, site locations and names of participating farmers/households. Thus micro-project formulation will be halfway done when the micro-plan is ready.

Technique:

- Village Meeting-cum-Discussion

Step 6: Micro-project Formulation

Every component of the micro-plan proposal is divided into discrete segments, each of which can be formulated into a micro-project. Thus, each woodlot or farm forestry intervention, or any income generating activity, etc. becomes a “project” in itself. As part of micro-plan, for each micro-project selected, there is a proposal

comprising its justification, detailed implementation plan, monitoring indicators and monitoring arrangements. Each proposal contains:

- A rational matrix showing the justification of the project, expected positive and negative effects;
- A scheduling matrix that included its objectives, activities on the basis of time schedules and responsibilities of stakeholders;
- An input matrix that defines resource needs and budget;
- A proforma that contains socio-economic information, key development indicators, etc;
- List of direct beneficiaries.

Step 7: Approval by the Gram Sabha

After the executive body of the VRMC/VRMS with support of the project team prepared the micro-plan document, including the important micro-project proposals, it was presented to the general body meeting of the village, specially convened to discuss and ratify the document. After ratification, the micro-plan, along with the supporting micro-project proposals were submitted to the DFO and the CF for technical inputs, overall analysis of the document, and sanction.

The micro-plan was thereafter approved and interventions began, as per the document, in the village. It is important to remember that it is a public document and should be prepared with full participation of people, be available with VRMC/*Panchayat*, must reflect the actual ground realities and should be reviewed from time to time to monitor and ensure actualisation, and also to update the plan if required.

6.1.5.3 Micro-plan and Micro-project Proposals

The micro-plan and micro-project proposals are critical documents for both the community and the project as they form the basis for taking all the works forward. The time lines and the priorities make it easy for both the community and the project to review from time to time the progress made so far and if any modification is needed. Also it is important that the document remains a living document and should be shared frequently with the general house for greater transparency and accountability of community, village institutions and the project.

6.1.6 Micro-project Implementation

Implementation of the technical components was started only after the community institutions were developed, contracts set up, NGO involvement ensured and community baseline survey completed. Every stage of the implementation process was co-managed and directed by the community representatives. The micro-projects included EPAs, different plantation models, income generating activities and adoption of energy efficiency devices and technologies.

6.1.7 Participatory Monitoring and Evaluation

The capacity of the community to monitor and evaluate the implementation of its micro-projects was encouraged. This is an essential tool for sustainable resource management with participatory monitoring forming the major part of all monitoring in the project. Further details are given ***Chapter 13***.

6.1.8 Project Exit

The touchstone of the project's success is the ability of the community to manage the development process without external assistance, resolving possible conflicts, evolving methodologies for distribution of benefits, and sustaining resource use. To be orderly, the exit process, thus, starts at the entry stage itself, becoming increasingly more pronounced over the project period.

A deliberate plan for exit required consultation with all stakeholders;, negotiating the conditions for withdrawal and engaging in a phased transfer the roles and responsibilities to the community. The manner and time of exit was determined by the rating of village communities on a "sustainability/maturity index" which measured nine community capabilities that form part of the logical framework matrix. The assessment started at the PA stage and continued through the subsequent stages to the completion report at the end of the third year of micro-project implementation.

6.2 Community Capacity Building

The Community development process, aimed at building up/strengthening the capacity of the community to plan and undertake participatory development activities, has been outlined in section 6.1. Community Capacity Building is an important tool to strengthen the cadre of people involved in a project like HCFP, and is achieved through PA, formation of VRMC and micro-planning.

The objectives of Capacity Building in HCFP are: (1) to enhance capabilities of participatory communities in terms of awareness, knowledge and skills; (2) to enable them to perform tasks assigned in a better manner and (3) to develop visionary leadership for village improvement.

Capacity building through training and on-the-job exposure visits within and outside the state is an ongoing activity in HCFP. The contents focus on project ideology, roles and responsibilities and record keeping among others. This will probably make a difference in the near future in terms of VRMC as an institution that is holistically concerned with the quality of environment, natural resource management, upkeep of records, resource mobilisation, increasing area under village woodlots, land fertility, innovation, etc.

Capacity building initiatives are further developed as follows.

6.2.1 Training and Exposure Visits

Training and Exposure Visits are the most important activities with regard to Capacity Building of the local communities. HCFP has developed a training

package for training of leading members of VRMCs and Link Workers **(LWs)**, which consists of the following courses.

1. Micro-planning (2 days – for all VRMC members);
2. Link Worker Induction (3 days);
3. VRMC Management (3 days – for all office bearers and LWs);
4. Money Management (2 days – for all office bearers and LWs);
5. Participatory Monitoring and Evaluation (3 days – for office bearers, members of village monitoring teams and LWs);
6. Leadership and Communication Skills (3 days – for office bearers and LWs);
7. Need-based Refresher Training covering subjects above as required (2+2 days);
8. Link Workers Capacity Building with emphasis on gender aspects (3 days – for LWs);
9. Protection and Maintenance of Plantations (2 days – for VRMCs and sand dune fixation farmers);
10. Final Refresher Training in VRMC Capacity Improvement (4 days – for all VRMC members).

Training as above has, with some exceptions as regards micro-planning, been imparted to all VRMCs during the project period. While the courses at S. Nos.1, 2, 3, 4, 7, 9 and 10 above, have been conducted by trained in-house staff, the courses at S. Nos. 5, 6 and 8 were taken by external trainers. In most cases training has been imparted to the four office bearers and two Link Workers of each VRMC, but micro-planning, refresher and plantation management training have covered all VRMC members.

In addition to the above mentioned training courses, supplementary training inputs were provided through well designed study tours (exposure visits) within the state and to different places in adjacent states. Further elaboration on training and exposure visits is given under **Chapter 11**.

6.2.2 Chetna Kendras

One *Chetna Kendra* (Awareness Centre) each in a project village was constructed as a micro-project. These *Kendras* are the venue for public discussion related to community forestry and other activities, training, awareness generation, literacy classes and Income Generating Activities **(IGAs)**. It is a meeting place for the VRMC/SHG and provides a focal point for the community, facilitating the development of a sustainable resource management institution. The *Kendras* are often also used for other purposes like dispensaries, veterinary clinics and primary education (as an added classroom).

While the project funded the construction of these *Kendras*, the community supervised their construction, contributed labour and provided other amenities. The communities have to generate funds and assume responsibility for their upkeep and maintenance in the long run.

A total of 294 *Kendras* have been built in villages with common land plantations of at least 10 ha.

6.2.3 Link Workers

Link Workers are locally recruited para-extension short-term contractual staff, selected by the community from the educated unemployed youth of the village. Two Link Workers (one male and one female) were attached to each village and they served as a link between the community and the project and rendered all possible assistance to build up community's skills in collaborative development during various stages of community development. A total of 670 Link Workers (336 men and 334 women) were engaged during the currency of the project.

The primary responsibilities of Link Workers included: (1) assisting village level institutions like VRMCs and SHGs in their work; (2) information dissemination to the villagers in natural resource management; (3) participation in micro-planning and micro-project formulation and taking the lead in follow-up activities; (4) assistance in facilitating village level meetings and participation in all meetings of village level institutions; (5) assistance in record maintenance and updating; (6) assisting the community and the project in monitoring and evaluation; (7) participation in local training and campaigns of the project; (8) keeping the project authorities informed and updated of the local situation; and in case of any conflicts, also suggest remedial measures. Selected Link Workers have been further developed and employed as trainers.

The responsibilities during post-project include: (1) continue supporting village level institutions in their work, voluntarily or on remuneration as fixed by the VRMC; (2) support the village level institutions in strengthening linkages with Forest and other departments for sustainability; (3) facilitate linkages with *Panchayats,* NGOs, banks and other training/financial institutions; (4) motivate community in the maintenance of community assets created under the project; (5) provide support in record keeping and its maintenance; (6) organise training with the support of line departments and NGOs active in the area; (7) continue with micro-planning and implementation activities with the support of Block Office and District Rural Development Agency **(DRDA)**; and (8) provide support to SHGs – marketing and technical guidance.

6.2.4 Resource Management Fund

While the community was encouraged to assume responsibility for the management of plantations, an initial payment of Rs. 30,000/- was made by the project to each VRMC for creation of a Resource Management Fund **(RMF)** to be managed by them. This payment was made provided the village woodlot was 10 ha or more. Where the village woodlot exceeded 10 ha, an additional payment of Rs. 500/- per ha was made to the village concerned through its VRMC.

The RMF was augmented by mobilising local resources in the form of annual subscriptions from user groups, an agreed percentage of benefits accruing from the various micro-projects, service charges, fines imposed for damage to plantations, etc. In fact, initial payment of RMF from the project was released only after the community had agreed to a mechanism for future community contribution to the fund. This was necessary for bringing about a sense of belonging in the community, as well as ensuring availability of adequate funds for future maintenance and sustainability, besides supporting IGAs.

The RMF has been paid to 291 villages (VRMCs).

6.2.5 Village Woodlot Survival Bonus

In addition to RMF an incentive amount of Rs. 300 and Rs. 400 per hectare was paid for village woodlots during the second and third year after planting, to ensure effective cooperation of the villagers in protecting these plantations and obtaining higher survival rates. These incentive amounts were paid only when the survival was 80% or above in village woodlots. The amounts were utilised by the VRMC for further protection and management of plantations after the same have been handed over to them.

This survival incentive money has been paid to 311 VRMCs.

6.2.6 Farm Forestry Survival Bonus

The focus under farm forestry is on raising forestry crops in agricultural fields, bunds and compact blocks for fuelwood, fodder, timber and fruits as per the farmer's choice, giving him additional income on maturity while the Department provides all the technical guidance and training in raising these trees and their maintenance. Farmers in 323 villages planted an area of 10,525.5 ha under multi-species farm forestry. The farmers themselves manage these plantations.

The project paid to the farmers an amount of Rs. 2.00 and Rs. 4.00 per surviving plant in the first or second year and in third year after planting as an incentive to ensure their continued interest in protecting the plants. This survival bonus has often been pooled by individual farmers for investment in an activity benefiting the entire village.

6.3 Energy Efficient Technologies

6.3.1 Energy Saving Cooking

The project aims at reducing the consumption of fuelwood and cow dung cakes in target communities by introducing improved domestic cooking stoves *(Chulhas)*. Experience has, however, shown that the actual impact of improved technologies in the past has in the past been at best marginal. The project, therefore, carried out a study of improved cooking technologies in order to ascertain the options available in the market, the real needs of village households, the feasibility of introduction of improved stoves into different socio-economic groups, the possibility of further design improvements with participation of villagers, and the potential for establishing income generating micro-projects based on production of improved *Chulhas* by disadvantaged groups within the target villages.

Trials conducted by the project, however, confirm that the improved indoor *Chulha* reduces fuel consumption by half, compared to the traditional cooking stove, saving up to one tonne of fuel per year, if used regularly. Further, the smokeless *Chulhas* also save women and children from the smoky environment of the traditional stoves, which is a health hazard equivalent to smoking 200 cigarettes a day. Spyrometer tests conducts have shown that the incidence of lung obstruction has come down from 54% of women affected to 35% after only six months use of the improved stove. Eye problems have within six months been reduced from 67% to 41% of the women affected.

The improved *Chulha* has been received very well with practically all villagers demanding these improved stoves in their micro-plans, in view of the substantial fuelwood saving and manifest health benefits.

Awareness camps were arranged in each village to introduce the activity, followed by door to door interaction, motivation and surveys to identify interested households and type of cooking stove required. User groups of intended recipients have been formed and trained to conduct village surveys and to manufacture and install the improved stoves.

The *Chulhas* propagated by the project are made of cement for longer durability, the cost per unit being estimated to be around Rs. 300/- (in later years Rs. 400/-), of which the recipients share 20% and the balance is subsidized by the project. Some of the *Chulhas* installed were manufactured by trained SHG members who have also been trained in maintenance and repair of these improved *Chulhas.*

Self-Help Groups have been engaged in participatory monitoring, covering 3,667 women in 71 villages, as to how *Chulhas* installed during previous years have been utilized. The follow-up surveys showed that 74-76% of cooking stoves are being used, of which 67-71% are used daily, normally more than twice a day. For around 8,400 stoves installed by the project, this implies fuelwood savings of at least 5,500 tonnes a year. Reasons for non-use of *Chulhas* are broken stoves, impaired fuel-efficiency or smoke reduction, changed place of cooking, difficulties in handling the stoves and alternative use of gas for cooking.

A total of 8,431 smokeless *Chulhas* have been installed in 153 villages.

6.3.2 Improved Crematoria

Seven improved crematoria have been constructed during the currency of the project, wherein the *Panchayat* contributed 10% of the cost. The village communities were, however, rather reluctant to use these improved crematoria and the activity was discontinued.

7. VILLAGE RESOURCE MANAGEMENT COMMITTEES

7.1 Background

Village level institutions dealing with forest issues are, in most cases, of relatively recent origin. In HCFP these institutes are known as VRMCs. Many of these VRMCs have succeeded in bringing greater focus and awareness of the need for protection and conservation of forests. They have carried out plantations, their protection and maintenance, soil conservation and Silvi-pasture activities. That said, there still remain challenges within these institutions like the dominance of traditionally powerful groups; unclear boundaries and responsibilities. However, these institutions have generally proven themselves effective in addressing local concerns and issues.

The need for constituting VRMCs in HCFP was to organise community members through a common platform to address the issues of natural resource management, to build leadership resources at the local level, to create a forum which can ensure accountability and transparency, empowerment of disadvantaged and to create a reservoir of resources, which can maintain community assets created under the project to sustain activities after the project withdraws.

VRMC is a village level institution, in HCFP villages, where major plantations are being undertaken on common lands. It is a sub-committee of the *Panchayat* under Section 22 (v) of the *Panchayati Raj* Act. A total of 335 VRMCs have been formed and trained.

7.2 Constitution

During the final PA meeting, which was an extraordinary general meeting of the *Gram Sabha*, a resolution was passed, nominating/electing the VRMC members who are willing to work voluntarily for the project, and devote time for the same and have had proven honesty and experience in community service. After this, the *Panchayat* was requested to formally constitute the VRMC and delegate it with powers and responsibilities.

Subsequently the *Panchayat* convened a meeting to act on the above and passed a resolution, formally constituting the VRMC, approving its byelaws and delegating powers and responsibilities to the VRMC. A copy of the resolution was sent to BDO, *Panchayat* Officer, DFO and HCFP.

On receipt of the resolution from the *Panchayat*, the DFO signed a tripartite agreement with the VRMC and the *Panchayat* and a Bank Account in the name of the VRMC was opened after the VRMC passed a resolution authorising the opening of a Savings Bank Account, mentioning the office bearers who could operate the account. This was followed by membership collection (as decided by the community members) from the village households and the collected amount was deposited in the bank.

Guidelines for the constitution of VRMCs are available ***(TA Team, 2000a)***. Model byelaws for these institutions have been developed, with built-in flexibility to meet

local conditions and needs, ***(TA Team, 2000b; ECC, 2000; Rai, 2002)***. These byelaws incorporate provisions regarding responsibilities of office bearers and members of the Executive Committee as well as the members of the village community, the right over resources and usufructs of different user groups, (specifically women and disadvantaged groups) and mechanisms of conflict resolution. These aspects are extensively discussed and negotiated with maximum participation of the village community during PA as well as micro-planning.

The membership of VRMC consists of all adults of the village (who are eligible to vote in the *Panchayat*), constituting the General Body, with an Executive Committee of 9-15 members out of which four office bearers (Chairperson, Vice-Chairperson, Secretary and Cashier) were elected for a period of two years. If the Chairperson is male, the Vice-Chairperson in that case is female and *vice versa*.

Of the total number of Executive Committee members, at least ⅓ are women and ⅓ represent the poorer sections of the society like Scheduled Castes and landless households. The VRMC is responsible for planning, implementation and monitoring of community forestry and other associated village development activities under the project.

The VRMC Executive meets regularly and at least 50% of the members suffice for a quorum. They update the members on the developments since the last meeting as well as plan future course of action. The Chairperson presides over all meetings of the VRMC and signs all agreements and covenants entered into by the Committee. In the absence of Chairperson the Vice-Chairperson performs these functions. The Secretary convenes meetings, maintains records of the proceedings of the meetings and keeps all records and documents. The Cashier is responsible for maintaining accounts. All decisions are to be ratified by a minimum ⅔ quorum in the meetings. The VRMC members hold office for a period of two years and the retiring members are eligible for re-election for a maximum of three terms.

The community selected two Link Workers preferably from the educated unemployed youth of the village, who would serve as a link between the project and community and render all assistance to build up their skills in collaborative development action. They would be the channels for the project's monitoring and information needs at the micro-level and were paid by the project through the VRMC. Each village has one male and one female Link Worker.

7.3 Financial Contribution

The project provides funds to the VRMC for (i) village woodlot maintenance and a management fund to be utilized by the VRMC after an establishment phase of 3 years for managing the village woodlots and other plantations on common lands; (ii) survival bonus for survival of trees in the second and third years of establishment of village woodlots and (iii) payment of honorarium for two Link Workers.

After at least 50% of the households have paid their membership fee, the VRMC requests the DFO to pay it **Rs. 30,000** for the Resource Management Fund (on condition that the village woodlot area is at least 10 ha) + Rs. 500 per hectare

exceeding 10 ha (on condition that at least 75% of the households have paid their membership fee). This amount is then released by the DFO in the form of interest bearing term deposit/bond, which on maturity will revert to the saving bank account of the VRMC to enable it to meet the management needs of the village woodlots.

The survival bonus is released to VRMC (provided there is a survival of 80% or more) under certification of survival percentage by the micro-project monitoring team, duly confirmed by the project monitoring team.

7.4 VRMC Capacity Building

Capacity building through training and on-the-job efforts of VRMC members is an ongoing activity in HCFP. They focus on ideology of HCFP, roles and responsibilities and management of plantations among others. This will probably make a difference in the future in terms of VRMC as an institution that is holistically concerned with the quality of environment, natural resource management, upkeep of records, resource mobilisation, increasing village woodlots, land fertility and innovations, etc.

The various measures taken to further strengthen the VRMCs include: (i) refresher training courses given to all VRMCs, especially in areas they were still weak, as a follow-up to their initial basic training; (ii) continuous training in group management, team building, decision making, conflict resolution, communication skills, community participation, PRA, and financial management and book keeping for office bearers of VRMC including social audit through monitoring teams; (iii) training to undertake nursery operations; protection, maintenance and monitoring of plantations; (iv) maintenance of their assets created under the project like water harvesting structures, ponds, *Johads*, etc; (v) study tours/ exposure visits within and outside the state where Village Level Institutions **(VLI)** are managing their activities on their own; (vi) assistance to each VRMC by two Link Workers; (vii) construction of one *Chetna Kendra* in each village with a woodlot of at least 10 ha, to be used for meetings, training and other developmental activities; (viii) promotion of interaction between VRMCs and SHGs; (ix) annual workshops to boost stakeholder involvement; (x) encouraging farmers to contribute their individual farm forestry survival incentives to VRMC for micro-projects benefiting the villages; (xi) extension materials for VRMCs were produced by the project, including a guideline handbook, a flipchart booklets on important issues and a regular newsletter.

7.5 VRMC Capability Assessment

Capability assessment of VRMCs was initiated in 2001 in a sample of 26 villages ***(TA Team, 2001)***. The same set of sample village was reassessed in 2003 ***(Billing, 2003)*** and 2004 ***(TA Team 2004)***. Another set of 50 VRMCs was assessed in 2002 ***(Bhatia 2002)***. Considering the usefulness of the results of the exercise, assessments were carried out for all VRMCs that had completed at least one year of existence from 2003 onwards. In the latest exercise (2007), a total of 328 VRMCs from batches 1-6 were assessed ***(TA Team, 2007)***.

Capability of a people's organisation is an abstract concept and it is not possible to objectively verify the capability except through some proxy measures.

Therefore, VRMC capability was sought to be understood by looking at whether a VRMC had certain desirable qualities or performed some of its essential functions, which they were expected to perform as village based resource management institutions. Nine areas were identified as reflecting the broad capability of VRMCs. These capabilities are to: (i) gather and appraise information; (ii) manage the institution; (iii) resolve conflicts; (iv) plan; (v) maintain and protect plantations; (vi) monitor plan implementation; (vii) access and mobilize financial resources; (viii) provide supplementary income to disadvantaged groups, including women and (ix) share knowledge and skill with the community. The nine capability indicators are built up from 55 objectively verifiable sub-indicators.

For each of these capacity areas, sub-indicators were identified. If a VRMC had a positive characteristic to these sub-indicators, it was assessed to be having capability with respect to that indicator. As all the sub-indicators did not have equal importance, a system of weighting was built in. Each broad indicator was assigned a maximum score of 10. The Overall Capacity Index of each VRMC was calculated as the average of scores for each indicator. Based on the scores obtained by a VRMC it was rated as good (overall score of > 7-10), moderate (> 4-7) or weak (0-4). Of the 328 VRMCs studied in 2007, 79 (24%, to be compared with the logical framework target of 25% VRMCs acting autonomously) were assessed as good, 231 (70.5%) as moderate and 18 (5.5%) as weak.

Looking at the individual capability indicators, conflict resolution capability is the strongest with an average score of 7.7 out of 10. The capability for management of the VRMC also has a high score of 7.5, with capability for natural resource protection and rehabilitation scored 7.3. However, the capability for financial resource mobilisation is very weakly developed, having a score of only 2.5. Obviously, this area needs improvement if the VRMCs are to sustain as autonomous village level resource management institution.

Compared with VRMC capability assessments carried out in 2005, VRMCs emerge stronger in 2007 as regards VRMC management, knowledge and skills sharing and natural resource protection and rehabilitation, while they have weakened or are at par with the 2005 assessment for all other indicators. In the two-year interval in between the assessments, the youngest VRMCs have been more or less catching up with the rest, but the oldest VRMCs – more than seven years old – still emerge the strongest.

The proportion of overall weak VRMCs remains the same as in 2005, while the ratio of overall good VRMCs has come down. The VRMCs seem to have peaked in 2005 – when raising of plantations was still in full swing in all villages – and fatigue has since occurred, which is only to be expected in case of such a long-time endeavour. Not all VRMCs that used to discuss their village microplan with the Panchayat or the Block Development Office for implementation of some non-afforestation microproject continue to do so, not all VRMCs continue the practice of social fencing to protect plantations as the trees have grown up and are no longer vulnerable to damage by grazing cattle, VRMCs that were once confident that they could resolve conflicts amiably may finally have met with a dispute they couldn’t resolve, etc.

However, not all of the 55 sub-indicators assessed are essential for long-term survival of the VRMCs. Analysing 25 criteria crucial for future sustainability, it turns out that close to 60% of the VRMCs fulfil at least 20 of them.

7.6 Sustainability of VRMCs

Sustainability of the VRMCs indicates their stability and continuous functioning after the project withdraws. Sustainability is a process in any project cycle that envisages continuity of the interventions and upkeep of the assets created/developed under the project are handed over (withdrawal phase) to VLIs, VRMCs, *Gram Panchayats*, SHGs and the community. This is the time when intensive inputs are required to empower the community and VLIs through technical and management training.

The project, therefore, during the withdrawal phase focuses on sustainability issues, besides institution building, training and works, which at community level envisages movement from passive to active, individual to group, knowledge to action, external to internal and dependence to independence which meant strengthening the process of empowerment. Strategic interventions are facilitated on community participation, cost sharing and effective networking which are essential ingredients of achieving sustainability in a project.

Ensuring sustainability of VRMCs needs continuous support in terms of capacity building efforts – training, on-the job support, exposure/cross visits and linkages with *Panchayats,* Banks, NGOs, Government departments, SHGs, etc.

Sustainability can be seen in three ways:

1. Financial Sustainability **to include:** ***(i) Diversification of sources of funding – to look for funding options from other Government and Non-Government, agencies; (ii) initiating group IGAs through VRMCs; (iii) fixed deposits of unutilized funds in banks; (iv) annual membership subscription in VRMCs for keeping the interest of the community alive; (v) income through sale proceeds of grass, minor products etc., and services rendered; (vi) annual audit of VRMC accounts through a Chartered Accountant and (vii) established linkages with banks for credit facilities.***

2. ***Institutional Sustainability:*** This would means developing responsive and representative VLIs who: (i) understand project goals; (ii) facilitate democratic decision-making; (iii) are skilled in conflict resolution; and (iv) establish inter-institutional linkages and rapport.

   There is also need to have federation of VRMCs to: (i) facilitate cross learning; (ii) address policy/advocacy/networking issues (macro and micro level); (iii) explore and establish linkages with other Government programmes; and (iv) monitor and support activities undertaken by VLIs under HCFP.

3. ***Need for effective and action oriented linkages*** *with* line departments, lead banks, NGOs, and *Panchayati Raj* Institutions.

7.7 Social Issues

Broadly, it is important for a VRMC to understand that its role is not limited to forestry and environment, but goes much beyond it to touch the lives of people in a simple but effective manner. It becomes essential to widen the horizon to understand and address social issues that affect the community. VRMCs need to be involved in social issues related to women, men, poor, backward classes handicapped, old, youth, children etc. It can proactively play a crucial role in facilitating a change towards betterment for the community through: (i) sensitization; (ii) capacity building; (iii) organising seminars/ workshops at village level; (iv) awareness generation; (v) liaison with Government departments; (vi) establishing linkages with financial institutions, NGOs, technical institutes, etc; (vii) working in close collaboration with *Panchayati Raj* institutions, SHGs and other village institutions; (viii) organising regular health camps; and (ix) facilitating cleanliness drives etc.

7.8 Water Resources

Given the village water resources, with the project having renovated some structures and constructed new ones, it is important for the VRMC to come forward and actively participate in managing water resources. To facilitate this: (i) the VRMC must motivate the village community to actively participate in cost sharing in the form of material, labour and cash; (ii) the VRMC must ensure monitoring during renovation and construction; (iii) once the structure is complete, the families/households that will benefit from water thus made available must form a water user group, charging fees from the members for use of water; (iv) once the benefits as a result of use of this water start accruing, some amount from earnings must go the VRMC fund to be kept aside for maintenance of these structures; and (v) user groups must acknowledge that VRMC is the apex body created under the project, so some amount must go into the common pool of the VRMC to be used for common social development activities of the village.

8. SELF-HELP GROUPS

The uniqueness of Haryana Community Forestry Project lies in its participatory management methodology and approach to enhance the stake of people in the entire process of planning, implementation, monitoring and management of project interventions and sustainability of impacts beyond its intervention period. The project has laid emphasis on establishment of community based institutional arrangements such as VRMCs and Self-Help Groups to enhance the stake and capability of people, especially women.

Self-Help Groups have been formed in different villages for social mobilization of women. This approach has given an opportunity to women to free themselves from isolation and exploitation. Regular training is conducted to develop and enhance their skills to run their organizations.

8.1 Community Organisation

Formation of Self-Help Groups was started in the year 2000 as a strategy for enhancing women's participation in community decision making and as a vehicle for their social and economic empowerment. The project has formed 180 SHGs in 101 villages, with total membership of around 2,150. The majority of SHGs formed are for women of Scheduled Castes **(SC)** and Other Backward Classes **(OBC)**, but other disadvantaged groups, as well as unemployed youth are also considered. There are only three men's SHGs and the rest are exclusively for women.

The cumulative savings of the members stand at Rs. 8.6 million. Cumulative inter-lending among members for productive purposes and emergency and domestic needs is Rs. 18 million. The interest earned by members is to the tune of Rs. 2.1 million (all figures above as of 31.3.2008). Economic independence through savings has generated a sense of security, self-respect and pride to the members. For long-term sustainability and linkage with various institutions these SHGs have clubbed themselves into Cluster Associations. One regional federation (Janak Federation in Jatusana), ten Cluster Associations and an apex federation have been formed as registered societies.

These SHGs have provided women a collective forum and expanded their social relationship network. Initially members have been imparted training of SHG concept and management and skill up-gradation. They meet once or twice a month to discuss various issues related to women and overall development of the village. It has led to their economic empowerment through savings and initiation of micro-enterprises at individual and joint levels, functional literacy training, organic farming by promoting vermi-composting and capacity building through various training and exposure visits. After initial six months, if the performance of the SHGs is satisfactory, they are provided a matching grant of Rs. 2,500 to boost their morale, the only direct monetary benefit given to SHGs by the project.

8.2 Social Empowerment and Actions Taken

Increased awareness and knowledge about the outside world has brought changes in the behaviour and attitude of women. SHG members focus on

protection of the girl child, mother and child health care, family planning, sanitation, better education of their children, various problems of the village like drinking water, functioning of schools, alcoholism etc. Cohesion and collective strength are their key capabilities. They can influence the community, *Panchayat* and service providers, easily when they are united. Members of Self-Help Groups have taken social or community action that has influenced State Government officials and the community for holistic development, of the village and women in particular. Main actions accomplished are sanitation awareness in the village, solution of drinking water problems, conflict resolution, help to marry poor girls, improvement in quality of mid-day meals in schools, correct conduct of school teachers, health awareness camps and linkage with various institutions for the welfare of women.

Self-Help Groups have started taking initiatives for providing justice to village women, especially the widowed and the poor. They have thus settled a number of conflicts at their level (Rawalwas Kalan, Bharaf, Dhana Ladanpur, Jatusana Division). This shows the strength of the members for conflict resolution and their spirit for peace and justice in the community.

Members' access to credit has significantly contributed to the process of increasing their presence and recognition at household and community levels. Women constitute one-third members of the VRMCs and participate right from formulation of village micro-plans up to implementation and monitoring of project activities.

Social awareness and their enhanced abilities to take decisions have motivated women to contest elections in *Panchayats* and become a *Panch* or *Sarpanch*. During State *Panchayat* elections in April 2005, 33 women *Panches/Sarpanches* were elected from amongst the SHG/VRMC members. It has equipped them with confidence to take major decisions about their community.

Rural women who are part of Self-Help Groups are provided support in their functional skills through a literacy programme at the village level. Functional literacy intervention was imparted through multi-media computer package and supplemented using primers. Women selected from amongst the interested illiterate and semi-literate showed lot of interest and learned with great enthusiasm. 1450 members from 135 SHGs have undergone literacy training. Realising the importance of education, other group women decided to send their girls to school. They also talked about it amongst other women of the village and encouraged them to send their girls to school.

Social and community action taken by various Self-Help Groups is indicated below, as of January 2008. Altogether, 1300 different actions have been taken.

129 groups promoting health awareness

104 groups addressing sanitation/pollution issues

104 groups improving mid-day school meal

80 groups assisting old people to get pension

75 groups campaigning for organic farming

73 groups engaged in literacy campaigns

72 groups correcting issue of BPL cards

68 groups campaigning against use of polythene bags

66 groups promoting girls' education

55 groups assisting marriage of poor women

50 groups involved in social fencing of plantations

47 groups celebrating birth of girl child

43 groups solving drinking water problems

42 groups helping poor widows/women

42 groups helping handicapped

40 groups availing of Agriculture Department grants for vermi-composting

31 groups assisting BPL/SC women with stitching opportunity

30 groups campaigning against girl foeticide

29 groups with actions against sale/consumption of liquor

26 groups promoting marriage without dowry

22 groups solving problems with teachers

21 groups advancing good use of Panchayat funds

19 groups electing Panch/Sarpanch

17 groups resolving village conflicts

9 groups engaged in improvement of village road/streets

8 groups assisting supply of gas cylinders

5 groups solving problems with electricity supply

4 groups engaged in johad rehabilitation

4 groups engaged in animal health camps

2 groups engaged in bio-gas plant

2 groups appealed under Right to Information Act

2 groups saved the life of a starved boy

8.3 Income Generating Activities

All 180 SHGs are involved in income generating activities, financed from inter-lending of their group savings. SHGs are running an average of 5-6 different kinds of microenterprises each. Cumulative net income over 6 years from microenterprises operated by members of Self-Help Groups is Rs. 42.5 million, most of it from dairy, vermi-composting, shop keeping and tailoring. Net income is continuously increasing, from Rs. 5.9 million in 2005-06 to Rs. 14.3 million in 2006-07 to Rs. 18.5 million in 2007-08. Dairy, specially propagated by the project as a feasible land-based IGA, is the activity generating most income and also the activity engaging most members, 850 women.

Equally important is production of vermi-compost and organic farming. These women have actually pioneered vermi-composting in Haryana. The project has specially propagated vermi-composting, which promotes organic agriculture/soil improvement and which has moreover benefited project nurseries and village tree plantations as some compost was also bought by the project. Village workshops for farmers and SHGs have been arranged, with the twin aim to promote organic farming and to market SHG surplus stock of vermi-compost. The workshops have often been so successful that SHGs sold all their stock of vermi-compost to local farmers and were unable to meet with the project's own demand for compost. Organic farming by SHG members themselves is a common feature all over the project area.

Table 6: Income Records of Income Generation Activities with highest income

Activity	Income (Rs.) up to 31.3.2008
Dairy	18,368,264
Vermi-composting (excluding income from organic farming)	5,856,996
Various kinds of shops (grocery, general store, cosmetic, etc.)	5,193,163
Tailoring, embroidery, stitching	3,717,889
Service activities (mid-day school meals, health, trainers, etc.)	1,688,820
Wooden bead making	1,624,890

The following IGAs have been taken up by 180 SHGs:

Vermi-composting
Animal husbandry/Dairy
Various kinds of shops
Vegetables/organic farming
Tailoring/embroidery
Washing powder/soap making
Service activity (training, health, etc.)
Durry weaving
Medicinal plants
Cattle feed business
STD booths
Flour grinding
Sweet box making
Papad and *bari* making (snacks)
Sunflower seed extraction
Pickles/fruit preservation
Artificial jewellery
Candle making
Basket making
Tie-and-dye
Bead and bangle making
Rope making
Floriculture
Mushroom cultivation
Drama performances
Plaster of Paris toys
Doll making
Sweet making
Video renting
Paper bags/envelopes
Book binding
Poultry
Bag making
Basket making
Door-to-door trading
Clothes business
Spice making
Forest protection
Organic pesticides
Pottery
Interlock stitching
Orchard
Bee-keeping
Furniture making
Knitting
Jewellery
Phenyl making
Horse cart
Fish farming
Lacquer work
Restaurant

8.4 Protection of Environment

Women members clearly understand the project objective to improve the natural environment and maintain land fertility through sustainable management of natural resources. They have successfully worked for awareness and spread of organic farming. So far about 800 members have adopted it and reduced use of chemical fertilizers. Sanitation camps are being organized by groups for improved environment and a "no to polythene" message is being spread actively.

Women groups have started protecting trees plantations in their villages. They are engaged in distribution of fruit plants to households. Smokeless *Chulhas*

being used by women are proving very useful in reducing air pollution and fuel consumption as well as improving their health. SHGs have also been engaged in development of common property resources like *johads* and *gaushalas* (village ponds and cattle pens). 7 *gaushalas* and 13 *johads* have been upgraded with the involvement of SHG Cluster Associations.

8.5 Capacity Building and Training

The peculiarity of the project lies in its efforts towards capacity building of SHGs through training and exposure, particularly in areas of income generation and group and credit management. A majority of women organized into SHGs have received training and exposure on the entire process of vermi-composting. Members have learnt about organizing meetings, accounting system, credit extension and repayment procedures, proceedings writing, reconciliation of money transactions and bank level transactions through various training.

SHG members are establishing linkages with various other institutions in the village like VRMC, *Panchayat* and District administration resulting in repair of village streets, establishment of a milk society, artificial insemination of cattle etc (village Budian).

Women link workers (villages Balsamand, Bakrainwali and Banawali in Hisar Division) have become resource persons for development projects based on community participation. They are contributing a lot for the holistic development of the community in project villages and also under a Japan Bank of International Cooperation **(JBIC)** sponsored project in the State. Excellence, spirit to learn more is the story of many such members and groups in the project villages.

8.6 Future Vision

The project has made a significant contribution to women's empowerment, through formation of SHGs and other interventions. Many groups have achieved remarkable success and new women leaders have emerged. There is a great sense of pride and ownership among the groups who have reaped benefits from working collectively. The benefits obtained from income augmentation activities, in particular, have been quite spectacular in most groups, though it has not been possible to replicate this success everywhere.

On an overall basis, about two thirds of the total SHGs have stabilised and are performing their routine activities without any problems and external assistance. These groups are most likely to sustain and grow in the years to follow. Close to 60% of the SHGs have been performing very well and could be categorized as "good". Of the remaining, 38% are "average" performers while 3% are weak and need support for routine group activities.

A self-assessment SWOT analysis was made by the SHGs. Unanimous decision making, regular savings and actions on social issues were listed as strengths by practically all groups, with the majority of SHGs also including linkages, marketing, inter-lending, responsible members and good cooperation amongst members as other strengths. The weaknesses identified are by far fewer than the strengths; however, lack of interest of some members, irregularities in savings of a few members, lack of linkages, lack of responsibility of some members and

marketing problems are weaknesses that negatively affect between one third and half of the groups.

Basically all groups view linkages with various Government schemes and actions to give help to the poor and the needy as windows of opportunity, and above two thirds of SHGs want to avail of future training opportunities. Lack of family support is seen as the main threat, identified by 60% of the groups, and around half of the SHGs have also included lack of cooperation from outsiders, dominance by men and lack of support from the society at large as threat factors to consider.

The main impression left by the SHG SWOT analysis is that strengths and opportunities outweigh weaknesses and threats and that there is an impressive level of enthusiasm amongst the SHG members. Though weaknesses and threats cannot be disregarded in the final reckoning, HCFP would leave behind vibrant women-led grassroots institutions if the three-tier structure of village level groups, cluster associations and an apex federation formed under the project continues to work with a sense of purpose post-project.

Cohesion and collective strength has lead to the recognition and self-esteem of women. Along with positive changes in the level of confidence, women have witnessed the growth of their SHGs in terms of their group capital, individual savings, income generation, inter-lending and its impact on their social and economic development. They wish to continue and scale up campaigns against bad social practices and become a force for development in their village and community. To make this possible, on a sustained basis, the project is encouraging SHGs to organize into Clusters and Federations so as to ensure their institutional and financial stability, thus helping them realize the ultimate goal of a self-reliant rural society with self-governance in a healthy natural environment.

9. AFFORESTATION

The various afforestation models that are aimed at reversing the process of degradation through restoration of vegetal cover focused on the needs of the community for fuel, fodder, timber, fruit and other minor products on a sustained basis. The project kept in view that the species planted were suitable to the site and met the diverse needs of the people as identified during PA and micro-planning stages.

The project interventions have mainly focused on degraded wastelands, village common lands, farmlands, homestead plots, institutional lands, riverbanks, roadside plantations, and areas unsuited for agriculture including private lands. With specific emphasis on plantations and their management, the project has dealt holistically with the inter-related elements of land, water, trees, crops, livestock and livelihood systems of people.

9.1 Plantation Models

The various plantation models with their physical targets as per OWP are shown in **Table 7.**

Table 7: Plantation Models with Physical Targets

Plantation Models	Physical Targets as per OWP
Village Woodlots	Establishment of Village Woodlots of 7,400 ha in *Panchayat* lands, village *Shamlat* lands (jointly owned by several villagers), institutional lands and along riverbanks.
Sand Dune Fixation	Planting of 5,000 ha* of moving sand dunes (Sand Dune Fixation), both on common and private lands.
Tree Groves	Establishment of circular and linear Tree Groves (Roadside plantations) over an area of 200 ha (one circular Tree Grove is 0.08 ha and 1 km of linear Tree grove is 0.7 ha),
Farm Forestry	Farm Forestry plantations over 5,300 ha of private farmland belonging to small and marginal farmers.
Poplar Planting	Planting poplar on 5,000 ha of prime agricultural land in four northeastern districts.
Kitchen Gardens/ Homestead Plots	Establishment of 36,000 Kitchen Gardens over an approximate area of 180 ha.

* Revised by addendum 3 to the Financial Agreement

About 100 different species were planted under various plantation models **(Table 8)**, but the most common species planted (97½% of all) are: *Eucalyptus*, Poplar, Israeli Kikar *(Acacia tortilis), Ailanthus,* Shisham *(Dalbergia sissoo),* Kikar *(Acacia nilotica),* Jand *(Prosopis cineraria),* Khair *(Acacia catechu), Jatropha curcas,* Amla *(Emblica officinalis),* Amrood *(Psidium guava)*, Neem *(Azadirachta indica),* Bakain *(Melia azedarach),* Ber *(Zizyphus mauritiana),* Papita *(Carica papaya),* Papri *(Pongamia pinnata),* Nimboo *(Citrus aurantifolia),* Ronjh *(Acacia*

leucophloea), Anar *(Punica granatum),* Roheda *(Tecomella undulata)* and Jamun *(Eugenia jambolana)*. Various fruit tree species constitute about 7½ % of all seedlings. A total of 27,151,627 seedlings have been planted during the project period (excluding gap filling to beat mortality).

9.1.1 Village Woodlots

Village woodlots have been established over an area of 8,338.4 ha of *Panchayat* and village *Shamlat* land (jointly owned by several villagers), riverbanks and institutional lands, to provide grass, fuelwood, small timber and fruits and at certain locations to stabilize river banks. Planting was done at a spacing of 4 x 2.5 m except in case of fruit plants, which were spaced at 6 x 6 m with interspaces being used for raising legumes/grasses to meet immediate fodder requirements of community livestock.

A total of 8,263,076 seedlings were planted in 318 villages. Financial responsibilities for plantations established by the project were handed over to the community for further management after three years of planting.

9.1.2 Sand Dune Fixation

This project component was aimed at stabilizing and improving the productivity of 5,000 ha of moving sand dunes on community and private land in the western project districts. Suitable species of fuelwood, fodder, oilseeds and fruits were planted at a spacing of 4 x 2.5 m (6 x 6 m for fruit trees) over an area of 5,038.85 ha in 160 villages. Castor, *Cenchrus* and/or legumes were raised as an intercrop to provide early and intermediate income.

The species most commonly used were *Acacia tortilis, Ailanthus, Dalbergia sissoo, Jatropha curcas, Acacia nilotica, Prosopis cineraria, Emblica officinalis, Melia azedarach, Psidium guava, Azadirachta indica, Zizyphus mauritiana, Citrus aurantifolia, and Punica granatum,* besides others. A total of 4,045,539 seedlings have been planted during the project period.

Typical sand dunes have been levelled in a majority of villages for raising agricultural crops, such areas being irrigated by sprinklers. Due to non-availability of sand dunes in some project villages, cultivated sandy plains were taken up for afforestation with suitable species at spacing of 5 x 4 m or 6 x 6 m as against 4 x 2.5 m followed earlier. This modified spacing would allow farmers to continue with their agricultural crops.

The project would maintain these plantations for three years after planting, when they would be handed over to private owners, with about 2% being *Panchayat* land which would revert to the community.

Table 8: Species Planted

S. No.	Local Name	Botanical Name	S. No.	Local Name	Botanical Name
1.	*Ailanthus*	*Ailanthus excelsa*	34.	*Gudal*	*Hibiscus rosacinanisis*
2.	*Aliyar*	*Dodonea viscose*	35.	*Gulab*	*Rosa spp.*
3.	*Aloe Vera*	*Aloe Vera*	36.	*Gullar (Gular)*	*Ficus glomerata*
4.	*Aloo Bukhara*	*Prunus Communis*	37.	*Gulmohar*	*Delonix regia*
5.	*Amaltash*	*Cassia fistula*	38.	*Gundani*	*Cordia rohtii*
6.	*Amla*	*Emblica officinalis*	39.	*Harar*	*Terminalia Chebula*
7.	*Amrood*	*Psidium guava*	40.	*Imli*	*Tamrindus indica*
8.	*Anar*	*Punica granatum*	41.	*Israeli Kikar*	*Acacia tortilis*
9.	*Anjir*	*Ficus plamata*	42.	*Jaal*	*Salvadora oleoides*
10.	*Arjun*	*Terminalia arjuna*	43.	*Jamun*	*Syzygium cumini*
11.	*Aru*	*Prunus persica*	44.	*Jand*	*Prosopis cineraria*
12.	*Ashwagandha*	*Withania somnifera*	45.	*Jarul*	*Lagerstroemia indica*
13.	*Bahera*	*Terminalia belerica*	46.	*Jatti Khatti*	*Citrus jambhiri*
14.	*Bakain*	*Melia azedarach*	47.	*Jhanjura*	*Baulinia malabarica*
15.	*Bamboo*	*Dendrocalamus strictus*	48.	*Jungle Jalebi*	*Inga dulces*
16.	*Bargad*	*Ficus bengalensis*	49.	*Kachnar*	*Bauhinia variegata*
17.	*Bach*	*Acorus calamus*	50.	*Kadam*	*Anthocephalus kadamba*
18.	*Bel Pathar*	*Aegle marmelos*	51.	*Kaner*	*Nerium odorum*
19.	*Ber*	*Zizyphus mauritiana*	52.	*Karonda*	*Carrisa spinarum*
20.	*Bhendi*	*Thespesia populnea*	53.	*Kasood*	*Cassia siamea*
21.	*Bougainvillea*	*Bougainvillea*	54.	*Kathal*	*Artocarpus integrifolia*
22.	*Cassia*	*Cassia glauca*	55.	*Khair*	*Acacia catechu*
23.	*Chittagong wood*	*Chukrasia tabularis*	56.	*Khajoor*	*Phoenix sylvestris*
24.	*Champa*	*Michelia champaca*	57.	*Khathiphal*	*Kigelia pinnata*
25.	*Chandni*	*Jabernaemontana divaricata*	58.	*Kikar*	*Acacia nilotica*
26.	*Chikku*	*Achras zapota*	59.	*Kinnu*	*Citrus spp.*
27.	*Cut Sagwan*	*Heterophragma adenophyllom*	60.	*Komhar*	*Gmelina arborea*
28.	*Dalmoth*	*Acacia auriculiformis*	61.	*Lasura*	*Cordia dichotoma*
29.	*Eucalyptus*	*Eucalyptus tereticornis*	62.	*Leechi*	*Nephelium litchi*
30.	*Falsa*	*Grewia sapida*	63.	*Malta*	*Citrus spp.*
31.	*Fransh*	*Tamrix aurticulata*	64.	*Mango*	*Mangifera indica*
32.	*Giloy*	*Tinospora malabarica*	65.	*Mausami*	*Citrus spp.*
33.	*Grapes*	*Vitis repanda*	66.	*Mehandi*	*Lawsonia inermis*

S. No.	Local Name	Botanical Name
67.	*Mesquite*	*Prosopis juliflora*
68.	*Maulsori*	*Mimusops elengi*
69.	*Mor Pankhi*	*Jhuja sylvestris*
70.	*Nashpati*	*Pyrus communis*
71.	*Neem*	*Azadirachta indica*
72.	*Nimboo*	*Citrus aurantifolia*
73.	*Pahari Pipal*	*Sapium sebiferum*
74.	*Papita*	*Carica papaya*
75.	*Papri*	*Pongamia pinnata*
76.	*Peltophorum*	*Peltophorum peterocarpum*
77.	*Pilkhan*	*Ficus virens*
78.	*Peepal*	*Ficus religiosa*
79.	*Poplar*	*Populus deltoides*
80.	*Ratanjot*	*Jatropha curcas*
81.	*Roheda*	*Tecomella undulata*
82.	*Ronjh*	*Acacia leucophloea*
83.	*Safed dhak*	*Erythrina suberosa*
84.	*Sagargota*	*Caesalpinia app.*
85.	*Sagwan*	*Tectona grandis*
86.	*Saptparni*	*Alstonia scholaris*
87.	*Semel*	*Bombax ceiba*
88.	*Shahtut*	*Morus alba*
89.	*Shisham*	*Dalbergia sissoo*
90.	*Silver Oak*	*Grevillea robusta*
91.	*Siris*	*Albizza lebbek*
92.	*Suhanjna*	*Moringa oleifera*
93.	*Subabool*	*Leucaenea leucocephala*
94.	*Toon*	*Cedrela toona*
95.	*Tulsi*	*Ocimum sanctum*
96.	*Willow*	*Salix spp.*

9.1.3 Tree Groves

Circular Tree Groves were planted on *Panchayat* lands near ponds, bus shelters, *Chetna Kendra* compounds and on village peripheries etc., to provide much needed shade and to create tree awareness in the community. These circular groves, each of 0.08 ha (19 trees) were planted at suitable intervals. Additionally, in many villages linear tree groves along village roads (roadside plantations) were also established, planting being done at a spacing of 6 m. A total of 2,012 circular tree groves (one circular tree grove is 0.08 ha) and 1697.5 km of linear tree groves (roadside plantations) (one km of linear tree grove is 0.7 ha) have been established in 329 villages over an area of 1347.3 ha.

The species most commonly used were, *Dalbergia sissoo, Emblica officinalis, Melia azedirach, Azadirachta indica* and *Ficus,* besides others. A total of 319,068 seedlings were planted in these groves.

9.1.4 Farm Forestry

Farm Forestry is aimed at privately owned farmlands to augment wood supplies and to reduce pressure on Government forests. Seedlings of suitable fuelwood, fodder, fruit and small timber species were provided to the farmers for planting on field boundaries or in blocks. Farmers bore all costs of seedling transportation, planting and aftercare.

The main species delivered to the farmers included: *Eucalyptus*, *Acacia tortilis, Ailanthus, Dalbergia sissoo, Jatropha curcas, Acacia nilotica, Prosopis cineraria, Acacia catechu, Emblica officinalis, Melia azedirach, Psidium guava, Azadirachta indica, Zizyphus mauritiana, Citrus aurantifolia, Acacia leucophloea, Carica papaya, Punica granatum* and grapes. A total of 10,470,669 seedlings were delivered to/planted by the farmers in 323 villages.

An area of 10,525.5 ha was covered. As a guide 1000 plants were considered to cover one hectare of plantation.

9.1.5 Poplar Planting

Improved clones of poplar for raising plantations on prime agricultural lands were provided to the farmers. New clones of *Populus deltoides* (L-35) developed by **WIMCO** (Western India Match Company) were obtained from them and are being propagated in departmental nurseries at Seonthi (Kurukshetra District) ever since. These clones were supplied to the farmers for planting on their agricultural fields. These plantations covered an area of about 6,944.44 ha on larger farms in the four north-eastern project districts of Panchkula, Ambala, Kurukshetra and Yamunanagar. Each ha had an initial stocking of 500 plants at a spacing of 5 x 4 m to allow for inter-cropping.

A total of 3,472,240 seedlings were provided to farmers in 127 villages. Technical assistance was provided for raising and maintaining these plantations.

9.1.6 Kitchen Gardens/Homestead Plots

Like tree groves, Kitchen Gardens/homestead plots were intended to create awareness in tree planting and other benefits to individual households. This also improved the living and nutritional standards of the villagers.

The approach was to provide five tall plants of grafted fruit trees per homestead and some good vegetable seed. 36,000 homesteads covering an area of approximately 180 ha were targeted for this component.

Seedlings of *Emblica officinalis, Psidium guava, Zizyphus mauritiana, Citrus aurantifolia, Carica papaya, Punica granatum,* and grapes besides other species were given to the villagers. A total of 123,545 kitchen gardens/homestead plots were established in 332 villages, wherein 581,035 seedlings have been supplied. Villagers were responsible for maintenance of these seedlings.

9.2 Physical Achievements and Survival

The project has achieved 112.7% of the total OWP target for Village Woodlots, 198.6% for Farm Forestry, 138.9% for poplar plantation, 674% for Tree Groves, 343% for Kitchen Gardens and 100.8% of the target (as revised by addendum 3 to the FA) for Sand Dune Fixation.

The physical achievements in respect of various plantation models are given in **Table 9**.

Table 9: Physical Achievements of Afforestation

S No	Plantation Model	Unit	Target as per OWP	Actual achievement up to year 9 (2007-2008)		
				Area Planted, ha	No. of villages covered	Seedlings planted/ Delivered (Nos)
1.	Village Woodlots	ha	7,400	8,338.4	318	8,263,076
2.	Sand Dune Fixation	ha	5,000**	5,038.9	160	4,045,539
3.	Tree Groves	ha	200	1,347.3	329	319,068
4.	Farm Forestry	ha	5,300	10,525.5	323	10,470,669
5.	Poplar Planting	ha	5,000	6,944.44	127	3,472,240
6.	Kitchen Garden/ Homestead Plots	ha	180	617.8	332	581,035

** Revised through Addendum 3 to the Financing Agreement

Note: In case of Tree Groves, 2012 circular tree groves and 1,697.5 km of linear tree groves (roadside plantations) were established. 1 circular tree grove is 0.08 ha and 1 km of linear tree grove is 0.7 ha.

Tree survival surveys for each of the forestry models and for each year of plantation were carried out jointly by HCFP staff and micro-project monitoring teams appointed by the VRMCs. Village teams have after initial instructions carried out a full survey of all plantations with HCFP staff, checking samples for accuracy.

Tree plantation models managed jointly between HCFP and the VRMC (Village Woodlots, Tree Groves) or farmers (Sand Dune Fixation) show that survival for jointly managed models is at a steady high level over the years due to gap fillings **(Table 10)**. It is also encouraging that survival rates for the first Woodlot, Tree Grove and Sand Dune plantations, where financial responsibility has now been handed over to VRMCs and farmers, respectively, after three years of project maintenance, have not been much reduced since handing over (survival after 4-7 years). Woodlot survival remains at a highly satisfactory 74-80%, tree grove survival is 82-89%, and 4-7 years old sand dune plantations, now managed by farmers themselves, have an acceptable survival of 55-68%.

For models managed by farmers themselves (Multi-species Farm Forestry, poplar, Kitchen Gardens), survival rates are expected to decrease over the years, due to adverse agricultural practices, inclement conditions like drought and lately severe frost and other natural mortality with no gap filling done by the farmers. Survival rates for poplar and farm forestry count trees harvested for sale as survived trees, but premature felling of trees for sale is included as mortality.

Table 10: Survival Rates of Plantations as of winter 2007-2008

A. Survival Rates after 1, 2, 3, 4, 5, 6 and 7 Years for 2000-2001 Plantations

Management	Plantation model	After 1 Year	After 2 Years	After 3 Years	After 4 Years	After 5 Years	After 6 Years	After 7 Years
Joint with VRMC	Village Woodlot	86%	83%	81%	78%	75%	65%	74% [2]
	Tree Grove	99%	96%	89%	91%	87%	79%	82%
Joint with Farmer	Sand Dune Fixation	61%	56%	62%	54%*	72%*	60%	55%
Farmer alone	Multi-Species Farm Forestry	40%	35%	32%	24%[1]	23%[1]	30%*	39%*
	Poplar	61%	54%	45%[1]	49%	36%[1]	45%*	53%*
	Kitchen Garden	25%	22%	19%	13%	9%	8%	7%

[1] Not fully discounting premeditated harvesting of trees.

[2] After additional gap filling.

* Sand Dune Fixation, Farm Forestry and Poplar Survival Figures based on samples of 10% farmers, with variation in samples between the years, which explains increased survival in a subsequent year.

B. Survival Rates after 1, 2, 3, 4 , 5 and 6 years for 2001-2002 Plantations

Management	Plantation model	After 1 Year	After 2 Years	After 3 Years	After 4 Years	After 5 Years	After 6 Years
Joint with VRMC	Village Woodlot	82%	87%	84%	80%	73%	77% [2]
	Tree Grove	99%	96%	94%	93%	82%	85%
Joint with Farmer	Sand Dune Fixation	78%	81%	77%	77%	64%	68%*
Farmer alone	Multi-Species Farm Forestry	40%	34%	26%*	29%*	28%	31%*
	Poplar	54%	50%	32%[1]	32%	39%*	37%
	Kitchen Garden	23%	21%	14%	11%	7%	7%

C. Survival Rates after 1, 2, 3, 4 and 5 years for 2002-2003 Plantations

Management	Plantation model	After 1 Year	After 2 Years	After 3 Years	After 4 Years	After 5 Years
Joint with VRMC	Village Woodlot	88%	86%	82%	75%	78% [2]
	Tree Grove	99%	96%	94%	79%	82%
	Linear Tree Grove	80%	87%	85%	75%	76%
Joint with Farmer	Sand Dune Fixation	74%	76%	73%	64%	62%
Farmer alone	Multi-Species Farm Forestry	46%	36%	32%	34%*	34%
	Poplar	33%	28%*	32%*	25%	27%*
	Kitchen Garden	23%	23%	18%	9%	7%

D. Survival Rates after 1, 2, 3 and 4 years for 2003-2004 Plantations

Management	Plantation model	After 1 Year	After 2 Years	After 3 Years	After 4 Years
Joint with VRMC	Village Woodlot	89%	84%	78%	80%
	Tree Grove	96%	95%	82%	89%
	Linear Tree Grove	88%	87%	78%	83%
Joint with Farmer	Sand Dune Fixation	81%	76%	72%	68%
Farmer alone	Multi-Species Farm Forestry	42%	39%	38%	40%*
	Poplar	22%*	25%*	20%	17%
	Kitchen Garden	24%	16%	9%	8%

E. Survival Rates after 1, 2 and 3 years for 2004-2005 Plantations

Management	Plantation model	After 1 Year	After 2 Years	After 3 Years
Joint with VRMC	Village Woodlot	88%	83%	84%
	Tree Grove	97%	90%	90%
	Linear Tree Grove	92%	84%	84%
Joint with Farmer	Sand Dune Fixation	85%	80%	77%
Farmer alone	Multi-Species Farm Forestry	50%	44%	43%
	Poplar	42%	37%	33%
	Kitchen Garden	29%	18%	15%

F. Survival Rates after 1 and 2 years for 2005-2006 Plantations

Management	Plantation model	After 1 Year	After 2 Years
Joint with VRMC	Village Woodlot	88%	87%
	Tree Grove	92%	92%
	Linear Tree Grove	86%	85%
Joint with Farmer	Sand Dune Fixation	79%	79%
Farmer alone	Multi-Species Farm Forestry	60%	56%
	Poplar	53%	48%
	Kitchen Garden	29%	22%

G. Survival Rates after 1 year for all Plantation Years

Management	Plantation model	Survival after 1 year for plantations raised in:						
		2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Joint with VRMC	Village Woodlot	86%	82%	88%	89%	88%	88%	NA
	Tree Grove	99%	99%	99%	96%	97%	92%	97%
	Linear Tree Grove	-	-	80%	88%	92%	86%	89%
Joint with farmer	Sand Dune Fixation	61%	78%	74%	81%	85%	79%	NA
Farmer alone	*Farm Forestry*	40%	40%	46%	42%	50%	60%	68%
	Poplar	61%	54%	33%	22%	42%	53%	65%
	Kitchen Garden	25%	23%	23%	24%	29%	29%	30%

Farm Forestry survival after one year has improved significantly – from levels just above 40% in the first years to 50% in 2005-06, 60% in 2006-07 and 68% in 2007-08 – possibly as a result of the more proactive extension approach adopted by the project. Whereas poplar survival after one year was very satisfactory for the first two plantation seasons, there was a dramatic decline in survival for the subsequent two seasons, caused by a sudden slump in the market, which impelled farmers to prematurely fell their trees for panic sale of fuelwood use or simply neglect/uproot the transplant. Poplar prices have since recovered and there is a renewed interest in poplar and its survival – 65% survival after one year is the highest rate ever recorded. This shows the crucial importance of the market

in determining farmers' motivation for agro-forestry. Kitchen garden survival remains very low, but has shown signs of improvement with SHG involvement.

Where the farmer solely manages the model, there is an extremely high variation in survival both between villages and within villages, due to the highly variable attitude of the farmers. There are farmers who have experienced a tree planting culture over the past 20 years or more and where good tree management results in high survival rates. This is especially true in Yamunanagar District, where farmers have access to markets and timber, pulp and wood processing industries are fully operational. On the other hand, there are farmers in market-less districts who through their keen interest in tree planting have managed to maintain high survival rates even in arid agro-climatic zones.

9.3 Plantation Benefits

The quantum of employment generated under various plantation models and nurseries is indicated in **Table 11.**

Table 11: Employment Generated under Different Plantation Models

Plantation Model	Total No. of Workdays			
	Male	Female	Total	Scheduled casts of total work days
Village Woodlots	1,987,567	394,665	2,382,232	1,347,804
% of total workdays	83.4	16.6	--	56.6
Sand Dune Fixation	575,695	163,517	739,212	424,642
% of total work days	77.9	22.1	-	57.4
Tree Groves	216,438	39,143	255,581	142,615
% of total work days	84.7	15.3	-	55.8
Nurseries	577,330	213,468	790,798	385,909
% of total work days	73	27	-	48.8
Total	**3,357,030**	**810,793**	**4,167,823**	**2,300,970**
% of total work days	**80.5**	**19.5**	**-**	**55.2**

Earthwork, planting and maintenance for Village Woodlots, Sand Dune Fixation and Tree Grove models generated an employment of 3,377,025 workdays during the project period, constituting 81% of total employment. Labour in nurseries caused another 19% of employment generated (790,798 work days). Of the total employment (4,167,823 work days) created during the project period, 810,793 work days (19.5%) were for women and 2,300,970 work days (55%) for members of Scheduled Castes. 57% of the employment was for work in Village Woodlots.

The number of work days, in case of Scheduled Castes, for the three plantations models of Village woodlots, Sand Dune Fixation and Tree Groves varied around 57% of total work days though it was 49% for nurseries, indicating that a large number of scheduled castes were benefited through afforestation activities of the project. Similarly the work days for women varied from 15.3% to 22.1% for the three plantation models, though in case of employment in nurseries it was 27%, indicating that women prefer working in nurseries.

Benefits from common land plantations during 2007-08 amount to Rs. 13.7 million, of which 82% from grass collection. Other benefits include fuelwood from pruning, fruits and non-timber forest produce. Cumulative common land plantation benefits over the last seven years is Rs. 48 million, of which Rs. 41.4 million (86%) from grass collection.

Farmers are now reaping considerable economic benefits from farm land plantations through felling and sale of fast-growing trees. 4-7 year old poplars and eucalyptus, and also some ailanthus, have been sold for Rs. 37.3 million during 2007-08. Sales proceeds from fast-growing trees during years 7-9 combined stand at a level of Rs. 83 million.

9.4 Aftercare

As already stated, the project takes care of plantations on common land and sand dunes for three years and then it becomes the responsibility of the community to protect and maintain their natural resources in an effective and sustainable manner. This is of utmost importance for both HFD and the community, as it ultimately increases forest cover and wood production.

With a variety and multiplicity of species, it is important that the community, through village institutions like VRMCs, *Panchayats* and SHGs, takes the responsibility for maintenance and protection of plantations. To facilitate their effective management and protection by the community, the following points need attention.

- Plantations areas be clearly demarcated between different owners (private, *Panchay*at or Government) and should be known to VRMC and the *Panchayats* for effective maintenance and protection so that roles and responsibilities could be fixed accordingly.

- *Panchayat*/VRMCs/SHGs have to take up responsibilities for protection to check damages from fire, grazing and illicit removal of young crop and NTFP. VRMC/*Panchayat* could regulate this illicit removal through auctions.

- Regular thinning and pruning operations are to be carried out, with technical support and guidance of the Forest Department, for proper growth. Such removals will also generate some income for the VRMCs/*Panchayats*. VRMC will ensure that plants in tree groves are protected from damage by stray cattle and human beings. Linear Tree Grooves can be protected and maintained with the cooperation of local farmers who share their land near these areas.

- VRMC members should fix responsibility for voluntary patrolling and watchers be employed seasonally for protection. Women SHGs should be involved in protection, in villages where women get benefits from the plantation in the form of firewood or fodder.

- High value quality grafted fruit plants planted in close vicinity of houses under the Kitchen Garden component require frequent post-plantation care in the form of regular irrigation, hoeing/ weeding and use of fungicides for which individual farmers and women should be trained and made responsible.

- Irrigation is essential to boost growth, especially for short-rotation trees like poplar, *Ailanthus*, Bakain etc. If water is not available for regular irrigation, a minimum of two irrigations per year should be done, one during April – May, and the other before winter. The performance of the trees will be better if weeding and hoeing is carried out after the irrigation.

- Emphasis should always be on the use of resources within the village by the most dependent community members and any surplus should go to VRMCs/*Panchayats*.

- During the final harvest of the village woodlot, the sale proceeds should be used as: 25% by the VRMC for replanting the area and the balance by *Panchayat* for development purposes.

9.5 Nurseries

Cluster nurseries of suitable species were raised from the first year of the project to provide seedlings required for various plantations models. At least, one temporary nursery was set up in a cluster of 2 to 3 villages. The project encouraged the establishment of decentralised nurseries, to be managed by women (*Mahilla nurseries)*, for which they were trained. Cluster nurseries were also established for *Shisham (Dalbergia sissoo)*. Further, specialised nurseries for raising poplar plantations were started. One modern improved nursery (clonal nursery) for *Eucalyptus,* consisting of ten mist chambers, shade houses/hardening chambers and an open nursery was also established. The position with regard to nurseries is given in **Table 12**.

Table 12: Establishment of Nurseries

Year	***Type of Nursery***			
	Cluster	***Cluster (Shisham)***	***Poplar***	***Modern Improved (Clonal)***
1999-2000	16	4	2	-
2000-2001	21	6	4	1
2001-2002	30	-	8	-
2002-2003	38	-	11	-
2003-2004	49	-	9	-
2004-2005	44	-	4	-
2005-2006	18	-	4	-
2006-2007	14	-	-	-
Total	***230***	***10***	***42***	***1***

Species raised in cluster nurseries include, among others, *Ailanthus, Tecomella, Prosopis, Holoptelia,* Kijelia, Israeli Kikar *(Acacia tortilis),* Shisham *(Dalbergia sissoo), Jatropha curcas,* Kikar *(Acacia nilotica),* Jand *(Prosopis cineraria),* Khair *(Acacia catechu),* Amla *(Emblica officinalis),* Bakain *(Melia azedirach),* Amrood *(Psidium guava),* Neem *(Azadirachta indica),* Ber *(Zizyphus mauritiana),* Nimboo *(Citrus aurantifolia),* Ronjh *(Acacia leucophloea),* Papita *(Carica papaya),* Anar *(Punica granatum)*, grapes, etc.

Clones of *Populus deltoides,* namely, G-48, S7 C15 and L-3, developed by WIMCO which are reported to be disease resistant and have better acceptability with the farmers, were propagated in *popular* nurseries and distributed to the farmers. Cuttings of these clones are planted in the nursery (9,216 cuttings per acre at 60 cm x 60 cm spacing). These cuttings are kept in the nursery for one year when they attain a height of 5 to 6 m. The whole plant is then uprooted and planted in the field.

With regard to *Eucalyptus* while the majority of farmers planted seed raised *Eucalyptus,* available from the departmental nurseries, progressive farmers were able to procure cloned material from ITC Bhadrachalam Paper Boards Limited., as returns from these plantations are projected to be very high. Some small

farmers also showed inclination to plant *cloned Eucalyptus*, but availability of the material in the state was the main constraint.

Haryana Forest Department, since 1993, through its Research and Training Division, therefore, planted *Eucalyptus* plants of about 60 different clones, procured form BPL Secunderabad, at its research stations at Seonthi (District Kurukshetra) and Bithmara (District Hissar). Over the years more clones were added in testing and multiplication areas and the growth of these trees is closely monitored. Performance of some of the clones was found to be better than the plants of seedling origin and promised increased financial returns to the farmers.

The Department (HCFP) thereafter, in the year 2000, decided to create a facility for mass propagation of those clones, which showed promise. A modern improved technology nursery consisting of 10 mist chambers, shade houses/hardening chambers and open nursery was, therefore, established at Bir Seonthi, Kurukshetra District, in 2000-2001.

Initially four clones of *Eucalyptus teriticornis,* Nos. 03, 07, 10 and 130, were selected for mass propagation. Depending on success of the programme, like standardization of techniques and acceptability by the farmers, more promising clones were proposed for propagation. Recently clone Nos. 52, 99, 6 and 314 were added to the above list of four clones. Clonal *Eucalyptus* seedlings were sold to the farmers at Rs. 6.50 per plant. Further details regarding modern improved technology nursery are given in the paper entitled ***"Clonal propagation of Eucalyptus in Haryana: Experiences from two years of operation in mist chambers at Seonthi, District Kurukshetra" (Dhar 2003)***.

Tall plants for tree groves were raised, in project nurseries. Most of the grafted fruit plants for kitchen gardens were procured from the Horticulture Department, though some were raised in project nurseries.

9.6 Planned Clean Development Mechanism Project Activity

An afforestation area of 370 hectares of sand dune land belonging to 227 farmers in eight villages of Sirsa district has been defined for a carbon trading project under the Kyoto Protocol Clean Development Mechanism (CDM) under United Nations Framework Convention on Climate Change (UNFCCC). The proposed project would contribute value addition to inputs given by HCFP, with improved environmental and financial benefits for the village communities. A number of PRA exercises with stakeholder farmers were carried out, a farmers' society to implement the project has been registered, a project baseline was estimated and all land parcels to be brought under the project have been identified, formally committed and GPS mapped. A Project Concept Note and a Project Design Document have been prepared, assisted by local consultancy and a short-term international TA expert. The proposed CDM project has, after external validation, been submitted to the UNFCCC CDM Executive Board for final approval and registration. If approved by UNFCCC, this would be the first small-scale afforestation project activity under the Kyoto Protocol in the world.

10. WATER RESOURCES MANAGEMENT

Water is a major problem in the overall economic development of Shivaliks. These hills receive a mean annual rainfall of 1,200 mm, of which about 80% is received in three monsoon months. In general 65% of Haryana is arid and semi-arid and droughts are a recurring feature.

People in the Shivaliks are engaged in rearing livestock, with resultant grazing pressure on these hilly watersheds. Rain fed farming with crop failures is very common. The focus in this area, therefore, lies in the construction of water harvesting dams **(WHD)** and the protection of the concerned catchments with active collaboration of village institutions. Several projects including the WHD project at village Sukhomajri have demonstrated the technical feasibility, economic viability and social acceptability of harvesting surplus monsoon rainwater and its efficient use during the post-monsoon dry period for flood moderation and drought. It is felt that the only way to turn the physical features of the land and improve the socio-economic condition of the people in the Shivalik region is by harvesting surplus rainwater and its efficient use during the post-monsoon dry period. Improving water infrastructure is the logical entry point for bringing about change – both in transforming the means of livelihood from cattle rearing to cultivation and reducing the daily ordeal of women.

Water resource management is, therefore, of primary importance for agriculture and socio-economic development of the State. HCFP has tried to do this on a pilot scale by construction of water harvesting dams in the Shivalik region and rehabilitation of *Johads (*constructed in villages much earlier) in selected micro-watersheds for their development.

10.1 Water Harvesting Dams

The project has constructed 19 earth fill dams, as targeted for water harvesting in selected micro-watersheds in Ambala and Yamunanagar Divisions for agriculture development. These dams apart from irrigation would help elicit cooperation of people in rehabilitating degraded forest catchments.

As a result, ten dams in different villages of Ambala Division, namely Bharauli, Kaimbwala, Mirpur, Turon, Dhandion, Banswala, Mandappa, Mawas, Bhediwala, and Rana, and nine in villages of Yamunanagar Division, namely Ibrahimpur, Bhagwanpur, Thaska, Kathgarh, Kansli, Nanheri, Nawagaon, Rampur Gainda and Paniwala were built during 2000-01 to 2006-07 (**Table 13**). Details of these dams are given in **Table 14**.

Table 13: Water Harvesting Dams Constructed

Year of Construction	No. of dams Constructed	Project villages where dams were constructed	
		Ambala Division	Yamunanagar Division
2000-2001	2	Bharauli	Ibrahimpur
2002-2003	3	Kaimbwala Mirpur	Bhagwanpur
2003-2004	7	Turon Dhandion Banswal Mandapa	Kansli Thaska Kathgarh
2004-2005	5	Mawas Rana Bhediwala	Nanheri Nawagaon
2006-2007	2	--	Rampur Gainda Paniwala

The combined details of 19 dams constructed are as follows:

- Total catchment area: 1342 ha
- Total storage capacity: 328.6 ha.m
- Total command area: 1069 ha, owned by more than 700 farmers
- Total cost: Rs. 488 lacs
- Total labour cost: 402 lacs
- Economic life of each dam: approximately 25 years

The sites for the dams were selected carefully to ensure maximum storage of water and flow through gravity. The runoff from 1028 ha, of forestland was harvested in 17 WHDs (constructed up to 2004-2005) to create a water storage of 261 ha.m at a total cost of Rs. 421.93 lakhs, of which 77.6% were labour charges.

The dams were made following a complete social development process involving discussions, resolutions, PRA and need based micro-planning. The community generated a social fund varying from Rs. 30,000 to 55,000 before the system operated. The villagers carried out the digging and filling of water conveyance systems. All households including landless share water. Reservoir water is democratically auctioned every year. In case of village Bharauli the reservoir was auctioned for Rs. 18,000 in the first, Rs. 35,000 in the second and Rs.35, 600 during the third year of operation to the villagers of the same village with commitment to pay 50% of the auctioned money in advance, charge water rent to Rs. 10 per ha and maintain the system during the tenure of the contract. The VRMC accounts were opened in a bank and their records are regularly inspected. Regular training programmes and exposure visits were arranged for capacity building.

Table 14: Details of Water Harvesting Dams

Sl. No.	Year of Construction	Village	Forest catchment Area (ha)	Storage capacity (ha.ma)	Total height (m)	Top length of dam (m)	Total cost (Rs. In lacs)	Labour cost (Rs. In lacs)	Command Area (ha)
1.	2000-01	Bharauli	90	24.70	14.0	120	31.22	24.24	93.5
2.	2000-01	Ibrahimpur	30	13.25	9.0	129	8.80	5.94	52.5
3.	2002-03	Kimbwala	50	17.50	14.5	110	21.10	15.25	35
4.	2002-03	Mirpur	70	24.50	14.5	85	25.55	18.27	60
5.	2002-03	Bhagwanpur	26	9.10	12.0	140	16.46	12.45	20
6.	2003-04	Turon	65	15.53	14.7	117	28.62	22.00	50
7.	2003-04	Dhandion	31	9.86	14.0	96	17.10	13.27	45
8.	2003-04	Banswala	23	9.79	14.0	77	15.43	10.72	31
9.	2003-04	Thaska	25	5.10	12.0	70	12.18	8.46	40
10.	2003-04	Kathgarh	40	8.44	14.0	85	17.51	13.87	42
11.	2003-04	Kansli	32	7.07	12.0	94	14.23	10.56	43
12.	2003-04	Mandappa	145	15.61	15.0	79	33.96	20.11	70
13.	2004-05	Mawas	32	8.11	14.0	100	25.81	20.78	36
14.	2004-05	Bhediwala	46	13.83	14.0	110	30.97	23.02	32
15.	2004-05	Rana	54	19.54	14.0	95	25.58	15.38	60
16.	2004-05	Nanheri	145	29.97	15.0	210	19.50	44.30	67
17.	2004-05	Nawagaon	124	29.08	15.0	200	54.60	48.79	90
18.	2006-07	Rampur Gainda	230	44.70	15.75	181	57.10	48.23	165
19.	2006-07	Paniwala	84	22.95	16.0	165	32.15	26.66	37
		Total	***1342***	***328.63***			***487.87***	***402.3***	***1069***

Note: Labour component formed about 82.5% of the total cost

10.1.1 Sustainability of Dams

It was observed that several issues related to sustainability were not properly addressed while replicating the Sukhomajri model of water resources development. This was the primary reason for poor performance of the dams. The issues to ensure sustainability of project interventions are as under:

1. A simple reference manual on WHDs to which field staff could refer, was prepared as **(Dhar, Grewal and Bhirud, 2002)**. This manual outlined the entire methodology of dam construction including planning, design, preparation of cost estimates, construction and maintenance, community participation, formation of VRMCs and their role and responsibilities.

2. Baseline surveys of water harvesting dams, both catchments and command areas are detailed **(SPACE, 2002, 2003 and 2004)**.

3. Detailed dialogue with the community, assessing their needs and perceptions, level of commitment and formation of VRMCs, was made a pre-requisite for any WHD project. It was made clear that WHD would form a part of the village development plan and villagers have to actively participate in planning and execution and be responsible for its maintenance and operation.

4. To ensure effective participation and development of a sense of ownership, VRMCs were asked to generate a social fund of Rs. 30,000 through local collections and meet the cost of digging and refilling the water conveyance systems from this fund. The VRMCs would sell water to beneficiaries at mutually decided rate and generate funds for dam maintenance.

5. The biggest challenge of Shivalik watersheds is to ensure flow of sediment free water to reservoirs, lakes and ponds. Inadequate vegetative cover on young, loose friable and highly eroding soils cause pre-mature siltation of water bodies. The HCFP took adequate care to check the risk of silting by adopting vegetative and engineering measures in the drainage lines including construction of check dams and coffer dams. De-silting with community effort *(Sharamdan)* was organised once a year during summer months.

6. All labour for construction of dams is engaged from the village with the consent of VRMC, preference being given to backward communities (poor, landless and scheduled castes).

7. The village community would restrain from taking livestock for grazing in forestland and the VRMC Executive would exert social pressure to impose effective closure (social fencing).

10.1.2 Assessment of Dams

The assessment of dams is discussed as follows.

10.1.2.1 Economic Benefits

Of the 17 dams constructed during 2000-2001 to 2004-2005, the run-off harvested from seven sites was 100%, at four sites 78 to 91% and 58 to 70% at six sites. The harvested rainwater provides the facility of supplemental irrigation in the rain-fed command area of **867.1** ha, at a cost of **Rs. 48,660** per ha, compared to Rs. 1.2 lakhs per ha through canal irrigation. The cost per cubic meter of earth fill varied from a lowest of Rs. 40 to a maximum of Rs. 51.90 **(Anonymous, 2005)**. Evaluation of these dams (four dams) and their economic benefits with regard to crop yields and catchment areas are dealt with in detail **(PAU, 2002; SPACE, 2005 and 2005-2006)** in **Tables 15 and 16**.

An impact assessment of one of the first dams constructed by the project (Bharauli), focusing on increased crop and milk yield, has shown that all costs of construction and farmer investments have been recovered by increased crop and milk yield, through year-round irrigation, after only 3½ years of construction of the dam. The overall net return from the command area (93.5 ha) increased from Rs. 2.36 lakhs in 2001-02 to Rs 12.91 lakhs during 2004-05. Vegetable seed production became common after assured supply of water.

Further, the landless have benefited as invigorated village economy after irrigation. The 20 landless families of Bharauli have increased their income from farm labour four times compared to pre-irrigation baseline; they have doubled their ownership of cattle; half of them now have subsidiary occupations as against only one family before; 83% live in brick houses compared to only 10% four years before.

In village Mirpur, the monetary value of all crops increased 2.7 times in the second year of irrigation as compared to pre-irrigation baseline. Wheat remains the major crop, with doubled yield, while oilseeds and pulses earlier raised have to a large extent been replaced by more profitable onion crops (onion + onion seed) – production values rose from Rs. 7,000 to Rs. 260,000. Fodder production has increased six times.

Baselines for crop production in dam villages were established just before starting dam construction. The status of area under various crops, yield levels and crop production were again studied for Rabi and Kharif crops of 2006-07 in 17 villages. The change in net return per acre for some of the most important crops are summarised in **Table 15**. Farmers with rainfed agriculture were often ending up with negative returns prior to the dams (considering also the cost of own labour), but after the facility of irrigation was introduced benefits exceeed costs, with typically a dramatic increase in net return per acre. The table includes only crops with substantial acreage at both baseline and at present. Some crops of very high value, like vegetable seeds, are not included when they were not grown at baseline and the current acreage is more limited in size.

Table 15: Increase in net return/acre for major crops in villages with water harvesting dams

Village	Crop	Baseline (Rs.)	Current (Rs.)
Bharauli	Paddy	467	5,610
	Maize	-327	166
	Sorghum	190	2,107
Ibrahimpur	Wheat	-1,428	2,731
	Sugarcane	2,480	7,618
	Maize	-2,775	414
	Sorghum	-1,002	165
	Millet	2,488	10,980
Kaimbwala	Wheat	1,194	3,398
	Radish seed	-875	762
	Paddy	4,294	4,991
	Maize	-802	438
	Sorghum	-2,360	2,466
Mirpur I	Wheat	1,282	1,988
	Oats	4,600	14,894
	Paddy	3,400	7,204
	Maize	-614	140
	Sorghum	-2,204	753
Bhagwanpur	Wheat	3,951	4,615
	Sugarcane	11,255	17,813
	Barseem	-1,043	8,536
	Paddy	896	6,970
	Sorghum	-1,656	1,848
Toron I	Wheat	741	3,866
	Barseem	1,000	8,484
	Paddy	-272	7,429
	Maize	1,712	2,507
Dhandion	Wheat	2,786	3,892
	Paddy	-175	6,413
	Maize	-1,221	1,261
	Sorghum	-1,673	3,486
Banswala	Wheat	209	3,807
	Green onion	-3,637	37,067
	Barseem	1,560	17,465
	Paddy	578	4,429
	Sorghum	-1,892	3,075
Nawagaon	Wheat	1,890	4,482
	Paddy	-2,022	6,212
	Sorghum	1,290	580
Mirpur II	Wheat	963	2,712
	Maize	364	5,482
	Sorghum	-444	1,624
Mawas	Wheat	171	1,964
	Maize	-1,763	206
	Sorghum	-1,516	1,500
Toron II	Wheat	971	3,902
	Paddy	-2,080	6,294
	Maize	-762	1,005
Kathgarh	Wheat	1,040	4,785
	Sugarcane	7,100	12,929
	Barseem	740	5,000
	Paddy	-1,987	6,866
	Sorghum	-1,658	1,258
Kansli	Wheat	279	2,419
	Sorghum	-2,411	1,464
	Millet	32	2,850
Thaska	Paddy	1,608	7,853
	Maize	-300	1,037
	Sorghum	-2,037	1,565
Nanheri	Paddy	907	7,294
	Sorghum	-642	1,079
	Millet	1,766	4,661

Milk production has increased as a result of access to irrigated fodder (mainly barseem). The change in livestock status, milk yield and earning from sale of milk is given for two villages in **Table 16**.

Table 16.1: Livestock status and milk production in village Bharauli

Livestock statistics	Production during		% increase (+) or decrease (-)
	2001	2004	
Number of Livestock			
Buffaloes	335	393	+12.3%
Cows	82	79	-3.7%
Milk Yield (kg/day)			
Buffaloes	2.55	3.65	+44%
Cows	1.8	2.21	+22.8%
Value of milk sold/year by 89 families (lakh Rs.)	9.14	12.97	+41.9%
Value of mild sold/family/year/ (Rs.)	11,717	14,567	+24.3%

Table 16.2: Livestock status and milk production in village Kaimbwala

Livestock statistics		Baseline	Current	% increase (+) or decrease (-)
Buffalo	Adult	60	81	+35%
	Young	37	53	+43.2%
Sub-Total		**97**	**134**	**+38.1%**
Cows	Adult	12	23	+91.7%
	Young	6	20	+235%
Sub-Total		**18**	**43**	**+139%**
Goats/Sheep	-	0	6	
Bullocks	-	22	20	-9.1%
Total		**137**	**203**	**+48.2%**
Milk Production litres/day				
Buffalo		125	225	+80%
Cows		21	62	+195%
Total		**146**	**287**	**+96.6%**
Milk Produced/Animal/day				
Buffalo		2.08	2.78	+33.7%
Cows		1.75	2.70	+54.3%
Milk sold litres/day by 16 families		92	234	+154%
Milk sold litres/day/family		5.75	14.6	+154%
Value of milk sold Rs./day/family*		57.5	175	+204%

** Milk sold at Rs.10/litre at baseline and Rs.12/litre at current level.*

A study was carried out in the catchment areas of two water harvesting dams four years after dam construction to assess the environment impact.

Table 17: Increase in Vegetation in Catchment Areas of two Water Harvesting Dams

A. Village-wise Increase in Vegetation Cover in Catchment Areas of Dams after 4 Years

Village	Tree density (%)			Bush density (%)		
	Upper Slopes	Middle Slopes	Lower Slopes	Upper Slopes	Middle Slopes	Lower Slopes
Bharauli	4.2	33.9	48.2	137.7	61.3	84.7
Ibrahimpur	15.2	39.0	10.3	57.2	34.4	41.9

B. Village-wise Increase in Grass Yields in Catchment Areas of Dams after 4 Years

Village	(%) increase in grass yield		
	Upper Slopes	Middle Slopes	Lower Slopes
Bharauli	90.9	52.0	356.3
Ibrahimpur	126.3	133.3	45.0

Another vegetation study was carried out in the catchment areas of three water harvesting dams – Rana, Bhediwala and Nanheri – to assess the environment impact two and a half years after dam construction. This time period is too short to discern any increase in tree stocking – the number of trees has actually come down in one village due to forest fire and continued grazing. However, there has been a dramatic increase in shrub density on the hill slopes, by as much as 92% in one village, by 40% in the second, 26% in the third. Density of grass clumps, binding the soil and preventing further erosion, has also increased significantly as a result of reduced grazing and improved water regime. The increase varied from 50 to 75%, with the highest increase where baseline grass cover was lowest. Soil moisture has improved from around 5% to levels above 7%, creating favourable conditions for future natural growth of vegetation.

The total command area of seven dams constructed at a cost Rs. 13,234,000/- during 2003-2004 (year 5) in Dhandion, Toron, Banswala and Mandapa Badhaur villages (Panchkula District) and Kansli, Thaska and Kathgarh villages (Yamunanagar District), is 356 ha. Assuming an economic life of 25 years until the dams require de-silting, this translates into a cost of Rs. 1,650 per ha per year, much lower than the cost for canal irrigation. Besides irrigation, the dams also give benefits like improved moisture regime in forest vegetation, ground water recharge, water for wildlife, possibilities of rearing fish, etc.

After construction and demonstrating their use to the village society, the project handed over the functional dams to the villagers concerned for their further maintenance with certain conditions (drawn up in conjunction with the village community) to ensure equitable distribution of water and protection and management of catchments.

10.1.2.2 Gender and Equity

In the constitution of VRMCs, the position of Vice President and 30% seats in the executive are reserved for women. Scheduled Castes are offered at least one seat in the executive. Women link workers engaged from each village act as motivators so that interests of women are protected. In the meetings all women are invited and their views solicited. They are gradually opening up and hesitations are fading away.

Migration of men with livestock, causing a lot of inconvenience to women, has been eliminated after construction of water harvesting dams. No longer is a large number of women seen going to the forests for fodder and fuelwood collection, as most of them now spend time on their farms helping men in agricultural operations.

The landless families get some land on rent and raise their own fodder *(Barseem)* crop for stall-feeding. In addition to gainful employment in dam construction most of the landless are in demand as farm labourers.

10.1.2.3 Village Changes

The changes are sweeping across villages covered under water harvesting initiative of HCFP. Awareness about the rights and responsibilities are increasing due to constant dialogue with the communities. A glaring example of this was witnessed in village Mirpur where a reservoir full of water behind a 14 m high dam activated the sleeping dry land farmers beyond imagination. Twenty-seven farmers raised summer fodder for the first time. The stored rainwater ensured timely sowing of *kharif* crop in 100 acres of command area. The availability of water further prompted many enterprising farmers to raise paddy over 21 acres after levelling the land. Bumper crop of maize was harvested because two irrigation cycles could be provided from stored water. Even sorghum was irrigated which provided sufficient fodder for livestock. “No need to migrate with livestock this year because there is no dearth of fodder in Mirpur”, said one of the farmers. Water is surely a catalyst for fast economic growth.

Six pumping sets were used to lift water from the gully bed, in village Toron, to irrigate wheat crop sown on elevated terraced fields at Rs. 40/- per ha per irrigation. These fields now receive water from the dam and farmers pay only Rs. 10/- per ha. All pumping sets have, thus, been removed and are used for chaff cutting.

The participatory approach adopted in water harvesting projects has increased the flow of benefits to the community, reduced the risk of floods and droughts and regenerated denuded forest catchments. The HCFP provided the VRMCs an opportunity to own, manage and maintain the assets. This optimism stems from the commitment of project management, support from the funding agency dedication of field staff and motivation of rural communities.

10.1.2.4 Link Workers

Most VRMC executive members are either illiterate or not trained to write accounts. Though training courses are organised for executive members, but members change when new executives are elected. Quite often, office bearers are not available in the village. The services of link workers are taken to keep track of transactions and ensure maintenance of records. The VRMCs are vigilant in detecting and correcting questionable practices.

10.2 Traditional Water Harvesting Systems

Rainwater harvesting systems have been traditionally used in villages all over India including Haryana. The basic principle in all these systems is to catch rainwater where it falls and not to allow it as runoff. There are various forms of water harvesting systems in use for meeting different requirements. As the quality and quantity requirements for specific uses (irrigation, agriculture, cattle, domestic consumption etc) are different, accordingly specific water harvesting

systems have been developed. The traditional water harvesting systems used for domestic consumption in the villages are: *Johads*; *Hodhis*; *Kunds* or *Diggis* and water tanks.

However, factors such as increasing population and fostering of greater dependence on centralised water supply schemes have contributed to erosion of traditional systems. Most of these systems are now defunct unless the prevailing conditions force the villagers to continue with the traditional systems.

10.2.1 Rehabilitation of Johads

Traditionally, *Johads* were made in villages to store rainwater for meeting all their water requirements. Basically, there were three types of *Johads,: (1)* for domestic water consumption; (2) for water requirements of livestock; and (3) for wastewater discharges of the village. A very elaborate community-managed system had been evolved for the upkeep of these *Johads*. Strict control was exercised for the economic use of water and to ensure that it does not get dirty or polluted. For example, construction of *Johads*, meant exclusively for drinking water, had to be done in such a way so as to keep animals away. In such cases, the *Johad* was dug deep enough with nearly straight *kuchcha* or stone *pucca* walls and steep stone steps leading to water. Community leadership ensured a clean catchment for *Johads* that were used for meeting drinking water requirements. Similarly, there used to be separate *Johads* for collection of wastewater and other drainage from the village. Construction and regular repair of *Johads* were through voluntary labour. However, with modernization (dependence on centralised water supply schemes etc) and erosion of community participation, the *Johad* system became rather redundant and most *Johads* in the area are in a state of utter neglect and disuse. Village institutions that used to organise desilting through voluntary labour and guard these *Johads* against pollution have collapsed and the *Johads* have become garbage dumps and breeding grounds for mosquitoes.

An environmental baseline study carried out by the project during year 2 (2000-2001) identified degradation of *Johads* as one of the most frequent environment problems in the project villages.

The 18 project villages surveyed in the districts of Hisar, Fatehabad and Sirsa showed degradation and pollution of their *Johads* to be the main environmental problem. The project has, together with *Panchayats* concerned, prepared action plans for the rehabilitation of *Johads* in these villages. The plans were then incorporated in the Annual Work Plans **(AWPs)** for Years 4 to 8 and approved as a warranted environmental intervention. Based on these plans, rehabilitation of *Johads* in 28 villages has been undertaken during the years 4 to 8. The work was received with great enthusiasm and community participation. This rehabilitation work included retaining walls, earthen bunds, excavation, inlets, cattle gallery for livestock watering (washing/drinking) and embankment plantations.

11. TRAINING

11.1 Training Objectives

The training activities of the project were developed with the following objectives:

- To enhance the technical competence of field level forestry staff in areas like forestry extension, rural communication, participatory assessment, micro-planning, participatory monitoring and evaluation and leadership building, in order to enable effective implementation of the project;
- Community capacity building at village level with a view to promote participation and self-reliant actions of the community, to manage their village resources in a sustainable manner;
- To hasten the process of empowerment of the weaker sections of village communities, particularly women, scheduled castes, landless and other disadvantaged groups, through on-the-job skill training to generate self-employment opportunities.

11.2 Staff Training

The various core, subsidiary and refresher training courses given to project staff in the light of their goals and needs were as follows:

Core Courses

- Project Induction, (project concept, orientation including their assigned roles);
- Village Entry;
- Participatory Assessment;
- Micro-planning and Micro-project Formulation;
- Participatory Monitoring and Evaluation;
- Construction of Water Harvesting Dams;
- Training of Trainers;
- Gender Sensitisation;
- Computer Course;
- Forestry Extension and Communication;
- Communication and Media Use;
- Geo-positioning System;
- VRMC Strengthening;
- Exit Strategies.

Subsidiary Courses

1. Budding and Grafting;
2. Clonal Multiplication of *Eucalyptus;*
3. Management of Training Programmes;
4. Crash Course on Project Procedures (newly recruited untrained field staff).

Refresher Courses

1. VRMC Institution Building/Participatory Project Approaches;
2. Gender Sensitisation;
3. Training of Trainers (a series of repeat courses);
4. Communication and Forestry Extension;
5. Crash Course on Project Operations (all field staff).

The senior and middle level staff was oriented towards the conceptual framework of the project, with a major thrust on the understating of their respective roles in the project's functional structure. Similarly, the field level staff (Sub Divisional Forest Officers, Deputy Rangers, Foresters and Forest Guards) was oriented in project concept and their roles, followed by training courses mentioned above, to strengthen their supportive role in the field.

A total of 3,759 participants attended staff training courses as mentioned above.

11.3 Beneficiary Training

The training courses given to village committees, Change Agents (Link Workers), VRMCs, Self-Help Groups and beneficiaries of the project were as follows:

Specific Courses

- Project Concept (orientation with a major thrust on their expected role);
- Participatory Assessment (on the job training);
- Micro-planning and Micro-project Formulation;
- Participatory Monitoring and Evaluation;
- Plantation Techniques, (on-the-job-under different forestry models);
- Protection and maintenance of plantations;
- Water Harvesting Dams (on-the-job training);
- VRMC Management;

- Money Management;
- Leadership and Communication;
- Induction Training (Link Workers);
- Capacity building with focus on Gender (Link Workers);
- Training of Trainers;
- VRMC Capacity Improvement.

Subsidiary Training

1. Budding and Grafting;
2. IGA and SHG Development (Link Workers and NGO grassroots workers);
3. Training of Trainers on Literacy (Link Workers) – a series of repeat courses and special training for literacy trainers;
4. Management of Self-Help Groups;
5. IGA Skill Training (Self-Help Groups);
6. IGA identification and Business Planning (Self-Help Groups);
7. *Chulha* Repair and Maintenance (SHG and Link Workers);
8. Literacy for Self-Help Groups (Computer – assisted);
9. Federation for Self-Help Groups;
10. Vermi-composting (SHGs and VRMCs);
11. Crash courses for newly selected of office bearers/changed Link Workers.

Refresher Training

1. VRMC Management (for VRMCs and Link Workers).

Link Workers and leading VRMC members were trained in Participatory Assessment, Micro-planning and Micro-project Formulation as well as Participatory Monitoring and Evaluation. Thereafter, a training course was organised to equip VRMC Executive Committee members and Link Workers with a basic understanding of committee management, book-keeping, fund management, communication skills and leadership development. In addition, all VRMC members and Link Workers have been trained in VRMC Capacity Improvement, including refresher training.

Training in plantation techniques was imparted to all project beneficiaries involved in plantation activities under various models. This was an on-the-job

training during the first days of planting. Similar training were arranged for beneficiaries involved in the construction of water harvesting dams. Training for raising of grafted fruit plants was given as and when required. Training in protection and maintenance of plantations was given to VRMCs and farmers. Special training Courses were arranged for women Self-Help groups – group management and record keeping , skill training in various IGAs, management of federations, literacy, etc.

Training of VRMCs and Link Workers was imparted in mixed batches (both male and female) with the care to fully integrate participating women in the training process. Self-Help Group, training has been specifically for women.

A total of 41,941 participants (22,213 male and 19,728 female) attended training courses as above (attendance figures for on-the-job training in plantation techniques and Water Harvesting Dams are not available).

11.4 NGO Training

The field staff of three NGOs assisting in the project was trained in Participatory Monitoring and Evaluation to facilitate their working. Special meetings with NGOs assisting the project were held at regular intervals to see that their work goes on smoothly as per the specifications of the project. Grassroots workers of NGOs assisting Self-Help Groups have been trained periodically.

11.5 Training Workshops

A large number of field workshops were arranged (in various sub divisions) for VRMC members, Link Workers, farmers, graziers and leaders of SHGs with the purpose of gearing up village institution building and increasing stakeholder involvement in the project. These workshops were heavily attended by the above beneficiaries (both male and female) besides a large number of project staff, *Sarpanches*, and other officials. Workshops were also arranged for SHG members on vermi-composting. Legal awareness camps were also conducted for SHGs. Workshops propagating the concept of organic farming were arranged for farmers and SHG and VRMC members. These workshops also provided a forum for SHGs to sell their vermi-compost to local farmers.

A four day workshop on Planning, Monitoring and Evaluation was arranged with senior project staff. A workshop on Income Generating Activities was held in July 2000 which was attended by senior project and HFD staff, invited representatives of other departments/agencies/ credit institutions and NGOs.

A number of training Workshops were conducted for staff of the project, regarding the working of the project including accounting, reporting, GPS etc., to have the project run smoothly as per guidelines laid down in the Field Operations Manual.

11.6 Study Tours

Supplementary training inputs were provided to project staff and the beneficiaries through well designed study tours and exposure visits within the State and to different places in adjacent states, whereby they got an opportunity to have

practical understanding of the functioning of different successful community forestry models which can be fruitfully replicated under the project.

A number of study tours, as a source of supplementary training, were undertaken by project staff, beneficiaries, progressive farmers, VRMC members and SHG members to various places within the State and to other places in adjacent states of Rajasthan, Punjab, Himachal Pradesh, Uttar Pradesh, Delhi etc. These study tours provided an opportunity to the participants to get exposed to/study experimental plantations under desert conditions; management of poplar plantations; agro-forestry; vermi-composting as a viable income generating activity (for Self-Help Groups); non-governmental organisations; working of Self-Help Groups; organic farming; use of herbal pesticides; grafting techniques; various crop and tree plantations; market studies, working of dynamic VRMCs etc.

A total of 3,464 participants (1,702 men and 1,762 women) attended study tours for VRMCs, SHGs and farmers. There were 267 participants in staff study tours.

Table 18: Stakeholder training conducted over the entire project period

Course	Number of participants		
	Male	Female	Total
Link Worker Induction	360	316	676
Microplanning	2218	973	3191
VRMC Management	1459	715	2174
Money Management	1151	515	1666
Participatory Monitoring and Evaluation	1730	747	2477
Leadership/Communication	1374	697	2071
Link Worker Refresher Training	503	484	987
Training of Trainers Courses for Link Workers	123	129	252
VRMC Refresher Training	3990	1801	5791
VRMC Capacity Improvement	3398	1955	5353
Plantation Maintenance/Protection Training	5228	1497	6725
Nursery Training	58	4	62
SHG/IGA Training	615	8370	8985
Energy Saving Training	6	83	89
Literacy Training	0	1442	1442
Study Tours and Exposure Visits	1702	1762	3464
Total number of participants	**23,915**	**21490**	**45405**

11.7 Trainers

In order to raise a potential cadre of trainers from amongst the field staff of the project, Training of Trainers (**ToT)** courses were organised for selected Forest Guards who would be used for training VRMC members and Link Workers. In the first 70 villages, NGOs assisted in training, together with Forest Guards, who themselves learned such techniques, in order to co-train and then train villagers themselves.

Training of Trainers courses were also organised for selected Link Workers, who have acted as co-trainers together with trained project staff or as literacy trainers.

NGOs and other resource persons were commissioned for training in Participatory Monitoring and Evaluation Leadership Development and Communication Skills, income generating activities (other than forestry) and energy saving techniques.

With regard to staff training, senior project staff and TA experts were the main trainers, supported by other resource persons as and when required.

11.8 Training Evaluation

The success of a particular training programme was evaluated against a set of achievement indicators measured in terms of the impact of training programmes as related to changes in KAP of the trained project functionaries and beneficiaries. The scope for improvement or modifications in the training courses, if pointed out in the evaluation reports, was incorporated in the succeeding training programmes.

Special evaluation studies on the effect of both staff training and training of beneficiaries have also been commissioned.

12. INFORMATION, COMMUNICATION AND PUBLICITY

12.1 Information Needs

There was a range of community forestry information needed within the project as given below.

- Villagers required access to community information systems related to management of CPRs, farm tree resources, income generating possibilities, resources and markets, various Government schemes for village development, skills needed to manage VRMCs and Village Revolving Fund **(VRF)**;
- Extension staff and Link Workers needed information on different forestry models, community development processes, and communication and media skills;
- Project management required information for decision-making, planning, monitoring and evaluation through establishment of reporting systems and a Management Information System **(MIS)**.

12.1.1 Village Information

Information for village level assessments and planning was compiled during the Participatory Assessment and Monitoring and Evaluation **(PAME)** processes which led to making of a village micro-plan and a set of possible micro-projects for implementation by the villagers mainly through self-assistance.

12.1.2 Extension Staff

Extension staff needed new skills to support the expansion of village information systems. They required guidelines and manuals for the purpose. These were prepared during the currency of the project. Special information in the fields of advanced communication and media skills was compiled for selected extension staff.

12.1.3 Project Management

Senior project management staff required additional information related to project planning, reporting and monitoring systems. Guidelines in the following subjects were prepared for the purpose.

- Use of the project Logical Framework;
- Project monitoring and reporting Systems;
- Participatory monitoring and evaluation;
- Interfacing with village information systems and village database management;
- Management Information System.

12.2 Communication

12.2.1 Forestry Extension Staff as Agents of Change

In order that foresters may become agents of change in rural communities, the first step for them was to become facilitators of human development. Once this process of critical awareness building was over, they adopted the role of organisational and enterprise consultants. The basic role of forestry extension staff (especially Forest Guards, Foresters, Deputy Rangers and Sub-Divisional Officers) were to:

- Work with people and not for them;
- Work mainly with vulnerable groups;
- Initiate a process of critical awareness building;
- Assist people to appreciate the advantages of working in groups;
- Promote the broadest possible participation;
- Assist groups during their establishment phase;
- Encourage the development of leadership skills;
- Assist and encourage groups and communities to establish external linkages;
- Encourage and assist groups and communities in communicating their needs and grievances;
- Share their knowledge and experience of forestry and other resource management practices with the people;
- Provide a wider perspective on external problems of the society in order to help them understand their own problems better;
- Realise that genuine people's organizations and movements have to start as people's movements;
- Constantly review and assess their role, behaviour, relationship with others and their performance as change agents.

12.2.2 Communication Processes

The communication processes followed by HCFP were based on community development and participatory learning processes that include: village assessment, village training, village organisation, capacity building, micro-planning, micro-project formulation, monitoring, and impact assessment.
Information for changing the situation in the Forestry Sector was communicated through:

- Forestry Extension staff in each village;
- Village Link Workers;
- Village Resource Management Committees;
- Self-Help Groups;

- NGOs assisting in the first 70 villages and NGOs assisting SHGs;
- Publicity and Extension staff;
- Other collaborating village institutions.

12.2.3 Communication Techniques

During the processes mentioned above, various participatory rapid appraisal techniques were used, and a PAME toolkit prepared. Communication techniques were fully integrated into the PAME toolkit.

12.3 Publicity

The project used various media for conveying messages related to its four main change areas, namely: community development, community resources management, farm and agro-forestry, and forestry and rural enterprise development (including energy saving technologies). Media included the spoken word, the written word, and the visual "word".

The project developed its own media strategy to suit social conditions in various targeted districts and villages, which included posters, leaflets, newsletters, comic strips, murals, exhibitions, newspaper articles, village plays, puppet theatre, poetry reading, workshops and rallies, cinema advertising videos, and radio and televisions slots.

An Overview describing as to what the project aims to achieve was published in the beginning of the project (later revised). The overview was initially published in English and subsequently in Hindi. Also some leaflets (in both English and Hindi) were printed about the project. Initially the Overview and the leaflets constituted the only publicity backup when the project started in selected villages.

A regular issue of a project Newsletter was started for distribution to VRMCs. This newsletter was highlighting encouraging village developments to enthuse other VRMCs to follow. SHGs were subsequently added to the distribution list.

A quarterly magazine *"Haryali"* with a peak circulation of 7,500 copies, on various activities of the project was regularly published, and distributed to all concerned.

Three video films, which demonstrate the tools and techniques being employed during various stages of community development, were produced. These films were used in staff training on related subjects. Similarly a number of posters (16) for use in training of beneficiaries were printed.

The project prepared technical leaflets on plantation and maintenance of poplar, *Eucalyptus* and the most common fruit trees for distribution to participating farmers/households at the time of distribution of seedlings. Technical posters on vermi-composting were printed and distributed to Self-Help Groups and VRMCs.

The manual on Water Harvesting Dams was published as a book. A video on water harvesting dams has been produced. Posters on issues like afforestation, environment, improved *Chulhas* and rehabilitation of *Johads* were printed.

Awareness meetings on poplar plantations were arranged in a number of villages. Painting and quiz competitions were conducted in almost all the schools in the project area.

The project contracted a public relations firm for publicity campaign about the project which resulted in more than 30 newspapers articles, including feature stories and TV coverage. A professional photographer was engaged to build up a picture library on various project activities. Radio programmes, regarding the project, as a series of six episodes, were broadcast.

The project geared up its publicity back up while starting in new project villages. New leaflets describing the project's Community Development processes and the participation expected of village communities were printed and distributed. Local talents including members of Self-Help Groups have been utilised for songs and puppet shows during Village Entry.

Five local cultural groups (one in each division) were formed and trained for village plays to be performed during Village Entry and Participatory Assessment. Professional puppet theatre groups were used for performing during Village Entry. Posters depicting various plantation models were made and displayed. Wall paintings on the project for entry into new village were made and stickers printed and distributed. Wall calendars were printed each year.

Additional information materials produced for VRMCs include: a guidebook, two flip charts, a book on Government schemes existing for village development, a book of case stories to motivate capacity development, etc.

A flipchart on women empowerment, health, nutrition and sanitation, etc has been produced for Self-Help Groups. Each SHG has also been provided a mini-library on various development topics.

The project has printed four brochures, on water harvesting dams, on capabilities of VRMCs and two brochures on women empowerment through Self-Help Groups. Five video films on Self-Help Groups, water harvesting dams and afforestation activities have also been produced.

13. PARTICIPATORY MONITORING AND EVALUATION

13.1 Definitions

Participatory Monitoring and Evaluation (PME) is the systematic recording and periodic analysis of data that have been chosen and recorded by the village community, village groups or village household (the insiders) with the help of staff from the Haryana Forest Department (the outsiders). The main aim is to provide information for better managing community forestry micro-projects and for improving community capabilities for sustainable resource management. The involvement of people in the process enables them to critically examine the programmes in order to achieve the desired results.

Participatory monitoring is a continuous process of review and feedback of the activities of any project/programme by the project participants themselves.

Participatory Evaluation is the assessment and review of any project/group/ programme by the project participants themselves at regular intervals.

13.2 Importance of PME

- The process is useful as the assessments critique and recommendations concerning the programme are expressed by the people involved in the project.

- It enables the people to understand and accept the findings of monitoring and evaluation leading to their speedy implementation.

- It is an important means of building up awareness in the people about themselves, their strengths and limitations.

- There is mutual learning and development of a relationship based on partnership between the implementing agency, donors and the people.

13.3 Key Principles

Participatory Monitoring and Evaluation is based on the premise that each adult has a knowledge base, which can be effectively utilised; there is scope for mutual learning that people can take independent as well as collective decisions and actions to change. Some of the key principles are as under.

Gender and Equity Focus: This implies an implicit faith that people can progressively transform their environment with the help of an outside agent (facilitator) with no domination. In essence, participatory processes demand that the people move from being objectives to becoming subjects of development projects. As people also include women, poor, and the backward classes, conscious efforts are made to actively and meaningfully include these classes in the entire process.

People's Knowledge: Participatory processes strengthen the forces of legitimizing people's knowledge and enable them to appropriate their own knowledge and that produced by the dominant forces of development for their own use.

Critical thinking and Capacity Building: Participatory processes necessitate that people analyse their reality/ environment through critical consciousness rising, sharpen their analytical abilities and enable them to build their capacity to make their own decisions and take future action.

Reflective and Action Oriented: Stress is laid on people sharing past experiences in a group and help them to analyse these. This process of reflection equips the people to take concrete action to transform their existing situation. Stress is laid on people initiating action rather than merely responding to a situation.

Organising and Group Building: Stress is laid on building and strengthening the group. The process of group building requires the prevalence of a suitable environment, in which there is scope for participation and learning of each individual.

Facilitation: It keeps communication channel open to allow full participation; promotes leadership and encourages group to take their own decisions; and supports and builds team and groups which becomes self starting, self alerting and self managing.

It develops and strengthens relationship and harmony rather than having conflict and confrontation, and takes care of many of the training needs.

It puts people in touch with new ideas and technologies; encourages and enables group decision making; and simplifies administrative procedures.

Long-term Results: As there are various forces – social, political and economic – affecting the lives of the people who have been oppressed, there is need for continuous efforts, the results of which can only be seen over a longer time frame.

Autonomy: Participatory processes emphasise the role of the facilitator who is more of a guide, promoting leadership to the group, enabling its smooth functioning without portraying a dominating image. All the members of the group are equal participants and possess equal power and authority while making important decisions. This aspect of critically analyzing the action undertaken leaves adequate room for autonomy in changing the decisions previously taken and providing scope for initiating constructive activities in future.

Structural Understanding: The process unfolds into identifying the root causes and factors responsible for people's oppression, leading to future actions, which challenges the dominant structures and existing power relationships.

13.4 Gender Perspective

The methodology for including a gender perspective in Participatory Monitoring and Evaluation process entails taking and listening to men and women, followed by deriving a thorough understanding about their roles and responsibilities, position and rights of women in the community and household, division of labour and the opportunities and constraints faced by women in fulfilling them. It is crucial that at every stage among the actors the viewpoint of both men and women be given separate weightage, along with working out specific roles and responsibilities to be carried out by each of them, involved at various levels along with an action plan for promoting women's participation.

13.5 Monitoring and Evaluation

A monitoring system was planned based on the project's overall logical framework, and the monitoring plan specified priority indicators for each project purpose, project result, project activity, project input and external project risk. The plan included the type of data required; how, when and by whom it would be collected, how it will be processed and analysed, how it will be stored and how it will be presented to various users. An indicator framework was established as a frame for the project.

The project's monitoring system was divided into seven modules with special emphasis on modules **1 and 2 (Figure 3)**, participatory monitoring forming the major part of all monitoring in the project.

Participatory monitoring of tree survival has been carried out every year through village monitoring teams attached to the VRMCs. Records of all plantations in a village have been maintained by each VRMC in a micro-project tracking logbook. Main findings of the Participatory Assessment in each village, as well as the village micro-plan and its implementation, have been exposed on a monitoring board in each project village. Link Workers have been used to monitor plantations under the Farm Forestry model and SHGs were used for participatory monitoring of the utilisation of *Chulhas*.

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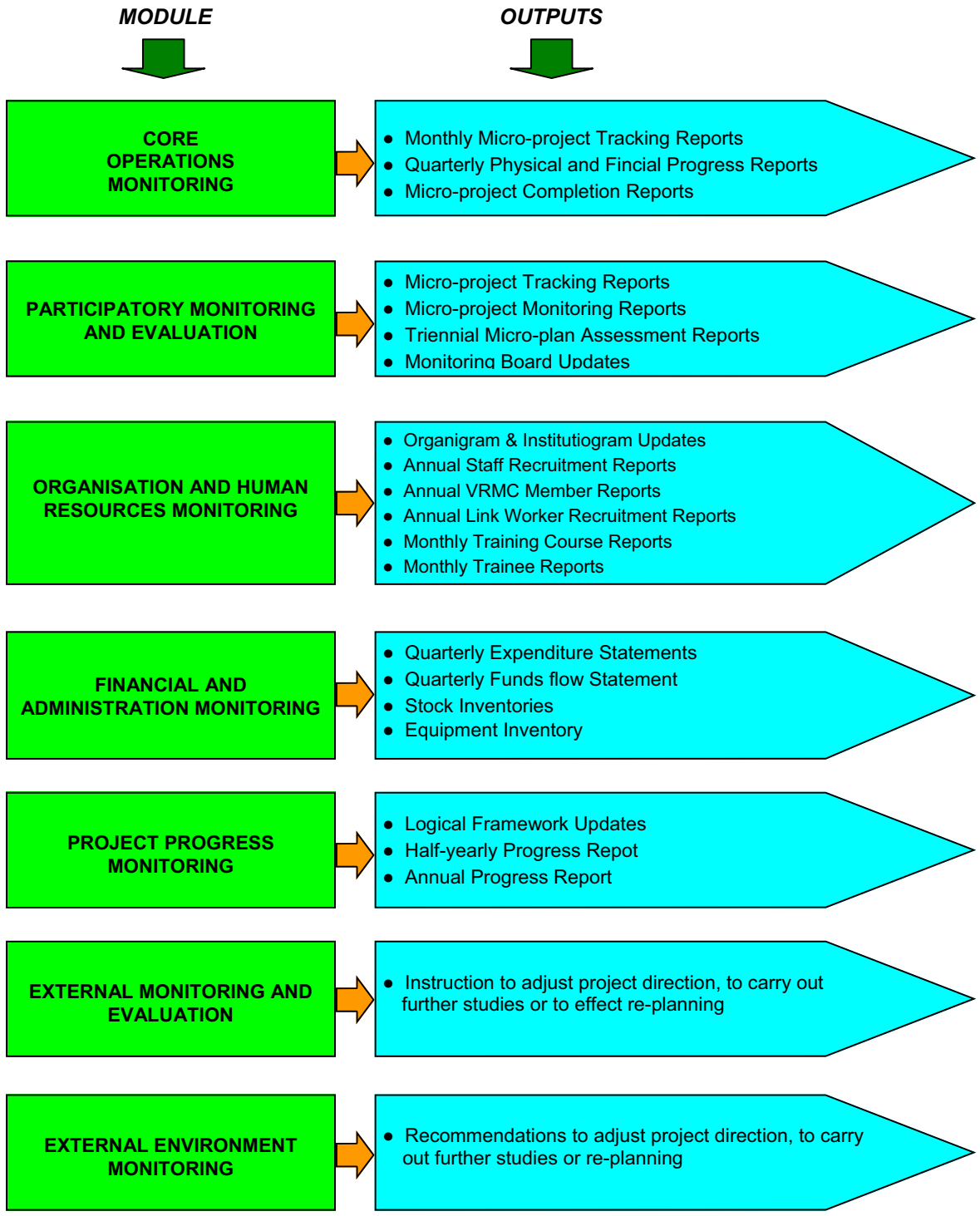
Figure 3: Monitoring Modules



13.6 Special Studies

Several areas of concern were identified project during its currency and a number of manuals/working papers developed besides carrying out of some special studies and publishing of certain publications. The details of these manuals /working papers, studies and publications are given in Chapter 14. While some of these publications have been referred to in the text, a brief, summary of the most important manuals/working papers/studies is given in **Appendices 8 and 9**.

13.7 Management Information System

The MIS for the project needs to cover at least seven types of management information. These relate to basic information needs of various users, e.g. the Project Steering Committee, the European Union, the project management and supervisory level teams, the field extension and operations team, VRMC members, and micro-project owners amongst the various stakeholders.

Data was identified from secondary sources and from primary data collection. Much of the primary data was gathered during village participatory assessments, which formed the primary baseline for each village.

Data processing and analysis was carried out on both qualitative and quantitative data and at the village and project levels.

Villagers from the VRMC were trained in various processing methods during PA and through rapid diagnostic techniques. These ranged from nursery book-keeper systems to estimating tree survival rates, to carrying out village socio-economic surveys.

Modelling of data was necessary e.g. for Cost Benefit Analysis **(CBA)** of forestry models when they are adjusted by communities during the micro-planning exercises. Division level staff was trained in CBA in order that they can prepare simple participatory CBA for village micro-project proposals.

Geographical Information System **(GIS)** has been used to monitor project activities, both spatially and temporally, and to produce maps on key project results and activities.

Accounts have been computerised to facilitate preparation of quarterly financial statements. The computerised accounts also allow attribution of relevant costs to villages, for enhanced transparency and cross tabulation with physical achievements.

14. DOCUMENTATION

14.1 Manuals and Working Papers

A number of Manuals and Working Papers were developed during the project to facilitate the execution of the same and as a field guide to the working teams. The following manuals/working papers were written during the currency of the project **(Table 19)**. While the manuals/working papers at S. Nos. 1, 2, 3 and 4 are discussed in the text, a very brief summary of the more important manuals /working papers (S. Nos. 5, 6, 7, 8, 9, 10, 14, 19, 23 and 24) is given at **Appendix 8**.

Table 19: Manuals/Working Papers Developed by Haryana Community Forestry Project.

Sl. No.	Year	Manual / Working Paper	Author
1.	1999	Multi-criteria Village Selection System and Rapid Appraisal Methods. Working Paper 1	David W. Billing and Joseph Viruthiyel, HCFP TA Team
2.	1999	Village Entry. Working Paper 2 (Revised 2000)	Institute for Sustainable Development **(ISD)**, New Delhi,
3.	1999	Participatory Assessment. Working Paper 3 (Revised 2000)	ISD, New Delhi, and TA Team, HCFP
4.	1999	Micro-planning and Micro-project formulation. Working Paper 4 (Revised 2000)	ISD, New Delhi, and TA Team, HCFP
5.	1999	Participatory Monitoring and Evaluation - A Tool Box of Operational Instruments (Revised 2001)	David Billing, HCFP TA Team
6.	1999	Nursery Manual	R.N. Kaul, HCFP
7.	1999	Plantation Manual	Madan Gopal, HCFP TA Team
8.	1999	Induction Course for the Staff of Haryana Community Forestry Project – Training package	ISD, New Delhi,
9.	2000	Field Operations Manual	TA Team, HCFP
10.	2000	Construction and maintenance of small Water Harvesting Dams - A Field Manual	S.K. Dhar with S.S. Grewal and Sanjay Bhirud, HCFP TA Team
11.	2000	Training of Trainers Manual	Y. P. Singh, HCFP TA Team

Continue

Sl. No.	Year	Manual/ Working Paper	Author
12.	2000	Training Manual on Gender Sensitisation	Savitri Ray, HCFP TA Team
13.	2000	Induction Training Package for Link Workers (Handouts)	HCFP
14.	2000	Training Manual on Village Resource Management through VRMCs	TA Team, HCFP
15.	2000	Training Manual on VRMC Money Management	TA Team, HCFP
16.	2000	Training Manual on Leadership and Communication Skills – for VRMC	Earth Care Consultants (ECC), New Delhi
17.	2001	Terms of Reference for Project Staff	HCFP
18.	2001	Staff Training Manual on Communication and Media – for Project Staff	Ajay Rai, HCFP TA Team
19.	2002	Training Manual on Self-Help Groups Micro-enterprise Development (Second Revision 2003)	TA Team, HCFP
20.	2002	Geo-Positioning System (GPS) Procedures Manual	Rene Weterings, HCFP TA Team
21.	2002	Training of Trainers on Refresher Training of VRMC Members for VRMC Strengthening	Ajay Rai, HCFP TA Team
22.	2004	Capacity Building of Link Workers with Gender Aspects Included	Reeva Sood, HCFP TA Team
23.	2004	Maintenance and Protection of Plantations – Training Manual.	R.P. Balwan with Ajay Rai, HCFP TA Team
24.	2006	Institutional Capacity Improvement of VRMCs	Pragati, Dehra Dun

14.2 Special Studies

Apart from various manuals/working papers developed, several areas of concern were identified during the currency of the project. Accordingly some special studies were undertaken in order to have baseline material for its various components. Wherever possible the studies include community Action Research approaches to enable the traditional knowledge base at village level to be supplemented by outside information in a participatory manner. The studies undertaken were as given in **Table 20**. A very brief summary of the most important in-house studies (S.No. 1, 3, 4, 5, 13, 14, 15, 18, 21, 22, 23, 25, 26 and 27) is given in **Appendix 9**.

Table 20: Special Studies Undertaken by Haryana Community Forestry Project.

Sl. No.	Year	Name of Study	Author
1.	1999	Common Land Study	Institute of Rural Management **(IRM)**, Jaipur
2.	1999	Study on Utilisation and Marketing of *Eucalyptus*, Poplar and *Ailanthus*	Development and Research Services **(DRS)**, New Delhi
3.	2000	Study on Multipurpose Tree Species of Poplar, *Eucalyptus* and *Ailanthus excelsa*	D.C. Sharma, R.C. Jain and O.N. Kaul, Institute for Sustainable Development **(ISD)**, New Delhi
4.	2000	Study on Energy Consumption Patterns and Technologies in Villages of Haryana	S.K. Sharma, Energy Research Centre **(ERC)**, Panjab University, Chandigarh
5.	2001	Community Environmental Management Study in Haryana Villages	Atul Kansal, O.N. Kaul and Bharti Solanky, ISD, New Delhi with Paolo Mori, HCFP TA Team
6.	2001	Farm Forestry/Agro-forestry System Study	Earth Care consultants **(ECC)**, New Delhi
7.	2001	Capability Assessment of 26 VRMCs	TA Team, HCFP
8.	2002	Baseline Study of Water Harvesting Dams constructed in Village Bharauli and Ibrahimpur	Society for Promotion and Conservation of Environment **(SPACE)**, Chandigarh
9.	2002	Evaluation of Water Harvesting Dams at Village Bharauli and Ibrahimpur	Panjab Agricultural University **(PAU)**, Ludhiana
10.	2002	Capability Assessment of 50 VRMCs	Angeli Bahtia, New Delhi
11.	2002	Common Land User Study	Udaipur University, Udaipur
12.	2003	Capability Assessment of VRMCs (follow-up study)	David Billing, HCFP TA Team
13.	2003	Analysis of Project Tree Plantation for Multi-Species Farm Forestry Kitchen Gardens and Sand Dune Fixation Components	Luca Ferruzzi, HCFP TA Team
14.	2003	Mid-Term Review for HCFP, India	ITALTREND

Continue

Sl. No.	Year	Name of Study	Author
15.	2003	Impact of VRMC Training on Knowledge, Attitude and Practices – An Assessment	Samvaya, New Delhi
16.	2003	Baseline Survey of the Command Area of Water Harvesting Dams	SPACE, Chandigarh
17.	2004	Capability Assessment of 40 Self-Help Groups	Sarathi Foundation, Lucknow
18.	2004	Impact (Knowledge, Altitude and Practice) of Staff Training in HCFP.	O.N. Kaul, ISD, New Delhi
19.	2004	Capability Development of VRMCs (follow-up Study)	TA Team, HCFP
20.	2004	Baseline Survey of Common Area of 7 Water Harvesting Dams	SPACE, Chandigarh
21.	2005	Impact Studies of Crop Yields of Water Harvesting Dams	SPACE, Chandigarh
22.	2005	Capability Assessment of Village Resource Management Committees – 2005	TA Team, HCFP
23.	2005	Village Benefit Study	Berry van Gelder, HCFP TA Team
24.	2005 – 2006	Studies on Crop Yields and Catchment Areas of Water Harvesting Dams	SPACE, Chandigarh
25.	2006	Self-Help Group Capability Assessment Study	Varsha Mehta, New Delhi
26.	2006	Village Benefit Study (40 Batch 1-4 Villages)	Joseph Viruthiyel and TA Team, HCFP
27.	2007	Village Benefit Study (40 Batch 1-5 Villages)	Joseph Viruthiyel and TA Team, HCFP
28.	2007	Correlates of Effectiveness: A Study of Village Resource Management Committees in HCFP	Dr. Kiranpreet Kaur, Department of Sociology, Panjab University
29.	2007	Self-Help Group Capability Assessment Study	Joseph Viruthiyel with Göran Jonsson, TA Team, HCFP
30.	2007	Satellite Imagery Forestry Cover and Biomass Monitoring Study (year published)	Consulting Engineering Services, New Delhi
31.	2007	Environment Impact Study	ISD, New Delhi
32.	2007	Study on Catchment Areas of three Dams	SPACE, Chandigarh
33.	2007	Benefits from Water Harvesting Dams for Landless Households	Hugh Bagnall-Oakeley, HCFP TA Team
34.	2008	2007 Capability Assessment of VRMCs (follow-up Study)	Joseph Viruthiyel with Göran Jonsson, TA Team, HCFP
35.	2008	Strengths, Weaknesses, Opportunities, Threats of HCFP Self-Help Groups	Joseph Viruthiyel with Göran Jonsson, TA Team, HCFP
36.	2008	Biomass Estimation Study in HCFP villages	ISD, New Delhi
37.	2008	The Impact of Water Harvesting Dams	S.S. Grewal, HCFP TA Team

14.3 Other Publications

In addition to various manuals/working papers developed and special studies undertaken, certain publications on various aspects of the project were written and published during the project period. These are given in **Table 21**.

Table 21: Publications by Haryana Community Forestry Project

Sl. No.	Year	Name of Publication
1.	1999	Haryana Community Forestry Project – An Overview (English & Hindi)
2.	2004	Our Village – Our Future. A Handbook for VRMCs (English & Hindi)
3.	2005	Water Resources Development and Rural Prosperity in Shivaliks (English)
4.	2005	Building it Strong – To Last. The Capability Development of Village Resource Management Committees in Haryana Community Forestry Project (English)
5.	2005	Haryana Community Forestry Project Helps Women Unite (English)
6.	2006	Government Programmes of Development in Haryana (Hindi)
7.	2006	Self Development – Self Reliance (Hindi)
8.	2007	Integrated Pest Management (Hindi)
9.	2008	Empowerment of Women (English)

15. NON-GOVERNMENT ORGANISATIONS

A number of Non-Government Organisations (NGOs) assisted the HCFP in the execution of the project. The following list gives the names of NGOs involved with their subjects of responsibility.

1. Institute for Sustainable Development (ISD), New Delhi

- Assisting participatory assessment, microplanning, participatory monitoring & evaluation in 1st batch villages in Ambala Circle and Hisar Division.
- Study on growth of three multipurpose tree species.
- Environmental baseline study.
- Environment impact study.
- Initial staff training.
- Study on the impact of staff training.
- Documentation of all project activities since inception.
- Biomass estimation study.

2. Society for Rural Economy and Technology Advancement (SRETA), Rewari

- Assisting Participatory Assessment, Micro-planning and Participatory Monitoring and Evaluation in 1st batch villages in Jatusana Division.
- Formation/development of Self-Help Groups and promotion of Income Generating Activities in them in Jatusana Division.

3. Samaj Vikash Prayatan Kendra (SVPK), Bhiwani

- Assisting Participatory Assessment, Micro-planning and Participatory Monitoring and Evaluation in 1st batch villages in Bhiwani Division.
- Formation and development of Self-Help Groups in Bhiwani Division. *(Cooperation discontinued)*

4. Society for Social Education Employment and Welfare Affairs (SEWA), Himachal Pradesh

- Formation of Self-Help Groups in villages of Ambala and Kurukshetra Divisions. *(Cooperation discontinued)*

5. Udyogini, New Delhi

- Grassroots management training of 38 SHGs; promoting income generating activities in these groups in Ambala Circle. *(Cooperation discontinued)*

6. Manthan, Chandigarh

- Training of and technical and marketing assistance to Self-Help Groups involved in vermi-composting.

- Assessment of all existing Self-Help Groups.
- Construction of two improved crematoria.

7. Development Organisation for Sustainable Transformation (DOST), Chandigarh

- Introduction of improved *Chulhas* in 132 project villages.
- Two improved crematoria.

8. Earth Care Consultants (ECC), New Delhi

- Training of Village Resource Management Committee (VRMC) members and Link Workers in Leadership and Communication Skills.
- Study on agro-forestry/farm forestry systems.
- Initial and refresher staff training.
- Survey of improved living conditions for the landless in villages with a dam.
- VRMC capability assessments.

9. Action for Food Production (AFPRO), Lucknow

- Making village action plans for rehabilitation of *Johads* in 18 villages in Hisar Division.
- Rehabilitation of *Johads* in three villages.

10. Theatre Age, Chandigarh

- Training and rehearsals with local drama groups for performances during Village Entry (VE).

11. Badri Bhatt, Chandigarh

- Puppet shows during Village Entry and for Self-Help Groups.

12. Asian Society for Entrepreneurship Education and Development (ASEED), New Delhi

- Formation and development of Self-Help Groups and promotion of Income Generating Activities in these groups in Bhiwani Division.

13. Vimarsh, New Delhi

- Promotion of Self-Help Groups and Income Generating Activities in Hisar and Kurukshetra Districts. *(Cooperation discontinued)*

14. Society for Promotion and Conservation of Environment (SPACE), Chandigarh

- Baseline surveys for 18 water harvesting dams.
- Baseline surveys of 5 catchment areas.
- Crop yield and catchment area impact surveys for dams.

15. Support Initiatives in Development (SIDT), Panchkula

- Promotion of Self-Help Groups and Income Generating Activities in Ambala Circle. *(Cooperation discontinued)*
- Production of materials for Self-Help Groups and Village Resource Management Committees.

16. Rural Livelihood and Environmental Services, New Delhi

- Training VRMCs/Village monitoring teams in Participatory Monitoring and Evaluation.

17. Samvaya, New Delhi

- Study on the Impact of VRMC training.

18. Sanjeevni, Chandigarh

- Construction of three improved crematoria. *(Cooperation discontinued)*

19. Sarathi Development Foundation, Lucknow

- Study on the Impact of Self-Help Groups.
- Promotion of Self-Help Groups and Income Generating Activities in Ambala Division.

20. INDCARE, New Delhi

- Promotion of Self-Help Groups and Income Generating Activities in Hisar Division. *(Cooperation discontinued)*

21. The Energy and Resources Institute (TERI), New Delhi

- Introduction of improved *Chulhas* in 20 project villages.

22. Development Institute for System Alternatives (DIA), Lucknow

- Promotion of Self-Help Groups and Income Generating Activities in Kurukshetra Division. *(Cooperation discontinued)*

23. Rural Litigation and Entitlement Kendra (RLEK), Dehra Dun

- Training of women *Panchayat* elected from Self-Help Groups/VRMCs.
- Training of Link Workers on gender aspects.

24. Pragati, Dehra Dun

- Production of training material for VRMCs.
- Training of staff in the use of training materials produced.
- Capability assessments of 173 Self-Help Groups.

25. *Rural Environment Enterprises Development Society (REEDS), Chandigarh*

- Promotion of Self-Help Groups and Income Generating Activities in Kurukshetra Division.
- Arranging workshops, skills training and marketing assistance for Self-Help Groups in the entire project area.

26. *Ujjwal Society, Mohali*

- Promotion of Self-Help Groups and Income Generating Activities in Hisar Division.

27. *Self-Employed Women's Association (SEWA), Ahmedabad*

- Traning of Self-Help Group Cluster Associations.

28. *Mahila Kalyan Samiti, Kurukshetra*

- Survey of how Self-Help Group women have used their income.

Appendices

Appendix 1

OUTLINE FOR VILLAGE ENTRY REPORT

1. Introduction

- Village details including location, geography, amenities etc.
- Basic details of a Village Base Map and a Village Resource and Tenure Base Map, as prepared by the villagers.

2. Confirmation/supplementation of RA findings

RA VE

- Population (No. of households)
- Scheduled Caste population (No. of households and %)
- Landless population (No. of households and %)
- Common land types and use

    - Woodlot
    - Sand Dune Fixation
    - Tree Grove
    - Agriculture/Horticulture
    - Grazing
    - Institutional Land
    - Temple/religious place
    - Roads/Footpaths/Dumping Ground
    - Disputed
    - Other
    - Villagers' Attitude to Forestry

3. Potential for project presence in the Village

- Villagers' assessment (enclose resolution passed in final VE meeting)
- Field team's assessment with reference to various HCFP models, include the team's recommendation whether to accept or reject the village
- Data for PA
- Important points that need attention during next phases

4. Entry Point Activities

- Description of major problems identified by villagers
- Activities that emerged in focus group discussions
- Activities selected, with their description, justification, budget and village contribution
- Report on EPA activity implemented, if any
- Phasing of activity that is to be implemented during PA/micro-planning

Annexures:

- Village Base Map
- Village Resource and Tenure Base Map
- Day-wise description of VE activities (summary of main events)
- List of Villagers contacted/present in meetings
- Resolution of the *Panchayat*
- Team members
- Questions frequently asked by villagers

Appendix 2

HOLDING OF FIRST VILLAGE MEETING FOR PA

Format : Extraordinary General Meeting of *Gram Sabha*. *Panchayat* Secretary with prescribed notice period.

Chairperson : *Sarpanch*.

Attendance : All adult members of the *Gram Sabha,* including women.

Resource Persons : PA Team members.

Material Required : *Shamiana, durries,* chairs, drinking water, refreshment.

Venue : Any place convenient for community members to assemble.

Agenda Items:

1. Songs by school children/women groups.
2. Introduction by *Sarpanch.*
3. Team Leader's presentation of project objectives, activities and role of community.
4. Review of Village Entry activities completed.
5. Review of Entry Point Activities.
6. Explanation of PA techniques.
7. Tasks to be accomplished during PA, including kinds of data that will be collected and reports to be prepared.
8. Outcomes, outputs and their uses.
9. Link-Up with other Project Process stages to follow.
10. Time scheduling of the PA exercise.
11. Open discussion and clarification of doubts.
12. Agreement of dates and Focus Groups.
13. Vote of thanks by a team member.

Appendix 3

TOOLS AND TECHNIQUES FOR PARTICIPATORY ASSESSMENT

Given hereafter is a short description of Rapid Diagnostic Tools and Techniques referred to under ***Chapter 6*** Participatory Assessment.

1. Village Meeting-cum-Discussion

Village meetings are occasions for convergence of a large number of people, for a specific purpose. In PA, village meetings and focus group discussions, are almost always convened by the facilitating team, for the purpose of discussion and/or data collection on issues of concern. They also provide opportunities for information sharing, sensitisation, and consultation between the two parties. Village meetings are perhaps the only fora for obtaining community consent through two-way communication on sticky issues, which require negotiations and/or accommodation of differing interests.

2. Focus Group Discussion (FGD)

FGD is conducted in a similar manner to that of village meeting-cum-discussion except that: (i) FGD is conducted with a smaller group; (ii) there is some commonality among the members of the group which keeps them together; (iii) FGD is meant for discussion on a specific issue; and (iv) the group is allowed to discuss the issue freely and the facilitators intervene only when necessary.

The outcome of a series of FGDs is later compiled and discussed in a general village meeting.

3. Village Historical Timeline

Village Historical Timeline is a visual profile of the key events and major milestones that have shaped the history of the village, as perceived by its residents. It serves the dual purpose of helping the facilitating team understand the history and development of the village, and provides insights into how the village has coped with various crisis situations in the past. The latter is very useful information for (i) understanding village social dynamics; (ii) understanding the local decision-making processes; (iii) assessing decision-making and crisis management capabilities of the community; and (iv) learning about the role/s of the institution/s in the village, if any.

The exercise is best conducted with a group of well-informed and interested village elders.

4. Trendlines

Trendlines are a means for visual depiction of the changes that have taken place over a period of time, in the history of the village. Accuracy and precision are not emphasised in PA, instead, the emphasis is more on gaining an understanding of the situation, as perceived by the inhabitants of the region, and working with them toward resolution of the problems identified. Trendlines are a useful means of learning about the relationship of the community with the natural resources and their degradation. They provide a historical profile of the region in the context of resource use by the people, and their efforts at conservation, if any.

Trendlines should be prepared for the following items:

- Resources, including civic amenities available;
- Common land available for different purposes;
- Institutions in the village; and
- General Socio-economic conditions of the village.

Trendlines are tools that can be used by the facilitating team to draw attention of the village community towards the problems of natural resource degradation in/around their villages.

Therefore, “Trendlines” do not end with the process of their preparation; instead, they provide leads for initiating a discussion on the more serious issues of concern.

5. Transect Walk

A transect walk is a method for obtaining a first hand impression of the village, observing and imbibing information from the residents of the village, and giving them an opportunity to do the same. It provides a better understanding of the geography and terrain of the village, as also a glimpse of the village social dynamics. It is also a means for building rapport with the village community, and should preferably be undertaken soon after community entry. It also generates information for use in later stages of PA (See RDT “Village Resource and Tenure Map”).

The procedure for conduct of this exercise involves walking along a route that cuts right across the village, and recording observations as one walks along. The route followed will include: (i) village habitation including the *Phirni*; (ii) private farmlands; (iii) common grazing land; (iv) common land leased out for agriculture/other purposes; (v) existing village woodlots, and (vi) land for other common utilities and wasteland.

6. Problem Identification

This tool is used for identification of problems of the community, and for judging the match of community expectations *vis-à-vis* project objectives and activities. It helps the community and the facilitating team to arrive at a common understanding regarding the problems of the community as a whole and its sub-sections.

The purposes of this tool are to: (i) identify common problems; (ii) understand and appreciate the problems of various sub-groups in the village community; (iii) identify the most vulnerable groups in the village community; (iv) provide information for preparation of a framework for the process of micro-planning. Special effort is made to identify and highlight problems of the disadvantaged and/or dependent groups, and provide a forum for their mainstream discussion.

The procedure in problem identification is to identify sub-groups in the village and the most convenient formation is social grouping and gender. Thereafter, all the concerned group members are informed about the meeting to be held with them for: (i) informing them in detail about the project components and process (how it differs from other schemes); (ii) learning about their problems to see how the project could help them; (iii) answering their queries concerning the project and/or your presence in the village.

At the end of the meeting, problems are summarised and classified into various heads as considered appropriate. The following categorisation has been found to be quite useful:

- ***Natural Resource Related***
  - Directly related to project models (e.g. Village woodlots);
  - Could be taken up by the project (e.g. Silvi-pasture);
  - Cannot be addressed by the project (e.g. Land levelling)
- ***Others***
  - Can be addressed by the project (e.g. IGA skills training);
  - Could be addressed by the project (e.g. bringing to attention of higher Government Officials);
  - To be addressed by the VRMC without project inputs (e.g. solving drinking water problem by seeking assistance from Rural Water Supply Scheme);
  - To be addressed by *Panchayat*, with or without the VRMC (e.g. addressing grievances of households deprived of BPL benefits);
  - Outside the purview of project/discussion (e.g. extending area of canal irrigation).

Any new problems arising at the end of the discussion should be put under the proper head. Such problem lists, prepared with each group, form the basis for preparation of a framework for micro-planning.

7. Interviews with Key Informants

Key informants are people who, because of their experience, knowledge, position or power, can provide useful information to outsiders. They may be interviewed for learning details of specific issues, planning and/or sequencing PA tools and techniques, providing clarifications, cross-checking information already collected, and overall guidance in general. Some hypothetical questions for interview with key informants could be as follows

WITH GRAZIERS

1. Number of cattle
2. Places for grazing/seasonal variation
3. Distance travelled/ time taken
4. Species available
5. Changes over time
    - Availability of fodder
    - Places
    - Distance/time
6. Reasons for decrease in availability
7. Forest products collected while supervising grazing

Meet such individuals frequently during the course of community entry and PA. Update them of the happenings of the day and listen well to what they say.

8. Village Resource and Tenure Map

A village resource and tenure map is a tool to arrive at a common understanding about resource availability, its use and management, and related problems. This map should include the following.

- Land
    - Irrigated and non-irrigated
    - Tenure: private, common (specify type), institutional and government
    - Use: forest, plantation, grazing land, agriculture, agro-forestry, farm forestry, wasteland
    - Soil type and erosion
    - Water bodies and other sources of water – dam, *kool*, tube well, stream, etc.

Thereafter, a composite map of all the resources based on individual resource and tenure maps is prepared, which should be presented in a general meeting along with individual resource maps inviting comments and seeking additional information, if any.

9. Farm Information Analysis

Farm Information Analysis is carried out to: (i) gather baseline data on the farming activities of individual households; (ii) gather information on farm households, use of tree resources and their attitudes to planting trees; (iii) enable farmer participants to learn about economic options for tree planting from the PA team whilst carrying out the exercise; (iv) enable participants to learn skills concerning processing and analyzing data through tally sheets, percentages and pie charts to form part of the Community Information System.

The enumerators make a door-to-door survey of all the households in village using the prescribed Farm Information Matrix. Thereafter, there is a community data analysis session asking the participants as to the characteristics of a good farming system. The meeting is wound on a note of consensus.

10. Common Land Resource Mapping

Common Land Resource Mapping is necessary to: (i) gather baseline data on the location, size and use of different common lands within the village; (ii) provide the community with a picture of the present condition of common lands and the way they are being managed; (iii) give participants the opportunity to learn mapping skills such as scale, symbols and direction.

The community should identify households who are major common land users, coming from within and outside the village. Members of the Facilitating Team are responsible for analyzing and writing up the matrix data and other information on common land for inclusion in the Community Resource Assessment Report.

11. Common Land User Analysis

Common Land User Analysis is done to: (i) gather baseline data on uses of common land resources; (ii) provide the community with a picture of the available resources on community lands and their uses.

While talking to key informants the major uses and user groups can be ascertained, as also rules governing their use, if any. The summary of discussions is discussed with the subgroup preparing the draft PA report and, with appropriate changes; is included in the PA report.

12. Seasonal Calendar/Seasonality

A seasonal calendar is a visual depiction of the seasonal variations in the issues/item under consideration, as per the seasonal zonation followed by the villagers.

Seasonality of resources imparts an understanding of the seasonal variations in the availability and use of forest resources, such as fodder grass, Non-timber Forest Products, fuel-wood etc. It enables identification of the periods of lean supply from forests, so that appropriate measures may be taken for supplementation of the same, and for development of appropriate intervention models for implementation.

The other themes on which seasonal calendars may be prepared are: (i) seasonality of avenues for employment and income; (ii) seasonality of festivities for social congregation; (iii) credit requirements; (iv) disease and illness; (v) drinking water availability; (vi) monsoons. The exercise is conducted in a group meeting (separate for men and women) and a brief analytical report is prepared on each of the themes.

13. Environmental Pressure-State-Response

This is necessary to: (i) gather baseline data on the state of resources and the environment in the village; (ii) identify the pressures that are leading to any adverse changes in the state of resources and the environment; (iii) identify the response needed from the community to improve the resource and environmental situation; (iv) enable participants to learn about trends in resource management in their community.

The data gathering session is started by asking the participants regarding the main resource and environment problems and issues in the village. The information on the state of the community resource and environment, and associated pressures and expected responses will provide information for selecting micro-projects and for preparing an Integrated Resource Management Plan **(IRMP)** for the community.

14. Demographic cum Socio-Economic Matrix

Demographic cum Socio-Economic Matrix is necessary to: (i) gather baseline data on demographic and socio-economic characteristics of the project village through enumeration of details of all households in the village, (ii) enable participants to learn skills in processing and analyzing data through simple statistical tools and graphic presentations, and (iii) lay the foundation for a Village Information System **(VIS)**, accessible to all residents.

15. Village Social Map

Although communities are considered as individual entities, they have different social strata and hence, social heterogeneity. The problems and needs of the people also differ from one strata/group to another. To recognise such groups and understand their unique/common interests, an exercise for preparation of a village social map is undertaken, which depicts the households, and their socio-economic characteristics, such as caste, occupation, land holdings, type of house, and so forth. Wealth or well being ranking (described later) is a component of the set of tools used for social mapping.

16. Socio-gram

A Socio-gram is a visual depiction of the different social groups in the village, and their inter-relationships. It uses venn diagramming to show this relationship. An in-depth analysis of socio-grams is most important for deciding about the process of problem identification and planning the future use/management of the village natural resources. It is also important in evolving decision-making mechanisms for resource use/management.

17. Institution-gram

An institution may be thought of as a cohesive organisation (formal or informal) that is governed from within and having a set of rules, regulations and objectives for its operations. Often, the term “organisation” is used synonymously with “institution”. An Institution-gram is similar to a Socio-gram except that in this case, it depicts the relationship/s between organisations/institutions that operate in/around the village, or with whom the villagers interact, such as the *Panchayat*, School, Block Development Officer, Bank, Youth Club, HRMS etc.

The villages selected in HCFP being of a larger size (200-500 households), there will be several organisations that should appear on the map, even though the village may have no relationships with them at present. Such relationships may be developed in future. This includes organisations such as the Khadi and Village Industries Commission **(KVIC)**, factories operating in the region, or the local HFD office.

18. Gender Analysis Matrix

Gender Analysis is the systematic effort to identify and understand the different roles, situations, needs and interests of men and women in a given socio-cultural context. It involves developing an adequate information base that identifies: (i) division of labour; (ii) access to and control over resources and benefits; (iii) what needs women and men have and why; (iv) the linkages between the above three factors and the wider socio-economic and legislative context; (v) the opportunities and constraints to the achievement of equality of opportunity and treatment.

The Gender Analysis Matrix can be used especially when no statistical data are available.

Appendix 4

HOLDING OF LAST VILLAGE MEETING FOR PA

Format, Chairperson, Attendance, Resource Persons, Materials and Venue are the same as for the first meeting **(Appendix 2)**.

Agenda Items

1. Songs by youth groups

2. Introduction by leader of women groups

3. Explanation of tasks to be accomplished: Finalisation of PA Report, Bye-laws of VRMC/VRMS, selection of office bearers and Link Workers

4. Presentation of PA draft report by community members

    - Community problems
    - Resource conditions
    - Social conditions

5. Discussion on and finalisation of PA Report

6. Adoption of PA Report

7. Selection of VRMC/VRMS members and resolution to constitute the VRMC/VRMS

8. Agreement on membership fee for the VRMC/VRMS

9. Selection of Link Workers

10. Scheduling Micro-planning and Micro-project Formulation activities

11. Valedictory

Appendix 5

SUGGESTED OUTLINE FOR A PA REPORT

1. Our Village

1.1 Location and Geography
1.2 History
- *1.2.1 Village History*
- *1.2.2 History of Common Property Resource*
- *1.2.3 Village Development History*

1.3 Institutions
- *1.3.1 Institution-Gram*

1.4 Infrastructure/Amenities
- *1.4.1 Roads and Village Phirni*
- *1.4.2 Water*
- *1.4.3 Sanitary Condition*
- *1.4.4 Electricity*

2. Our People

2.1 Summary of Social and Economic Groups
2.2 Demographic cum Socio-Economic Matrix
2.3 Social Map
2.4 Socio-Gram
2.5 Gender Analysis (Summary of Matrix)
2.6 Inter-Group Relations
- *Conflicts/Disputes*
- *Unifying Factors*

3. Our Resources

3.1 Transect Walk
3.2 Village Resource and Tenure Map
3.3 Common Land Map
3.4 Common Land User Matrix
3.5 Farm Information Matrix
3.6 Seasonality of Resources
3.7 Environmental Pressure-State-Response
3.8 Community Problem Identification

4. Our Opportunities

4.1 Regarding Common Property Resource
4.2 Regarding HCFP Plantation Models
4.3 Regarding Livelihood/Human Resource
4.4 Regarding Energy Use/Environment
4.5 Regarding Infrastructure/Amenities

5. We and the Community Forestry Project

5.1 Our VRMC/VRMS

- *5.1.1 Process of forming the VRMC/VRMS*
- *5.1.2 Constitution and Membership*
- *5.1.3 Bye-laws of the VRMC/VRMS*
- *5.1.4 Goals and Objectives of the VRMC/VRMS*

5.2 Responsibilities

- *5.2.1 VRMC/VRMS*
- *5.2.2 Link Workers*
- *5.2.3 Community/ Individuals*
- *5.2.4 HCFP*

Appendix 6

TOOLS AND TECHNIQUES FOR MICRO-PLANNING AND MICRO-PROJECT FORMULATION

A short description of individual Rapid Diagnostic Tools (RDTs) and techniques for use in Micro-planning and Micro-project Formulation referred to in ***Chapter 6 (Para 6.1.5)*** is given hereafter.

1. Village Meeting-Cum-Discussion

This tool has been described, at sl. no. 1, Appendix 3 (Participatory Assessment).

2. Focus Group Discussion

This tool has been described at sl. no. 2, Appendix 3 (Participatory Assessment).

3. Semi-Structured Interview

Semi-structured interviews are based on an interview guide, which is a list of queries and issues to be taken up for discussion in a specific order. It is flexible enough to allow the respondent and the interviewer to follow new leads (unlisted in the guide), and structured enough to signify that the interviewer is "in control" of the situation; knows what s/he wants to find out, but not trying to exercise excessive control over the respondents. It is the most suitable tool for interviewing people who are pressed for time, or are used to having "formal" appointments for use of their time.

The questions asked are to be: (i) short, simple and clearly stated; (ii) easy to understand; (iii) not loaded with suggestions/hints of the "expected" reply; (iv) unambiguous; (v) single queried; (vi) not putting the respondent in a delicate spot; and (vii) encouraging the respondent to speak his/her mind freely.

4. Community Problem Analysis

Community Problem Analysis **(CPA)** builds on pre-existing analytical skill of the community, and its problem solving methods, using the existing community structures; it helps the community members identify, analyse, and explore alternatives to their problems. It is a powerful and essential tool for correct identification of problems of the community, and for judging the match of the community objectives *vis-à-vis* those of the project. The role of the facilitator is to help the community identify and prioritise its problem/s, assess alternatives and arrive at a solution; often, this may involve new and untested approaches to problem solving by the community.

The purpose of conducting a CPA is to:

- Provide a forum for focused problem analysis;
- Appreciate and understand the problems of different sub-groups in the village community;
- Identify the most vulnerable groups/sub-groups in the village community;
- Discuss possible alternatives;

- Help the facilitating team to assess the problem solving capabilities of the community.

5. Community Options Matrix

Community Options Matrix tries to: (i) identify options to solving the various issues and problems that affect the community; (ii) select options for inclusion in the Community Resource Development Plan; and (iii) set a vision for the community.

The community prepares a vision for itself to solve persistent resource management problems. There are broad policy actions that can be taken by the community themselves as well as specific micro-projects that can be promoted in the village with or without the assistance of outside help.

The village community identifies where the specific resources to address the community's problems will come from: individuals, social groups, the whole community, or outside organisations. It is to be realised that HCFP assistance will be explored only when all the possible community resources have been considered.

6. Sorting, Rating and Ranking of Species

Sorting, Rating and Ranking of species is a method to: (i) identify preferences for specific tree species; (ii) understand reasons for such preferences; and (iii) let the community know the technical problems which, may limit the adoption of the preferred species.

Focus Group discussions are held with different focus groups – women, landless and landowners – on specific topics; farm forestry component discussed only with land owning group. After completing the exercise with all the focus groups, the VRMC/VRMS come out with a recommendation on species selection for different village micro-projects. The number of seedlings of each species required is then calculated, taking into account the area available for each model, and the prescribed spacing requirements.

7. Community Goal Setting Matrix

The purpose of this exercise is to establish community's short term (1 to 3 years) and medium term (4 to 8 years) goals.

Goal setting is linked to community visions that were expressed earlier at the PA stage and to the Environmental Responses established in Environmental Pressure-State-Response exercise. The community may indicate their goals based on the vision they have set earlier during community options assessment. The community has to identify only their short term and medium term goals, as the HCFP will be able to assist only with achieving these goals. The identified goals were prioritised with the most important ranked as (1).

The prioritised community goals are summarised into individual goal statements. A Community Goal Setting Matrix is given below.

Community Goal Setting Matrix (Example of goals)

S. No. (as ranked by community)	Community Goals	
	Short-term (1 to 3 years)	**Medium-term (4 to 8 years)**
1.	To improve community capabilities in resource management	
2.	To increase *Panchayat* income from better natural resource management	
3.		To reduce river bank erosion on agricultural lands
4.		To prevent water-logging of agricultural land
5.	To prevent wind blown sand from degrading agricultural lands and facilities such as roads, canals and homesteads	
6.	To increase planting of trees on agricultural lands	
7.	To use more cow dung for farm manure purposes	
8.	To introduce more fuel efficient cooking technologies	
9.	To promote income generating enterprises with disadvantaged groups	
10.		To reduce air pollution from brick making factories

8. Community SWOT Analysis

Community SWOT Analysis is carried out to analyse the strengths, weaknesses, opportunities, and threats to the community contributing towards achieving the goals set for themselves. The SWOT analysis links the PA baseline data and goal setting.

While different strengths and opportunities may benefit the community in their attempt to achieve the goals set, various weakness and threats are likely to hinder the community in achieving these goals.

An example of a SWOT Matrix is given hereafter.

Community SWOT Matrix (Example filled in)

Community Development Thrust Area	Strengths	Weaknesses	Opportunities	Threats

To improve community capabilities in resource management	Panchayat *has established resource management sub-committee* Panchayat *already earns Rs. 100,000 per annum from common property resources (land lease, sale of forest resources, mineral extraction leases)*	*No clear community strategy for improving resource management* No ability to prepare project proposals for accessing outside resources No funds available for improving common property resources	*Land available for building community resource management centre* Common property recourses available for income generation e.g. water, land and forest	*Some conflict over use/ management of community land and water resource*
To increase *Panchayat* income from better resource management	*Previous community experience in planting woodlots*	No experience in rising community forestry nurseries Exiting community forest protection systems not working	50 ha of *Panchayat* land available for woodlots Large landless population can be mobilized for plantation activities	Disputes over use of community land Termite attack in some existing community plantations
To reduce river bank erosion	*Large landless population can be mobilized for plantation activities*	*Panchayat* wants expensive physical bunds in order to use banks for agriculture	75 ha of degraded river bank available for stabilization	Farmers encroaching onto river bank land Illegal sand and gravel extraction taking place
To prevent water logging agricultural land	*Large landless population can be mobilized for raised bed and plantation activities*	No community experience in reclamation of waterlogged lands	100 ha of waterlogged agricultural land is available for reclamation through Farm Forestry	Farmers want land drained for agriculture HCFP worried about cost-benefit of reclamation
To prevent wind erosion	*Large landless population can be mobilized for plantation activities* Some experience in stabilizing moving sand dunes	Community unaware of new technologies in sand dune fixation	200 ha of community and private land available for sand dune stabilization	Only brackish water is available locally; fresh water needed from canal 10 km away
To increase tree planting on farms	*Farmers already inter-planting poplar with irrigated agricultural crops*	No experience in using improved clonal material	250 ha of irrigated land is potentially available for poplar	Commercial companies are leasing land for poplar planting from farmers in direct competition with project
To use more dung for manure	Some farmers already using cow dung instead of chemical fertiliser	Farmers prefer chemical fertilisers	1200 ha of agricultural land in need of manure	Cow dung used mainly for cooking Subsidy of chemical fertilizer is high
To promote income generating activities with disadvantaged groups	Panchayat *is already promoting empowerment of scheduled castes in village* One tailoring household already in the village	No community experience in bookkeeping and small business management Women not encouraged to take up income generation activities	Funds are available from outside sources for small-scale cottage industries	Rival political groups against empowerment of disadvantaged groups
To introduce fuel efficient cooking technologies	*Gobar gas already in use in village*	Other type of improved cooking stove not available in the village	Women's groups have asked for *gobar gas* connections to households Women's groups looking for energy efficient wood based cooking stoves	Shortage of cow dung Spare parts for *gobar gas* plants not available locally

9. Community Resource Development Plan

The Community Resource Development Plan focuses on short term action planning, while acknowledging medium-term needs of the community and that many community resource interventions will not provide all beneficial outputs until the medium-term and beyond. It also envisages preparing a map showing the proposed Integrated Community Resources Action Plan, to be completed within 3-4 years.

In a general village meeting the reasons for preparing a Community Resource Development Plan are explained when a matrix with columns to specify community objectives, community outputs, community activities and inputs, the time frame for meeting the objectives, is prepared. The group then presents their suggestions for meeting the community objectives. The participants examine these suggestions and decide on the final outputs through a consensus.

The findings are recorded in a prepared matrix and the participants are asked to identify indicators for measuring progress, achieving objectives and outputs, the stakeholders involved, and the time needed to complete the output. This results in a framework for a Community Resources Development Plan. An example of the Plan, duly filled in is attached.

10. Micro-project Proposal Preparation

The purpose of this exercise is to prepare a micro-project proposal for selected priority intervention in the community for submission to HCFP for assistance. The purpose is also to improve the community capability in preparing project proposals, in order to assist them in better accessing external resources.

In a village meeting the reasons for a micro-project proposal, and designing it properly so that it is more likely to be sustainable and prove to the funding agency that the project is really feasible. The participants establish the exact objectives of the micro-project and its beneficiaries, the reasons for deciding on the micro-project, its positive and negative effects, and the results if the project is not implemented. The community prepares a site plan and survey of existing biophysical resources for interventions that involve plantation of trees or water harvesting dams. This may need significant involvement of the facilitating team, with experience in survey and mapping. However, local skills could be used wherever possible. Participants can suggest knowledgeable and skilled members of the community to assist in survey work.

The participants would define what inputs are required for implementing the project, and how will the project be sustained. The participants should nominate a writer for the micro-project proposal, with the assistance of the facilitating team, and based on the outline of contents suggested by the HCFP, an example of which is shown in subsequent pages. This would lead to additional micro-project proposals.

Community Resource Development Plan (Example Filled In)

Only for Short-Term Action Plan (1-3 Years)

Community Objective	***Outputs expected***	***Key indicators (Targets)***	***Activities needed***	***Timing of activities***	***Input needed***	***Responsible stakeholders***
To provide sustainable income to poor households	*Poor households establish their own micro-enterprises*	*By year 3, the income from micro-enterprises enables the households to meet consumption needs, debt-servicing obligations and reinvestment needs.*	*Provision of credit* *Skill up-gradation* *Marketing networks*	*Year 1 – 5 units* *Year 2 – 10 unit* *Year 3 – 5 Units*	*Credit: Rs 200,000* *CFP Funds: 30,000* *Skills training* *Marketing tie-ups*	*20 women from poor households; preference to women headed households*
To establish a village woodlot on 20 ha. Community land	*Mixed plantation of fuel wood, timber and fruit trees; grass as under crop; live fencing with Jatropha, cactus etc.*	*85% of the planted saplings survive at the end of the third year*	*Survey, pitting, trenching, fencing, earthwork, planting, spot irrigation, weeding-hoeing, harrowing, care and maintenance, on-the-job training.*	*Planting: July – August 2000, 2001 and 2002* *Gap filling: 2001-2004 monsoon* *Maintenance as required*	*Saplings, tools, fencing material, fertilizer, manure, water*	*VRMC* *Village monitoring team* *Cluster team (including Link Workers)*
To establish a sacred tree groves on 1 ha, temple land	*225 surviving trees* *225 tree guards* *10 cemented benches for devotees to relax.*	*95% survival rate by 3rd year*	*Survey, pitting, trenching, fencing, earthwork, planting, watering, weeding-hoeing, care and maintenance, on-the-job training.*	*Planting: July 2000* *Gap filling: 2001-2002 monsoon* *Maintenance as required*	*Saplings, tools, tree guards; fencing material, fertilizer, manure, water, cement*	*VRMC* *Village monitoring team* *Cluster team (including Link Workers)*

Micro-project Rationale Matrix *(Example filled in)*

Why this micro-project?	***What are the positive effects if the project is implemented?***	***What are the negative effects if the project is implemented?***	***What are the effects if the project is not implemented?***
Micro-project 1: Women's IGA			
Only when people have sustainable livelihoods can they have abiding interest in environmental issues.	*As poor people get enhanced income from the project, they will have better motivation to protect woodlots and tree groves*	*No negative effect*	*Poor people may be driven by economic necessity to cut down trees from woodlots and tree groves.*
Micro-project 2: Village Woodlot			
Common land in the village, now not being optimally utilized, is severely eroding. In the near future, it may become fully waste and barren.	• *Environmental Improvement* • *Bio-diversity* • *Increased availability of biomass* • *Increased land fertility* • *Increased employment* • *Increased community income*	*Initially, loss of grazing lands*	• *Trend in use of common land for private profit will increase;* • *Trend in using common land for industrial or residential purposes will increase, affecting village environment adversely;* • *Land infertility and desertification will increase.*
Micro-project 3: Sacred grove			
There is a tradition in this village to revere trees as gods. The 1 ha sacred grove around the temple was destroyed 10 years before due to unknown disease. We want to restore our sacred grove.	• *Better environment and congenial atmosphere* • *Recreation and entertainment* • *Bio-diversity*	*No negative effective*	*Without the tree groves the temple surrounding has a desolate look.*

Micro-project Scheduling Matrix *(Example filled in)*

Objectives	***Activities***	***Schedule***	***Responsible stakeholders***
Micro-project 1: Women's IGA			
1. To provide sustainable income to poor households. *2. To develop capacity of poor women to undertake micro-enterprises.* *3. To strengthen women's capacity to contribute to household income.*	*10 Durri making units* *5 pickle making units* *5 fibre rope making units*	*Year 1: 5 units* *Year 2: 10 units* *Year 3: 5 units*	*20 women from poor households* *Cluster Team (incl. Link Workers)*
Micro-project 2: Village Woodlot			
1. To facilitate sustainable management of Common Property Resource of the village *2. To provide sustainable income to the village community* *3. To improve village environment.*	*Mixed species plantation on 20 ha. Panchayat land.*	*Year 1: 7.5. ha on site 1* *Year 2: 8.2 ha on site 2 + replacement on site 1* *Year 3: 4 ha on site 3 + replacement on sites 1 and 2* *Year 4: Replacement on sites 2 and 3* *Year 5: Replacement on site 3*	*Village Community* *VRMC* *Village Monitoring Team* *Cluster Team (incl. Link Workers)*
Micro-project 3: Sacred grove			
1. To enhance aesthetic look of a place of religious worship, which is a meeting place and cultural centre for the village community. *2. To use people's attachment to trees as a positive resource for community*	*Planting of ornamental and utility plant species on 1 ha plot belonging to the village Shiva Temple.*	*Year 1: The entire plot area will be planted up* *Year 2: Replacement* *Year 3: Replacement*	*Temple authorities* *Devotees* *VRMC* *Village Monitoring Team* *Cluster Team (incl. Link Workers)*

action.			

Micro-project Inputs Matrix *(Example filled in)*

Name of Micro-project	***Resource needs***	***Budget required***	***Responsible stakeholders***
Micro-project 1: Women's IGA			
Durri making Unit (10)	*Credit* *Project contribution*	*Rs. 1,00,000* *Rs. 20,000*	*Poor Women* *Cluster Team (incl. Link Workers)*
Pickle making Unit (5)	*Credit* *Project contribution*	*Rs. 50,000* *Rs. 5,000*	
Fibre making Unit (5)	*Credit* *Project contribution*	*Rs. 50,000* *Rs. 5,000*	
Micro-project 2: Village Woodlot			
	Land, project funds, sufficient number of saplings of appropriate species from cluster nursery, tools and implements, fertilizer and manure, voluntary labour for care and maintenance.	*Rs. 6,90,000*	*Village Community* *VRMC* *Village Monitoring Team* *Cluster Team (incl. Link Workers)*
Micro-project 3: Sacred grove			
	Land, project funds, sufficient number of saplings of appropriate species from cluster nursery, tools and implements, fertilizer and manure, voluntary labour for care and maintenance.	*Rs. 70,000*	*Village Community* *VRMC* *Village Monitoring Team* *Cluster Team (incl. Link Workers)*

Appendix 7

SUGGESTED TABLE OF CONTENTS FOR THE MICRO-PLAN

1. Problem Analysis

(i) General Development Problems
(ii) Resource Management Problems

2. Community SWOT Analysis

(i) General Development Problems
(ii) Resource Management Problems

3. Goal and Objective Setting/ Community Option Matrix

4. Village Resource Development Plan

(i) Land Resources – Land Resources Development Plan
(ii) General Plan for Human Resource Development (IGAs, energy, etc.)

5. Annexures (include plantation models as applicable)

i. Community SWOT Analysis

ii. Community Options Matrix

iii. Time Scheduling of Resource Development Plan (Activity Coverage site wise)

iv. Species Wise Summery of Trees for 5 Year Plan (based on ranking)

v. General Plan – Community Human Resource Development

vi. General Plan – Other Community Resource Development

vii. Details of Community Land for Forestry under Village Woodlot Model (with Sketch Map showing location)

viii. Details of Community Land for Forestry under Sand Dune Fixation **(SDF)** Model (with Sketch Map showing location)

ix. Details of Sites/ Community Land for Tree Groves (with Sketch Map showing location)

x. List of Farmers under Sand Dune Fixation Model (Private land) with details of land and Tree species and Sketch Map showing locations

xi. List of Farmers under Multi-species Farm Forestry **(MSFF)** Model, with details of land and Tree species

xii. List of Farmers under Poplar Plantation Model, with details of land and Clones

xiii. List of Households interested in Income Generating Activities

xiv. List of Households interested in Energy Saving Devices

xvi. List of Farmers willing to go for grass sowing.

Appendix 8

BRIEF SUMMARY OF IMPORTANT MANUALS & WORKING PAPERS DEVELOPED BY HARYANA COMMUNITY FORESTRY PROJECT

5. David Billing (2001) Participatory Monitoring and Evaluation – A Tool Box of Operational Instruments (Version 2)

Community forestry has evolved over the past two decades from a process whereby 'outsiders', from their own wisdom, planned community interventions, to a process whereby 'outsiders' were encouraged to listen to local people in order to understand their needs and to find solutions.

Participatory Monitoring and Evaluation In the present guideline; s based on the premise that the community ("the insiders") are the ultimate evaluators of a project's success and that sustainability depends on community's ability to analyse, judge and explain to others the value of various development options. At the same time, the staff of the HFD ("the outsiders") are facilitators and trainers of the community in this process.

These PME guidelines form a Tool Box with 27 sections (given below) to be used as needed by the trainer. The trainers may use the Tools in different orders when scheduling the training sessions, and may add "ice-breakers" of their own as needed during the training.

1. Introduction
2. Who will be responsible for PME?
3. What should be monitored and evaluated by the community?
4. How will Monitoring and Evaluation be carried out by the Community?
5. Monitoring and Evaluating Community Capabilities through Self-assessment
6. Monitoring and Evaluating Village Micro-plan
7. Monitoring and Evaluation Community Micro-projects
8. Empowerment Tree
9. Evaluating Community Capabilities
10. Records of Meetings
11. Community Financial Records
12. Analysing Trends in Common Land Indicators using Pie Charts
13. Analysing Trends in Tree Ownership on Private Agricultural Lands using Bar Charts
14. Micro-plan Tracking
15. Community Micro-project Record Books
16. Farmer's Own Record Cards
17. Nursery Record Books
18. Participatory Action Research
19. Tree Survival Surveys
20. Micro-project Request Profile Sheets
21. Micro-project Inputs Tracking Sheets
22. Micro-projects Milestone Tracking Sheets
23. Micro-project Output/Benefit Sharing Tracking
24. Micro-project Photo Monitoring Point
25. Community Monitoring Boards
26. Micro-project Standard Physical Progress Indicators
27. Micro-project Reviews

The Tool Box should not be used too rigidly, especially during the beneficiary training. There are, however, four mandatory Tools that should be emphasised during the training sessions: the Community Record Book (and all the relevant Tracking Sheets within the Book), the Farmer's Own Record Card, the Micro-project Monitoring Board and Tree Survival Surveys. These Tools form the linkages with the indicators and information needs of the HCFP.

6. R.N. Kaul (1999) Nursery Manual

Nurseries of suitable species were raised from the first year of the project to provide seedlings for various plantation models. Decentralised nurseries to be managed by women were also encouraged for which they were trained. In addition, there were modern nurseries and specialised nurseries at Ambala and Kurukshetra established for poplars. Over 31 million seedlings were produced during the currency of the project.

The production of superior nursery plants is an activity of great importance on which depends the success or failure of any plantation programme. The Haryana Community Forestry Project (HCFP) is rightly putting the much-needed emphasis on production of genetically superior plants through clonal propagation. This technology compared to current nursery practices requires a closer and more efficient nursery management in order to be cost effective. Hence, the need for developing a comprehensive nursery manual on advanced nursery technology for production of superior planting stock.

The manual has been developed to cater to the needs of three kinds of officials. Foresters and Range Officers, who will be directly responsible for production of clonal plants of *Eucalyptus* and *Poplars* in nurseries and would be able to acquire the necessary skills for clonal propagation by following the procedures described in the text. Forest Guards who will be looking after seedling production in cluster nurseries and many of whom did not have the advantage of receiving any formal training, may need to know the various aspects of seedling production, which may appear to be trivial in nature but are quite often ignored by them, though they are nonetheless important for production of superior quality seedlings. Divisional Forest Officers would find the manual as a ready reference.

The manual has eight chapters covering project background; site selection, design and construction; choice of species – forest tree and fruit species; seed technology including seed collection, extraction, drying and storage, seed quality, seed viability and testing, and seed treatment; seedling production technology both from seed and clones; silvical characteristics of most of the species with which HCFP is largely concerned, and monitoring and evaluation for concurrent assessment of the state of nursery management. There is a separate chapter giving details on clonal propagation of *Eucalyptus* and poplars and budding and grafting of fruit tree species.

The states of Maharashtra, Kerala, Andhra Pradesh, etc. have adopted root-trainer technology **(RT)** for production of seedlings. There are still opinions both for and against adoption of RT seedling production. The research institutes of the Indian Council for Forestry Research and Education, Dehra Dun, have recently initiated experiments covering different aspects of RT. The project has not made any trials in this regard so far but should keep an open mind on adoption of RT. It should, therefore, sub-contract a well-planned multi location trial to the Research and Development Circle for determining optimum (i) size of root-trainers and (ii) potting mixture in respect of the main tree species as evidenced by their field performance.

7. Madan Gopal (1999) Plantation Manual

The Haryana Community Forestry Project is raising plantations on over 7, 000 ha, of the project area under six models as indicated in the Overall Work Plan (OWP). The main objectives are:

- Arid and semi-arid areas affected by sand dunes and wind erosion are rehabilitated and made productive;
- *Panchayat, Shamlat* and institutional lands are rehabilitated and made productive;
- Wastelands within villages are made into community tree groves for amenity purposes;
- Multi-species agro-forestry cropping patterns are established on marginal and small farms;
- Poplar plantations are raised on prime agricultural land;
- Households establish improved homestead plots and/or kitchen gardens.

Raising of plantations has three distinct parts, namely (i) production of seedlings, (ii) planting of seedlings in field, and (iii) aftercare of seedlings.

Each area taken up for planting was surveyed, demarcated and mapped to help the villagers as well as M&E Team in assessing the assets created. In case of village woodlots and sand dune fixation, plantations were established in blocks of 5 ha and preferably 10 ha though planting of 20 ha blocks was not possible as envisaged. With such varied sites to deal with for plantations, there was a need for a comprehensive manual on plantations for guidance of the staff in the field and hence this manual. The manual has been developed to cater to the needs of project staff, from Forest Guards to Divisional Forest, who will be directly responsible for different jobs related to raising to plantations.

This manual mainly deals with the planting of seedlings in the field and their aftercare and consists of 9 chapters, *viz.:* the project background; choice of species; details of site preparation and soil working in different plantation models; protection mostly through fencing; planting operation; aftercare of plantations; protection from pests, diseases and biotic factors; plantation journal and job calendar and supervision of plantation activities. The appendix at the end of the manual gives the silvical characteristics of recommended tree species.

8. Anonymous (1999) Induction course for the Staff of Haryana Community Forestry Project – Training Package

The active involvement of the local communities in establishing sustainable forest management systems is now widely acknowledged as an alternative to the problem of deforestation and land degradation in India. The underlying course of depletion and or/degradation of forest resources having been identified as dependence-driven, the need for a change in the system of management emphasizing people's involvement in the management of forest resources has arisen.

The concept of Participatory Forest Management (PFM) follows from two inter-related issues. Forest departments do not have sufficient organisational capacity to control forest land degradation unless they have the willing cooperation of the local people and communities have no interest in protecting forest resources unless they benefit directly and have sufficient authority to be able to effectively protect resources. The purpose of PFM is to provide a framework for agreement for management of forest resources between the stakeholders and the forest departments. Haryana Community Forest Project (HCFP) is a step in this direction.

PFM marks a shift from the traditional systems of resource management and is characterised by the absence of any blanket prescriptions lacking in flexibility and adaptability; instead the emphasis is on site-specific micro-management. HCFP, an embodiment of participatory approach to resource management, thus has an entirely different organisational and functional set up for the purpose of its implementation. It is, therefore, necessary that the personnel staffing the various project positions have a general appreciation of PFM and understand the project, its objectives, delivery mechanisms and its process in their entirety. Hence, this introductory training course for all project personnel, which is given to them at the beginning of their joining the project.

The training manual starts with an introductory chapter which deals with the evolution and need for participatory management, followed by training details and course content and the appreciative analysis of PFM systems. Participatory Forest/Resource Management, its concept, evolution, salient features and PFM paradigms are dealt with. Thereafter, the manual gives the background of HCFP and discusses the Project, its methodology and approach. The various project components including Community Development are dealt with in some detail. The chapters that follow concern organisation and management of HCFP; training and communication; and Monitoring, Evaluation and Management Information System including carrying out of special studies pertaining to the project. Terms of Reference for Forest Guards (Operations), Foresters and Deputy Rangers (Operations), Sub-Divisional Forest Officers/Assistant Conservators of Forests, and Divisional Forest Officers/Deputy Conservators of Forests are given. The feedback from participants is discussed.

This training package gives the project staff a general appreciation of PFM and the project so that they are able to discharge their functions properly.

9. TA Team (2000) Field Operations Manual

The very innovative nature of Haryana Community Forestry Project, which is both interactive and participatory, requires development of operational procedures for the guidance of the project staff and the village institutions. While under the social forestry project, *Panchayat* were to protect and manage, the village woodlots created under that project, most *Panchayat's* did not abide by this commitment probably because of low level of institution building and poor community participation. This calls for strong efforts at institution building, which is precisely the strategy of HCFP.

Such a departure from the practices in vogue requires new organisational and human resource development paradigms, building in new field procedures and job definitions with new extension and promotional methodologies. This field operations manual is a preliminary attempt to meet these needs of the project and is useful to different levels of management and staff who operate the project.

This document attempts to evolve field operational procedures that can be visualised at the start of such a project though they were modified as and when necessary through experience gained in community capacity building and community forestry micro-project establishment. The manual has been developed as a result of study of existing procedures, extensive discussions and job descriptions.

The manual starts with an introduction giving the background and the use of the manual. This is followed by an overview of HCFP community forestry development strategy indicating the development philosophy and the sustainable development process. A nine stage process has been developed for the project as follows.

1. ***Selection of Village communities from the project area*** with no external considerations, other than the village's ability to participate actively in the development process and potential to meet the project goals.

2. ***Community Entry*** wherein the project staff, "the outsider", attempts to get the confidence and trust of the community and prepares the ground for a long term partnership with the village community.

3. ***Participatory Appraisal*** when the village community and the project staff undertake a learning exercise. Community level and specific stakeholder level consultations take place, village leadership and resource persons (Link Workers) are identified, and a general consensus develops for a long-term association with the project.

4. ***Institution Building:*** it will be the responsibility of the institutions (VRMCs) to plan, formulate, implement and monitor resource development plans, initially aided and supported by the project staff.

5. ***Village Resource Planning:*** Preparation of strategic village resource planning with the community and its institutions, Link workers and project staff collaborating to define goals for village resource development.

6. ***Micro-project Proposals:*** Preparation of micro-project proposals by the community for implementation together with HCFP, indicating the actions to be taken during implementation, budget, direct beneficiaries etc.

7. ***Micro-project Implementation including Monitoring:*** The community takes on itself the lead role in implementing the micro-project, including monitoring of micro-project progress.

8. ***Completion of Micro-project:*** The community is able to complete the micro-project, with the proviso that it is capable of fully taking over and sustainably managing the micro-project with no or limited external assistance.

9. ***Withdrawals of HCFP:*** The community is considered fully capable of planning, establishing, maintaining, and effectively sharing benefits from all their micro-projects. At this stage the community is considered fully mature, and the HCFP effectively withdraws from the community.

These nine stages can be grouped to form three phases, as follows.

1. ***Planning and Capacity Building Phase*** which includes stages 1 through 6.

2. ***Micro-project Establishment Phase*** where HCFP and the community are joint partners in implementation of several micro-projects, including stages 7 and 8.

3. ***Maintenance and Benefit Sharing Phase*** where the community manages the project with minimal external assistance, during which HCFP withdraws. The duration of the micro-projects will vary depending on the micro-project (e.g., 8 years in case of Village Woodlots).

10. S.K. Dhar, S.S. Grewal and Sanjay Bhirud (2002) Construction and Maintenance of Small Water Harvesting Dams – A Field Manual

The State of Haryana is a pioneer in the construction of small earthen dams in the Shivalik region for rainwater harvesting. Starting with village Sukhomajri in 1977, some 20 small dams are in position till date in the region. In view of the multiple benefits of these dams to the communities, HCFP included construction of 18 water harvesting dams in selected watersheds as one of the main components of the project. The main aim was to harvest excess monsoon run-off to:

- Improve the overall moisture regime in forest watersheds to ensure faster growth of vegetation on denuded hill slopes;
- Moderate floods and recharge ground water;
- Make water available for a variety of community needs such as livestock use, establishment of forest nurseries, etc;
- Insulate rainfed agriculture from the impact of droughts by providing limited supplementary irrigation to crops during moisture stress periods;
- Generate useful information, document implementation experience and assess economic and ecological benefits to justify expenditure.

Thus arose a need for a practical field guide for the staff for construction of these dams and hence the present manual.

This manual encapsulates the experiences of the construction of earth fill water harvesting dams in the Shivalik region and attempts to provide simple techniques for their design, construction, subsequent operations and maintenance including detailed investigation, field survey (prior to construction of dams), sediment control, livestock management, fisheries, crop production and plantations. The objective is to present a complete account of the salient details involved in planning and construction of small earthen dams in the Shivalik region of Haryana. Complicated mathematical derivations have been avoided from the text and are given as annexures.

Efforts have been made to present only the salient details of earthen dam construction, though there may be some site specific variations which are outside the purview of this manual.

The manual gives the need and purpose of water harvesting dams, their benefits, and past experiences. Preliminary investigations deal with selection of watersheds, their prioritisation and choosing of suitable dam sites. Detailed investigations regarding geological, hydrological and hydraulic investigations are dealt with, while surveying and levelling is concerned mostly with field surveys. Design of earthen dams discusses the types of earthen dams, their design criteria; design of embankments, spillways, and irrigation water distribution system. The construction of dams and the details connected therewith are discussed in some detail. Other implementation aspects like sediment control, livestock management, fishery, crop production etc. are given at some length, while community participation follows. Operation and maintenance (irrigation water management, water distribution system etc) are discussed and estimates and costs of construction dealt with.

After the construction of dams and demonstrating their usefulness to the village community, the project is to hand over the functional dams to the villagers for their further maintenance with conditions to ensure equitable distribution of water and protection and management of forest catchments.

14. TA Team (2000) Training Manual on Village Resource Management through VRMCs (Revised 2002)

One of the earliest efforts towards participatory management of village resources was made through the initiation of several national and state level programmes involving local communities in the management of forests. This was done through the adoption of different models of JFM. It helped the process of bringing together the Government and the people and initiated a new era of meaningful partnership. A positive impact of this approach was an increasing trend in the reversal of degradation of forests.

The model of participatory forest management being adopted by the state governments has started showing positive results in the form of forests being gradually regenerated. What is true of participatory forest management is also true of participatory village resource management, as the only way to ensure sustainable development of the villages in India is to adopt the model of participatory management in the wider context for all natural resources.

Formation of Village Resource Management Committees is one of the most important aspects of the community institute strengthening process being followed by the project. The VRMC is the people's instrument for optimum utilisation of their community resources, with a view to achieving the goal of sustainable development. In the context of community forestry VRMC is the agency mainly responsible for a collaborative venture jointly undertaken by the village community and the executive agency to manage natural resources.

The objective of the VRMC is sustainable management of natural resources. The major thrust of VRMC activities, therefore, is one on self-directed equitable resource use and management.

Creation of the VRMC/ is only the first step in institutionalising the process of community participation in the management of village resources. How successful it would be depends to a large extent on the ability of the VRMC to stand on its own and start working.

The present document is a training manual on Village Resource Management through VRMCs to make these committees a people's institution for resource management. The training is divided into 7 modules and 19 sessions besides the Introductory and Concluding Sessions. Briefly these modules and sessions concern: (i) the importance of community participation in village resource management, (ii) types of village resources, (iii) VRMC – people's instrument for resource management, (iv) developing an effective and strong VRMC, (v) Role of *Panchayats*/other institutions in village resource management, (vi) functions and powers of VRMC, (vii) framework of the VRMC, (viii) conducting effective meetings, (ix) mobilisation and utilisation of funds, (x) record maintenance and reporting, (xi) role of the VRMC in village resource development planning, (xii) village micro-planning and micro-project formulation, (xiii) micro-project implementation, (xiv) monitoring and evaluation of micro-projects, (xv) community capacity building for sustaining village resource development, (xvi) withdrawal from active involvement a micro-project review, (xvii) mainstreaming women's needs and priorities in village development, (xviii) consensus building and conflict resolution regarding benefit sharing arrangement, and (xix) guiding principles for sharing benefits.

The concluding session dealt with post-training evaluation and final summing up the proceedings of the training programme.

19. TA Team (2003) Training Manual on Self-Help Groups for Micro-Enterprise Development (Second Revision 2003)

Establishment of income generating micro-enterprises in project villages by disadvantaged groups (women, along with those without land and other resources or those who have low social status) is one of the 12 measurable outcomes envisaged under HCFP. Achievement of this outcome is necessary for the project to achieve its wider objective of building up the capacity of rural communities to undertake a process of sustainable management of natural resources. This is also necessary to achieve the immediate objective of involving disadvantaged sections of village communities in self-directed development.

The strategy of building up the organisational capability of the poor, with the core initial activities of thrift and mutually supported credit, through the medium of Self-Help Groups, is the starting point for learning about self-employment ventures, training support and eventual linkage with banks for investment credit.

Self-Help Groups (which are democratic institutions) have become the focal point of poverty reduction efforts and occupies pride of place in national programmes. The national goal is to form at least one Self-Help Group in every village in India during the next few years. The work of HCFP is a small contribution to the national effort. However, in the long run, the project will have to build up its own capabilities to implement this component. The cadre of Link Workers, available in project villages, is one section that, with proper training, can take up the activity.

This training manual has been designed as a tool for the persons forming and nurturing Self-Help Groups, to enable them to train members and office bearers of the groups in the concepts, processes and procedures of group functioning.

The manual is divided into 17 modules as follows:

Module 1: What is a Self-Help Group?
Module 2: Why Self-Help Groups?
Module 3: How to form a Self-Help Group?
Module 4: How to frame rules and regulations of SHGs?
Module 5: How to mobilize and manage SHG Savings?
Module 6: How to manage Inter-lending?
Module 7: How to educate SHG members about their responsibilities?
Module 8: How to train SHGs in bookkeeping and accounting?
Module 9: How to develop leadership in SHGs?
Module 10: How to develop the capability for conflict resolution?
Module 11: How to establish credit linkage with banks?
Module 12: How to develop and manage common funds?
Module 13: How to take up Income Generating Activities?
Module 14: How can an SHG become a vehicle for social development?
Module 15: Why and how to form networks of SHGs?
Module 16: How can SHGs establish linkages?
Module 17: How can SHGs achieve convergence of services?

The manual ends with two appendices on model bye-laws for SHGs and the SHG Federations.

The first four modules are devoted to explaining the concept of self-help and the principles of group functioning besides the points that need to be attended to while forming groups. The field worker can use these modules at the stage of group formation. This is followed by different topics that a group should understand for management of collective effort. The field worker can use each of these modules while attending the group meetings. It is obligatory for the field worker (be it the Link Worker or the grass-roots consultant) to be present as an observer in each of the group meetings for the first six months.

23. R.P. Balwan and Ajay Rai (2004) Maintenance and Protection of Plantations – Training Manual

Village common lands in Haryana are used by communities for common purpose, e.g. agriculture, grazing, fuelwood, fodder and shade, as well for other common uses like village fair, play ground, public utility, crematorium, religious gatherings, etc. HCFP has tried to develop such lands under the woodlot component where plantations of different species have been raised on such lands with active support of VRMCs. Grass sowings have also been carried out.

Village land resources are either owned by the community *(Panchayat)* or by individuals: Common land plantations require proper management practices to manage these resources in an effective and sustainable manner. After project exit, villagers in general and VRMC in particular have to manage these plantations using Village Resource Management Fund **(VRMF)** created with support from HCFP. Experience has shown that in the absence of proper institutional arrangements to protect, manage and utilise the common resource such as village woodlots, more often than not, the efforts and the resources are wasted and the objective of creating plantation remains unfulfilled.

The purpose of this manual is to orient the Executive Body members of the VRMC – responsible for management of community plantations – and private farmers who have established sand dune fixation plantations on private lands, regarding various technical and institutional issues related to protection, maintenance, management and utilization of these plantations.

The specific objectives of this training programme are to concentrate on issues related to:

- Protection and management of community plantations;
- Maintenance of community and private plantations;
- Utilisation, harvesting and marketing of products;
- Management of Resource Management Fund;
- Information on species, their aftercare and management.

This training manual is organised into following six sessions – each dealing with a major issue related to protection and sustainable management of plantations with the necessary lectures, discussions and handouts on various topics.

Introduction: Objectives of Training

1. Management Principles and Systems

Principles and options related to management of plantations.

2. Protection and Maintenance of Community Plantations

- Issues, options and mechanisms related to protection and maintenance of community plantations.
- Cultural operations in various types of community plantations.

3. Management of Funds

Utilisation of RMF for protection and maintenance of community plantations.

4. Harvesting and Marketing of Produce

- Inform VRMC members and SDF farmers on harvesting procedures
- Discuss process and procedure for marketing the produce.

5. Equity Issues in Management of Plantations

Sanitising VRMCs to the need, difference in priorities and importance of managing different interest groups and incorporating the concerns of poor and women in decisions related to management of plantations, including their planning and implementation.

6. Management of Private Land Plantations

Issues, options and techniques for management of plantations on private lands.

24. Pragati (2006) Institutional Capacity Improvement of Village Resource Management Committees (VRMCs)

This training manual on Capacity Improvement of VRMCs of the Haryana Community Forestry Project is in two parts. The first part is a Training Guidelines Manual for the Facilitator and the second is the Basic Training Manual for VRMCs.

Training Guidelines Manual

The manual contains guidelines for the facilitators on the training methodology, resources and the use of various tools to make the training effective. The three issues that the facilitators should keep in mind are as follows:

1. ***The Role and Responsibility of VRMC:*** The Facilitator is expected to convince the community about the role and responsibility of VRMC in sustainable development and management of natural resources, emphasize on the changes that have been brought about in the community by working in tandem with the VRMC, to pass on information about the structure of VRMC to the participants and to formulate guidelines for its successful running after completion on the project.

2. ***Leadership Development:*** An effective leader is required to play multiple roles in order to accomplish his goals. Creating a common understanding of the cause amongst the group is an essential skill required for effective leadership.

3. ***Effective Communication:*** A good leader works as a Change Agent in the community as effective communication is the key to bring about the desired change. A leader has to reach out to his group in a simple but effective manner.

The manual aims at guiding the facilitators in the use of various tools for training and the preparations that are required to be done before planning the training sessions for the community like, understanding the intellectual status of the audience, strategizing and use of various tools. Use of certain games with which the community relates aims at making the training methodology more interactive so that learning is experiential, which has lasting impact on the community and goes a long way in brining about change that sustains.

Basic Training Manual

There is a basic need to improve the institutional capacity of VRMCs for which various strategies have been chalked out. Training and Development is the main strategy. Continuous evaluation of the activities of VRMCs has revealed that the challenge now lies in developing and projecting VRMCs into strong and competent organizations that can function successfully on a long term basis towards achieving its goal of village and resources development.

The manual aims at facilitating the role of VRMCs in community development and providing a sensitive, transparent and responsible administration to the village community.

This module consists of an Introductory Session and six sections which fulfil training related needs at different levels. The module has been prepared based on Participatory Learning and Action **(PLA)** technique.

The Introductory Session mentions about the “Skill of a Trainer” and the preparation that is required to be done before planning the training sessions. It indicates to the trainer to handle difficult situations that may arise during course of the training.

The First Section deals with “Development” by discussing: the definition of development and the importance of collective participation in community development. ***The Second Section*** concerns with “Equality” where the major points discussed are: (i) structure of society and social equality; (ii) gender base inequality; (iii) equal opportunities to all; (iv) sense of belongingness; (v) togetherness; (vi) transparency and accountability (audits); and right to information Act 2005. The

purpose of this session is to (i) cause awareness about our structure and the social inequality created as a result of this structure; and (ii) explain the importance of social equality.

Gender base inequality, aims at creating an awareness and understanding (i) for gender based inequality; (ii) that gender discrimination is not natural; (iii) that gender based discrimination can be removed by the society itself; (iv) of the male to female ration in Haryana; (v) about female foeticide; and (vi) mental and physical harassment of women.

The subject of Self Sufficiency is dealt with in the next section **(Section 3)**. The major points discussed being: (i) importance of self sufficiency; and (ii) how self sufficiency develops a sense of pride. **Section 4** is concerned with identification and use of resources and discusses the following.

- Societal resources their development and benefits to the community
    - Institution of society
    - Institution of family
    - Local agencies
- Societal Management of Resources
    - Technique of recording of resources
- Resource planning

General networking **(Section 5)** mentions the various systems of networking like: (i) Federation; (ii) Alliance; (iii) Coalition; (iv) Partnership; and (v) Networking. The **Sixth Section** is concerned with Feed Back and Evaluation where the following points are emphasized:

- Methods of feed back
- Importance of feed back in continuous improvement

The training methodology includes (i) Brainstorming; (ii) Presentations; (iii) Street plays; (iv) Stories; and (v) Workshops and other class activities. The tools used for training methodology consist of, Flash cards, charts, case studies from different model villages, and games (snakes and ladder) etc.

Appendix 9

BRIEF SUMMARY OF IMPORTANT IN-HOUSE SPECIAL STUDIES CARRIED OUT BY THE HARYANA COMMUNITY FORESTRY PROJECT

1. Institute of Rural Management, Jaipur (2000) Common Land Study

A study on common land availability in the project districts was undertaken in 1999-2000. The main findings of the study are as follows.

- Haryana villages over the years have lost 10% of their common land due to encroachments and 9% through social transfer. In Kurukshetra District alone 46% of common land has been lost due to encroachments.

- Nearly 53% of all common land in the State is leased for agriculture. The lease money is a major source of income to the *Panchayats*.

- In many villages there are litigations over illegal occupation of common land, but in many others, illegal encroachments have not been legally challenged.

- The major discernible change in land use on common lands has been that the area under culturable waste has decreased from 17% in 1960 to 5% in 1999.

- About 10% of village households get direct benefits from common lands mainly through grazing.

2. Development and Research Services, New Delhi (1999) Study on Utilisation and Marketing of *Eucalyptus*, Poplar and *Ailanthus* in Haryana

This study is concerned with utilization and market potential of three fast growing and commercially important species (*Eucalyptus*, poplar, and *Ailanthus*), in Haryana. In order to motivate the farmers and communities in the State to take up tree plantation on a large scale, it is important to ensure a proper market and remunerative returns to them. It is, therefore, necessary to know the present utilisation, market requirement, supply scenario and price trends of these three species.

Keeping in view the varying geographical occurrence of each of the three species, a survey was conducted in all major timber markets and some of the villages in 18 districts of Haryana. In addition, a few timber markets in neighbouring states were also covered. No instance of sale of timber of *Ailanthus* was encountered at any of the timber markets in Haryana. Only timber merchants in Delhi, Jaipur and Jalandhar reported to be selling *Ailanthus.*

Some of the conclusions of the study are as follows:

- Twin cities of Yamunanagar and Jagadhari are the most important timber markets in Haryana in terms of volume traded, with *Eucalyptus* and poplar constituting the bulk of the trade.

- Majority of the farmers (75%) resort to contractors for selling trees. On an average, contractors charge 5% of the estimated market value of the tree.

- The important reason for the farmers selling their crop to the contractors is that they find it difficult to arrange for the harvest and transportation of the trees to the market on their own. There is lack of awareness (70% farmers) about the concept of Tree Growers Cooperatives. Nearly 85% of the farmers are unaware of the role of State Forest Development Corporation.

- The growing of a forest crop in general and *Eucalyptus* and poplar in particular, by the farmers, is the manifestation of complex interplay of several factors like, (i) financial benefits from a forest crop, (ii) effect on agricultural crops by trees, (iii) location of a village, and (iv) size of the land holding.

- The total state level consumption of *Eucalyptus* and polar in the year 1999 was 968 and 1,459 thousand tonnes with a market value of Rs. 1662.30 million and Rs. 4229.10 million, respectively, at current prices.

- The projected consumption of *Eucalyptus* for the year 2004 was 827,000 tonnes. This means a decline of 14.57%, which is not due to any decline in demand but due to continuous decreasing supply. The projected consumption of poplar for the same year (2004) was 1,934,000 tonnes, which is an increase of 32.56% due to constantly increasing demand as well as supply.

- Both *Eucalyptus* and poplar are imported on a large scale in Haryana, mainly from Uttar Pradesh and Punjab. The extent of import in the State is as much as 53% of the total consumption for *Eucalyptus,* while for poplar it is 61%. A total of 513,000 tonnes of *Eucalyptus* and 890,000 tonnes of poplar were imported during 1999.

- There was a deficit of 67,000 tonnes of *Eucalyptus* and 8,000 tonnes of poplar reported by the buyers of Haryana.

- It is perceived that supply of *Eucalyptus* will decrease in future, while that of poplar will increase.

- Average market price of all sizes of *Eucalyptus* and poplar showed a definite increasing trend from 1995 to 1998. However in the year 1999, there has been a slide in the prices of both species.

- The gap in the prices of *Eucalyptus* and poplar is constantly decreasing from 1997 onwards. While in 1996, the price of poplar was twice that of *Eucalyptus* for all girth classes, this gap is expected to constantly get narrower. For the largest girth class of poplar and *Eucalyptus* in particular, the projection suggests that the prices of both the species are going to be equal by year 2008.

- It is estimated that as much as 50.7% of *Eucalyptus* and 53.1% of poplar traded in the markets of Haryana in the year 1999 were routed through commission agents. It is further estimated that *Eucalyptus* and poplar worth Rs. 4,418.6 million was channelled through contractors, which means an estimated revenue loss of Rs, 220.90 million to the farmers.

- The loss of revenue on the sale of *Eucalyptus* and poplar to the farmers at the hands of commission agents in the year 1999 is estimated to be Rs. 155.10 million.

- The total estimated revenue loss to the farmers in the year 1999 works out to be Rs. 376 millions.

- The extent of total shortfall, which needs to be catered by an increased supply from within the State is 5,798,000 tonnes for *Eucalyptus* and 8,983,000 tonnes for poplar. The shortfall is about 60% of the total state level consumption for both the species.

- There is also a large deficit in the supply of *Ailanthus*. The deficit is two or three times the actual current consumption in all the three relevant markets (Delhi, Jaipur and Jalandhar). Yet in quantitative terms the entire consumption of *Ailanthus* is much lower than *Eucalyptus* or poplar.

3. D.C. Sharma, R.C. Jain and O.N. Kaul (2000) Study on Multipurpose Tree Species of Poplar, Eucalyptus and *Ailanthus excelsa*

Haryana Community Forestry Project is encouraging planting of multipurpose tree species like *Eucalyptus*, poplar and *Ailanthus excelsa,* which are already being planted by the farmers. A study was undertaken to assess the growth potential of these three species on different sites with a view to provide some guidelines for raising these plantations in future.

The study was carried out through measurement of temporary sample plots laid out for the purpose and field surveys over the entire planting range of these species in Haryana. Some of the broad conclusions of the study are as follows.

- Poplar plantations in Haryana have mostly been raised on farmlands (Agro-forestry) as block plantations, as line plantations (single/double rows) along roadsides and on field bunds (Farm Forestry). The clones of *Populous deltoides* used for planting are G-3, G-48, G-57, U-DAI and S-7C 15, all developed by Western India Match Company.

- The performance of G-3 and G-48 poplar clones has been very good. Clone S-7C15 has also done well in Hisar and further growth needs to be monitored. Overall success and growth performance of various clones has shown that best growth has been obtained in areas of Yamananagar Forest Division (MAI 35 m^3/ha/year). Other areas in Haryana where irrigation is available can also be tried for poplar planting.

- Farmers are of the opinion that all sale of poplars should be through the HFD instead of a direct deal between wood suppliers and industries.

- *Eucalyptus* has been raised in Haryana as block plantations, along the canals and roadsides as strip plantations (more that 3 rows-multiple rows), as narrow strip plantations (3 rows) or as line plantations of single/double rows. It has also been planted on field bunds (Farm Forestry) as single or double rows (line plantations). The species mostly raised (through seed) is *E. tereticornis,* though some clones and tissue culture raised seedlings of the species have also been planted on an experimental basis to see their performance in the field. *Eucalyptus* clones used were procured from ITC Bhadrachalam Paper Boards Ltd. (BPL) namely, BPL-3, BPL-7, BPL-10, BPL-27, BPL-91, BPL-128, and BPL-130. Tissue culture raised plantations are: TERI-1, TERI-2, TERI-3, TERI-7, TERI-10, TERI-26 and TERI-362. A plantation of local seed origin has also been planted as a control.

- Sample plot data have shown that *Eucalyptus* can easily be grown in varied types of soils in Haryana. Longer rotations may be needed for poorer sites. Bhadrachallam clones (BPL-3 and -7) have proved to be very productive with MAI of 17 m^3/ha/annum at age 7 years. However, some other highly productive sites have also been spotted (MAI 16 to 22.8 m^3 at age 7 years). These plantations should be used as seed sources/ clonal material for future plantation activities.

- *Ailanthus excelsa* is comparatively a recent introduction on farmlands in Haryana and plantations are still young, ranging from 3 to 6 years. The species has been raised in blocks and along roadsides and is very promising, being observed to be growing even in very dry places. The species has good growth in Mahendragarh, Narnual; Rewari; Hissar and the Aravalli project with better production potential in Mahendragarh and Narnaul areas. More emphasis should be given to the species for eco-restoration and environmental conservation in plantation programmes.

- Farmers are procuring poplar-planting material from WIMCO, HFD and private nurseries (where there is no quality control). Some farmers have their own nurseries. The planting material for *Eucalyptus* is being obtained from the HFD. HCFP/HFD should provide extension service to private nursery owners and help and encourage them to produce quality-planting material through improved nurseries and nursery practices.

- Farmers are definitely willing to plant new high yielding clones of poplar and *Eucalyptus* provided the same are made available to them along with the package of practices to be adopted, for raising plantations of these new high yielding clones.

- Wood based industries are meeting their needs of wood from neighbouring states at a cheaper rate and this is a sheer loss to tree growers (farmers) in Haryana. It was suggested that all material should first be obtained from Haryana and then purchases be made from outside the State, if more material is required.

- It is necessary to undertake a follow-up study on assessing the quantity of wood available annually of the three identified species from farmlands and other private sources, in view of the fact that substantial quantities of wood are being supplied by private sources in the state.

4. S.K. Sharma (2000) Study on Energy Consumption Patterns and Technologies in Villages of Haryana

The study aims at evaluating the supply and demand pattern of energy sources in different sectors of rural economy and suggests ways and means to reduce the consumption of wood and cow dung as fuels by introducing energy efficient devices such as domestic cooking stoves *(Chulhas),* energy efficient cremation and industrial furnaces etc. The study also identifies various socio-economic and cultural constraints for the promotion of such devices.

The information is based on data collected from 30 randomly selected households in each of the 34 villages, identified under HCFP. These surveyed villages are spread over 10 Districts and 18 Blocks in the State, encompassing two zones namely (i) Shivalik Hills, Foot Hills and the Central plains comprising the districts of Ambala, Panchkula, Yamunanagar and Kurukshetra, and (ii) Arid Sandy Plains, consisting the districts of Hisar, Bhiwani, Fatehabad, Rewari, Sirsa and Mahendragarh.

Population of 78% of the villages surveyed is less than 3,000. 75% of the households are in the plains, while 9%, 5.43% and 9.57% of the households surveyed under the present study are located in the hills, sandy and composite regions respectively. Percentage of households belonging to scheduled castes at 34.5% is higher than that of Other Backward Castes or Upper Castes at 20-22% respectively. 94% of the households surveyed are agriculturists, either self cultivators, tenants or landless labours. Role of rural industry is almost negligible as a source of employment. This being an important factor, leading to rural-urban migration, is a cause for concern.

Nearly 53% households are landless and 35.6% are only marginal farmers with landholdings between 1-5 acres. About 1.6% of households have farms larger than 15 acres. These small holdings are not economically viable, which is reflected in the largely low income among these rural households. Only 23.5% households have income higher than Rs. 3,500 per month, while 26% households have income less than Rs. 1,000 per month. This grim picture of the Haryana economy necessitates the promotion of rural industry for the economic upliftment of the rural population.

The study reveals that 91% of the households are electrified. The joint family system is on the wane in the State as 64% of households are nuclear family units. Nearly 50% households consist of 4-6 family members and 21% have 1-3 members. This indicates that the small family norm is gradually getting accepted by the people in rural Haryana.

Education level of rural households is very low. Only 13% households comprise members with qualifications higher than matric. Nearly 73.3% housewives are illiterate against 46% male heads of family. As compared to 6% educated housewives, the number of educated male heads is 23%. Thus, there is a need to promote girls' education in rural Haryana.

Some of the findings of the study are as follows:

- Per capita per day consumption of fuel is (1999):
    - 0.87 kg cow dung
    - 0.66 kg agricultural residues
    - 0.58 kg wood
- More than half of the households increase their fuel consumption each year.
- Energy sources used by households are depleting local forest resources and reducing soil fertility (less dung and green manure being available).
- Only 8% of households use improved *Chulhas* and ⅓ of the households use pressure cookers.

- More than half of the households would be willing to use an improved *Chulha.*

- Most widely used energy devices in the rural households in order of their ownership are: (i) Traditional *Chulhas* (ii) LPG (iii) Improved *Chulha* (iv) Pressure Cooker (v) Wick Stove (vi) Solar Cooker (vii) Nutan Stove and (viii) Biogas plant. The main function of these devices is for cooking and heating. Commonly used device for lighting is electric bulb. This is followed by electric tube light and kerosene lamps.

- Response of the households for change over to fuels other than wood shows that the preference is in following order: LPG, Kerosene, Cowdung, Agricultural residues, Biogas, Coal and Charcoal. On the other hand, the higher preference for cowdung and agricultural residues is due to their low cost and easy availability. Though Biogas is a clean fuel, it is less preferred, as it involves huge infrastructural cost and large requirement of livestock. Coal and charcoal are the least preferred fuels.

- Preference is for cooking devices such as LPG burners, Pressure Cooker and Improved *Chulha* in that order because they are easy to use and energy efficient. First preference is for cooking device followed by lighting and heating devices.

- It is concluded that the use of traditional as well as commercial fuels is on the increase though the availability of traditional as well as commercial fuels is less than required. As a result, the expenditure as well as time spent on collection of fuel is on the rise. The rural population wants fuels which are easier to use and are efficient. Same trend is seen in the case of energy devices.

5. Atul Kansal, Paolo Mori, O.N. Kaul and Bharti Solanky (2001) Community Environmental Management Study in Haryana Village

It was felt necessary to undertake a "Community Environmental Management Study" in order to understand the environmental implications of the activities planned under the project and to develop environment-friendly micro-projects for project villages. The study was undertaken in the first selected 60 target villages spread over 10 civil districts and five project divisions of the State, representing various agro-ecological zones, of the project intervention area.

A summary of some of the broad findings and proposed interventions/recommendation, are mentioned hereafter.

- A detailed account of baseline environmental assessment for project villages has been presented. For each of the environmental components, major issues have been discussed along with case studies from the villages.

- The level of intensity of each environmental issue has been indicated. The ten most important ones (presented in a descending order) are as follows. The figures in brackets indicate the total number of villages that reported High, Medium and Low intensity of a specific issue:

    - Damages by blue bulls (29, 16, 12)
    - Pollution of *Johads* (15, 11, 8)
    - Drainage of domestic wastewater (5, 16, 11)
    - Dying of trees due to termite attack or other diseases (2, 13, 13)
    - Dust storms (3, 7, 17)
    - Wastage of domestic wastewater (2, 11, 12)
    - Pollution from garbage collection/*Hadda Rodi* (3, 12, 6)
    - Quality of drinking water (3, 10, 8)
    - Fuelwood pressure on forest resources (3, 8, 8)
- Lowering of the groundwater table (2, 6, 9)

- For all significant environmental issues, environmental interventions have been suggested. These pertain to air, water, waste management, energy, land, and livestock. It would be necessary to involve other agencies (as indicated in the report) in implementation of corrective actions for some of the environmental problems. Before implementation of the suggested interventions, it may be necessary to conduct a detailed feasibility to develop specific environmental micro-projects for each of the project villages. These micro-projects could then be integrated into the overall project framework.

- A review of the 60 village resource management micro-plans have shown that though they were quite comprehensive with respect to other parameters, their coverage of environmental issues such as water supply, wastewater disposal, drainage, solid waste management, pollution control, energy sources and consumption, local industrial activities, etc. were not adequately covered in all the reports except where the local community had expressed their interest to develop some environmental improvement micro-projects.

- A sample of 45 village natural resource plans were examined to assess the plantation patterns set by the communities and individual farmers, followed by an Environmental Impact Assessment **(EIA)** carried out on the basis of 18 indicators related to forest cover, land, water and air. The results show that: (1) village woodlots have been proposed on 60% of the total *Panchayat* land, (2) most of the available land within and around villages has been earmarked for tree planting, (3) Farm Forestry has been planned on approximately 16% of the total private farmlands, and farmers prefer low-tree-density agro-forestry systems rather than block plantations, (4) the degree of biodiversity of the proposed plantations is generally good, (5) *Eucalyptus* woodlots in the project villages do not show negative environmental impacts

related to soil and water conservation, (6) medium positive impact is generally expected on degraded areas; as for eroded lands, the intensity of erosion is often such that plantations alone are not deemed sufficient, (7) increasing the availability of dung for farm yard manure, which is one of the expected benefits of the plantation programmes, is likely to be modest, and (8) unsustainable pressure on common forest resources might not decrease, as expected.

- The results of gap analysis suggest that HCFP should consider adjusting the standard plantation models on different aspects, which, depending on the model, should include diversification into sub-models, refining the approach, and/or revision of targets.

- Priority should be given to the three southern and western project divisions (Hisar, Bhiwani and Jatusana), and to Yamunanagar District in the north in terms of geographical areas of intervention.

- It is suggested that the project have an experienced NGO who could be involved mainly to: (1) assist local NGOs in implementing the environmental programmes outlined, (2) assist project field implementers in the general process of grassroots institutional and community capacity building, and (3) provide methodological assistance to HFD field staff on various aspects of Community Forestry.

- It is recommended that the project concentrate efforts on pilot village clusters affected by high degree of environmental degradation. The aim is to promote implementation of best environmental management practices through integration of project mainstream activities with new initiatives designed to address specific issues.

- It is suggested that the project should support establishment of a network of schools and environmental clubs in the project villages to promote awareness campaigns on various environmental and resource management issues. It is reported that GOH has decided to set-up Eco-Clubs in at least 100 selected schools of each district to create awareness about clean environment. These clubs would help in spreading environmental awareness and also carry out action-based programmes for protection and improvement of the environment. This is a welcome step for the project.

13. Luca Ferruzi (2003) Analysis of Project Tree Plantation for Multi-Species Farm Forestry, Kitchen Gardens and Sand Dune Fixation Components

The Haryana Community Forestry Project (HCFP) carries out its activities, at the local level, through establishment of Village Resource Management Committees (VRMCs) which, with the technical and administrative assistance of project field personnel, are responsible for planning and execution of field activities including the three plantation models, namely, Multi-species Farm Forestry, Sand Dune Fixation and Kitchen Gardens **(KG)** which form the subject of this study.

The present study deals with an overall assessment of the identified bottlenecks and constraints, a field verification on a representative sample of villages (15%) of the extent to which they affect model performance, their possible grouping into some sort of homogeneous classification and the eventual enunciation of feasible strategies and recommendations aimed at improving survival percentages and adoption rates.

The main findings and observations, related more directly to model performance were as follows:

Multi-Species Farm Forestry: The low level of importance given by adopters of this model is possibly a consequence of the project's own difficulties, not entirely under its control, in dealing with models and for which scarce efficacy of HCFP extension efforts were generally recorded.

A number of bottlenecks were also observed with the prevailing seedling demand, supply, and transport system, together with shortcoming of field assistance. The applicability of this model in arid areas of Hisar Circle further had intrinsic limitations for both dry lands and irrigated farms.

Kitchen Gardens: This model mainly suffered from scarce suitability of many villages' internal layouts which did not permit safe protection of seedlings, with a large proportion of them being lost as a consequence of general disturbances occurring within courtyards.

Sand Dune Fixation: These activities have been lagging behind partially due to the farmers negative attitude of not making available substantial portions of their land for exclusive forest use and partially to project's own inability to establish plantations on land made available due to several consecutive years of drought.

Other constraints of a more general nature included the working relationships between Link Workers and Forest Guards within the organisation, at the field level, as well as shortcomings in the day-to-day ongoing field implementation of monitoring and extension functions at farmer level.

Recommendations

Discharging the field activities of LW with regard to MSFF and SDF, are to be streamlined by the implementation of a proposed Field Inspection Programme. This would include a pre-organised, scheduled system of field visits to adopters to include a *Preliminary* Field Survey, a Pre-planting Field Inspection, and a Post-planting Survey, as well as quarterly routine field inspections per year, with the dual aim of improving timely people communication with the project (field monitoring function) and project's communication with the people (field extension function).

In order to increase motivation of LW, payment could be based on of performance bonus linked to the accomplishment of measurable targets, to be paid in addition to present allowances.

The project approach towards SDF activities is quite profoundly touched upon by the introduction of a new Degraded Land Amelioration **(DLA)** agro-forestry model, which replaces both SDF and Modified Sand Dune Fixation **(MSDF)** models with the aim of proposing a more economically viable and environmental friendly land use alternative to the present planting system for the project's most arid and less productive areas.

Other general recommendations that may prove beneficial in addressing low survival figures would further include a set of different measures such as, introduction of Village Temporary (fly) Nurseries, improvement of field level project operational organisation, minor changes in Survival Bonus payments, introduction of pro-active field extension, reduction in the number of "real" model adopters and the opening-up of project to non-adopters.

15. Samvaya (2003) Impact of the training on knowledge, attitude and practices – An assessment

The report outlines the finding of the impact study commissioned by the HCFP to analyse changes in knowledge, Attitude and Practice (KAP) in the VRMCs and to make recommendations for improvement in future training activities and further development of VRMCs.

The study was taken up in August-September 2003, with a total of 45 villages of the project sampled. In order to evaluate whether training has had an impact on individual learning, the study relied upon the methods that are used in the absence of any baseline data, which include (a) self-assessment by the trainees, (b) Indirect assessment of the trainees, and (c) use of control groups.

Some broad conclusions of the study are as follows:

- Usefulness/relevance of the training programmes conducted for the VRMC representatives was rated quite high by the respondents. Leadership and communication skill training was identified by the respondents as their favourite training (especially scheduled casts, other backward classes and illiterate) followed by VRMC management training methods. Usefulness of the topics covered in the training programmes, to carry out their role and responsibilities, seems to have influenced this perception.

- Various training programmes have helped to improve the knowledge, awareness and skill of the trainees in general. Though there are differences in the way in which the trainees have gained from the training programmes based on gender, age, literacy and position in the VRMC, the gap is not alarming. On various aspects substantial differences were observed between those who have received training and those who have not. Men in particular point to increased knowledge, attitude and practice amongst trained VRMC members as compared to untrained control groups.

- Link workers generally found the training to be more useful, as they are directly involved in most project activities and have more opportunity to practice.

- The perception of women differed from men in liking of different training programmes. The differences were significant in case of PME, Money Management, VRMC management and Leadership & Communication Skills training. In general women responded more positively to training than men. Particularly, women respondents attributed a significant increase in their ability to communicate and articulate issues through different opportunities provided during training.

- There is an increase in awareness and ownership of micro-plan and micro-planning process in the trained group. This in turn resulted in high participation in the micro-planning exercises which was perceived to be aided by understanding gained from training in certain cases.

- In spite of training being considered as useful by the respondents and the analysis supporting this fact when the KAP of trained group is compared with the control group, the issue of trainee interest in the specific training programme is quite important.

- The changes in KAP due to the training programmes have been limited to the trainees, and have not devolved to other representative of the VRMC who did not participate in the training. Sometimes the practice/skill of various aspects of VRMC functioning imparted in the training programmes have not been successful.

- One of the critical points in efforts to assure greater impact from training investments is the transition from training back into the work setting. It is strongly recommended that the training programmes on different topics should include “action planning” to facilitate the process. The concerned staff should also be made part of the action planning exercise.

In order to achieve the desired outcome of developing VRMCs into effective community institutions, it is essential that HCFP adopts measures for Institutional Development and Organisational Development. This would mean that capacity building process has to move beyond the classroom-training format and reliance on ‘single’ training programme on different topics to the VRMC members, and facilitate a participative learning strategy.

18. O.N. Kaul (2004) Impact (Knowledge – Attitude – Practice) of staff training in Haryana Community Forestry Project

The study was to assess the impact of training provided to management and implementation staff of the project. The impact was demonstrated in terms of Knowledge, Attitude and Practice for a sample of randomly selected staff drawn from various categories who had attended the full training course.

Four criteria, namely KNOWLEDGE, ATTITUDE, PRACTICE and PARTICIPATION were used for this impact assessment, which was simple, direct, and flexible in the context of age of the officials. The study was conducted on a sample of 44 Forest Guards, 6 Foresters, all the 17 Sub-Divisional Officers, eight Divisional Officers and three Conservators of Forests, besides two untrained (in JFM) Foresters to serve as control and two villages/VRMCs for obtaining a feedback on the work of sample officials.

Training assessment of the respondents was done through their presentations in the context of knowledge gained, attitudinal changes that have come about in them, how much of classroom training was being practised by them in the field, and their personal participation in the programme. This was followed by interviewing each official in detail through structured formats.

The respondents were also observed in the field while they were undertaking various activities of the project to get a feedback about their knowledge, attitude and practice. In the process two randomly selected villages were visited to get a feedback from their VRMCs/villagers regarding the work done in the villages and the work of the respondents who had worked there. Discussions were held with two officials of HFD (Control Officials), who were not trained in JFM mainly to know the difference between trained and untrained officials. With a view to assign a rank to respondents, they were graded from 1 to 10.

Most of the Forest Guards (25 or 56.81%) were rated as average as far as their knowledge is concerned though 22.7% are good and 18.2% (8) are very good. There is only one Forest Guard who is below average. The position is somewhat similar with regard to attitudinal changes that may have come about in respondents – they have been sensitised, motivated and oriented towards participatory management. The results for Practice are almost the same as for knowledge in that a large proportion of trainees practice what they have learnt in the training courses to elicit peoples' cooperation and have a participatory approach. With regard to Participation the respondents involve themselves/participate personally in various activities/programmes of HCFP.

With regard to VRMCs, eight respondents (18.17%) were very good to see that VRMCs function and become self reliant with financial stability. This was followed by 13 Forest Guards (29.54%) as good. The bulk of Forest Guards (22 or 50%) were average in their work while one (2.27%) was below average.

Assigning an overall grade to Forest Guards based on total work: eight (18.17%) were very good, 13 (29.54%) as good and bulk of respondents (50.0%) as average, while one (2.27%), was below average.

Among the Foresters, two trainees each, (33.33%), were good and below average as far as the extent of knowledge acquired about concept, process and programme of participatory management. One respondent, each, were average and very good. As far attitudinal changes that have come about in the respondents, they have been sensitised, motivated and oriented towards participatory management. Of the six respondents three (50%) are below average, while two (33.33%) are good and one (16.66%) is very good.

The results of Practice and Participation are somewhat similar to attitude. Three respondents (50%) are below average, two (33.33%) good and one (16.66%) very good. The training has affected the respondents' personally in that they participate in the various activities of the programme.

The overall grade assigned to Foresters was: Two persons each, (33.33%) were rated as good and below average, and one each, (16.66%) rated as very good and average.

As regards VRMC two respondents each (33.33%) were good and average while one was very good to see that the VRMC could be self reliant with financial stability. One of the respondents (16.66%) was below average.

Most of the respondents (62.50%) among the Sub-Divisional Officers were good to very good about the concept, process and programme of participatory management. Nine officers (56.25%) were rated as good, one officer as very good and five (31.25%) as average. There was only one officer (6.25%) below average. The results were almost similar with regard to knowledge, attitude, practice and participation among the respondents.

Ten officers were rated good to very good in their VRMC work to see that the VRMC functions and becomes self reliant with financial stability, though five of them were average (31.25%). One officer (8.25%) was below average.

There are substantial differences, between those who have been trained and those who have not been. The study indicates that the participatory approach followed by the project is being integrated to a large extent in the staff structure of the Forest Department.

During the interview, the respondents (mostly Foresters and Forest Guards) have made certain suggestions, which mainly pertain to organising of refresher courses, guidance and financial help to VRMCs. The project needs to look into these suggestions as some of these are very pertinent.

22. TA Team (2005) Capability assessment of Village Resource Management Committees

Capability assessment of Village Resource Management Committees (VRMCs) was initiated in 2001 in a sample of 26 villages. The same set of sample villages was reassessed in 2003 and 2004. Considering the usefulness of the exercise, from 2003 onwards, assessments were carried out for all VRMCs that had completed at least one year of existence. In the current study, a total of 278 VRMCs were assessed.

The aim of the study was to objectively verify the project results of "improved capacities of village communities to manage community forestry activities". This was necessary to know whether there is evidence that the project is achieving its purpose of "developing a process for sustainable management of natural resources" with a view to attaining the goal of improved natural environment.

The second objective was to sensitise all the stakeholders including the members of the VRMC Executive, the field staff and middle management about the importance of striving towards achieving the character of mature, democratic, people centred and autonomous resource management institutions at the grassroots level.

Nine broad areas were identified as reflecting the broad capability of VRMCs. These are:

- Capability to gather and appraise information;
- Organization capability;
- Conflict resolution capability;
- Planning capability;
- Capability to protect natural resources;
- Capability to Monitor plan implementation;
- Capability to access and mobilize financial resources;
- Capability to provide supplementary income to disadvantaged groups including women; and
- Capability to share knowledge and skill with the community.

For each of these capacity areas, sub-indicators were identified. If a VRMC had a positive characteristic to each of these sub-indicators, it was assessed to be having capability with respect to that indicator. As all the indicators did not have equal importance, a system of weighting was built in. Each broad indicator was assigned a maximum possible score of 10. The Overall Capacity Index **(OCI)** of each VRMC was calculated as the average of scores for each indicator. Based on the scores obtained by a VRMC, they were rated as good (overall score of >7-10) moderate (>4-7) or weak (0-4).

The broad findings of the study with regard to capacity indicators mentioned above are as follows:

- The OCI score obtained by each of the VRMCs enables us to compare the differing capacity levels of individual VRMCs. Similarly, the average score of all VRMCs put together gives us a measure of project-wide OCI. For all VRMCs taken together, the average OCI in January 2005 was 6.2 out of a possible score of 10. The minimum score obtained by a VRMC was 0.5, the maximum 9.2 and the median 6.4.

- Conflict resolution capacity is the strongest with an average score of 8.8 out of 10. The capabilities for community resource monitoring and natural resource restoration/rehabilitation have a fairly high score of 7.1 each. *However, the capability for financial resource mobilization is very weak, having a score of only 2.5. Obviously, this area*

needs improvement if the VRMCs are to sustain as autonomous village level resource management institutions.

- Of the 278 VRMCs studied, 83 (29.8%) were assessed as good, 181 (65.1%) as moderate and 14 (5.1%) as weak. Areas of strength are conflict resolution, accessing village level information, community resource monitoring, resource protection and rehabilitation, and to a lesser extent organizational capability and benefiting the disadvantaged including women. The weak areas continue to be financial resource mobilization and skills and information sharing, with village resource planning capabilities in between.

- With regard to capacity to promote employment and income generating activities for the disadvantaged groups, nearly 42% of the VRMCs in batches 1-4 have good capability on this aspect with 44% having moderate capability. The main weaknesses, however, lies in the areas of promotion of SHGs and organizing training and income generation activities for women. The weaknesses on these two aspects are not wholly attributable to the VRMCs but to the restriction of inputs to selected villages only in the areas of women development and poverty alleviation. Even in those villages where HCFP promoted SHGs function under the nurturing support of NGOs, the VRMCs are not actively involved, except with a few exceptions as seen in the case studies, in providing the required linkages for income generation activities. VRMCs and SHGs function as separate institutions without much interchange of ideas.

What could perhaps be done is to sensitize project staff as well as VRMCs to the avenues available under other government programmes to promote SHGs in the villages where project inputs are not available for the component. The NGOs contracted for SHG formation and nurturing can also be encouraged to promote at least one SHG in the other project villages not covered under the component.

23. Berry van Gelder (2005) Village Benefit Study

The main purpose of the Village Benefit Study was to integrate the different results of several studies on the impact of the project in the Villages, making an analysis of the situation and suggesting as to how shortcomings can be overcome to have the desired levels of implementation. The study also addresses as to whether, (i) the present exit strategy is realistic, (ii) the project has an impact on village lands (both common and private), (iii) do VRMCs make a difference for the villagers and common resources, (iv) do the SHGs have an impact in the villages, (v) the approach developed by the project staff is sustainable, (vi) can the VRMCs continue after the project comes to a close, (vii) is there an impact of the project on Forest Department staff and the organisation, and (viii) does the experience and training of project staff become durable and finds its way into the regular activities of the Department.

The study was conducted in 35 villages based on their level of cooperation with the project activities. Some of the preliminary findings are as follows.

- The present exit strategy is realistic and is possible to be achieved in the given time left for the project.

- The project has made a very good impact in project villages (common and private lands). Tree planting on private lands has increased up to five times in Ambala and about six times in Hisar.

- The VRMC concept has an impact on the villagers and common resources in villages. VRMC rules have regulated the use of the commons and brought a flow of different tree and shrub related products to the villages.

- The Sustainability of approaches developed will strongly depend on what would happen in the next two years. Tree planting would come to a hold and if all the time available could be utilised to develop the VRMCs further and integrate the community forestry approaches into the Department, sustainability will be achieved.

- In some villages the VRMC functions very well and operates like a development organization. Assisting such VRMCs to find new resources for further development would be a challenge to the project in the coming years.

- SHGs based on income generating activities have brought changes in the villages. Women generated income, initiated social activities and were able to communicate well than before with the male villagers. The concept of income generation has brought much self-esteem to the groups.

- The project has spent considerable effort and time in training staff to new approaches and methodologies in community forestry. All these efforts will have an impact on the working of the Forest Department.

- Within the next two years it will be important for the project to develop a strategy how all these experiences could be integrated, in a very natural way, in day to day operations of the Forest Department.

The study has made the following recommendations:

- The Village Benefit Study should be repeated during the coming years to monitor developments, and the survey forms should be developed further. Particularly more comparison between different economic groups is essential.

- Markets for tree and shrub products from project plantations should be further developed. Initiatives like outdoor furniture making should be explored.

- The present ongoing training of Divisional Forest Officers and Sub Divisional Officers on knowledge, skill and attitude changes should include Foresters and Forest Guards as well.

- Forest Department staff at all levels should be exposed to similar forestry or development activities, as the HCFP, elsewhere for which study tours should be organized by the project immediately.

- Special training course should be developed for VRMCs on financial resource mobilization by the VRMCs in the villages.

- Different VRMCs should meet regularly to exchange experience and stimulate developments. HCFP should also organise inter-division visits of VRMCs.

- A project strategy needs to be developed to integrate the experiences of HCFP into the regular activities of the Forest Department.

- The manuals developed in the beginning of the project need to be reviewed before their adoption by the Forest Department.

- Information has been collected from each village which can be used as baseline data for the village. A decision has to be taken by the project to use this data for further analysis.

25. Varsha Mehta (2006) Self-Help Group Capability Assessment Study

Formation of SHGs was started from the year 2000, as a strategy for enhancing women's participation in community decision-making and as a vehicle for their social and economic empowerment. A total of 158 SHGs were formed in a phased manner between the year 2000 and the current study, of which 142 are included in this study.

The project has been regularly conducting capability assessments of the people's institutions formed through project support, including the Village Resource Management Committees and Self-Help Groups, using participatory principles. The first SHG capability assessment was carried out on a sample of 40 SHGs in the first quarter of 2004. The present study is the second in the series of such assessments. The objectives of the current assessment are two-fold: firstly, to do a comparative assessment *vis-à-vis* the previous results and gain an understanding of the areas in which groups are growing and/or weakening; secondly, to help group members analyse their own group on a set of objective parameters and enable them to prepare an action plan for the future. The results of the study and the recommendations emerging from it would be used to formulate a plan for strengthening SHGs in future.

The project has made a significant contribution to women's empowerment through formation of women's Self-Help Groups and interventions for empowerment. Many groups achieved remarkable success and new women leaders have emerged. There is a great sense of pride and ownership among the groups that have reaped benefits from coming together and working collectively. The benefits obtained from income augmentation activities, in particular, have been quite spectacular in some groups, though it has not been possible to replicate this success everywhere.

Overall, 20% of the groups have performed very well and may be categorised as "good", while about the same percentage are "weak"; the remaining groups, (about 60%), are average performers. Over the years, the groups do not show any particular pattern of growth, and there is only a marginal difference between the performance of groups in different batches. Across Forest Divisions, there are more groups performing well in Ambala and Kurukshetra Divisions as compared with Hisar, Bhiwani and Jatusana.

About a third of the total groups formed have stabilized, and are performing routine activities, viz. meetings, savings and inter-lending, on a regular basis, without any problems. These groups are the ones that are most likely to sustain and even grow in the following years. A large majority of groups are able to hold meetings and carry with their routine activities without external assistance, but a significant proportion still require assistance with record keeping. There is need to review the type of records maintained, simplify procedures, conduct on-the-job training for group members and link workers, and re-establish the norms for good records and book-keeping. It is suggested that wherever and to the extent possible, the responsibility for maintaining records and accounts should be transferred from the NGO/Link Workers to the group. When this is unavoidable, both the Link Workers in the village – male and female – should be allocated responsibility for helping the groups in these matters.

Funds/financial management are one of the most important skills that the groups need to learn, as this is critical to their sustenance in the long run. The processes for financial transactions are usually laid out in the group's set of rules and regulations, and members are expected to follow them. However, some deviations from these were observed in the groups studied (e.g., late repayment of loan, deposition of cash in bank, etc.). It is felt that the norms need to be reiterated, along with providing members the logic behind them, of the possible benefits that accrue from such discipline. All members should have access to the group's books of account and be informed of all financial transactions during the groups meetings.

Formation of SHGs and their functioning provides the members and the facilitating agency with several opportunities for enhancing women's skills and their social, economic and political empowerment. It appears that most of these opportunities have remained untapped in project-promoted SHGs across all Forest Divisions. There are skills that can be developed through simple tasks such as going to the bank or the post-office, which provide scope for interaction with outsiders, increase mobility and build women's confidence, but these have not been properly

used. More than accomplishing the task; it is the act of doing it. This needs change. Certain suggestions have been made in the report, in this regard, because apart from savings and credit, the purpose of the groups is to strengthen women's social support systems and this can only happen if the groups become strong and resilient.

Savings and inter-lending functions are being routinely performed in all groups, some exceptions not-with-standing. It is the repayment of loans which is a problem area and must be dealt with immediately by the project. It is suggested that all groups where recovery is below 90% should receive immediate attention and intervention from the project and/or the facilitating agency on a priority basis, for the disintegration of groups is not only detrimental to the concerned group, but also sets a bad precedent in the area – one which others may then fall prey to.

Some groups have started "reaching out" – they have established linkages with institutions within and outside the village to access information, demand better services or support, take up social issues and campaign against social evils such as alcoholism and domestic violence. Although there is higher awareness about social and women's health issues resulting from group activities, members find themselves unable to go against established social and cultural norms. There is not sufficient momentum for groups to resist discriminatory, exploitative and prejudicial practices directed against women in society due to several factors. The situation can be changed by addressing these issues through the following means.

- Gender awareness and sensitization camps for men, and youth in particular, so that the challenge to end discriminatory gender practices does not remain a problem of women alone, but is treated as a societal aberration that needs corrective measures by both women and men;

- Renewed efforts at federating SHGs in areas where individual groups have stabilized and are able to participate in activities outside the village, and group strengthening activities in areas where SHGs are still weak and unable to take care of even routine activities;

- Encouraging formation of new groups – this will increase the proportional coverage in villages, with more women becoming aware of the concept of SHGs the purpose of group formation and be sensitized to gender issues.

With regard to micro-enterprises, the project should hire the services of a professional agency for identification of additional appropriate interventions that can be taken up by the groups for long-term monetary returns; this action study should be conducted in close collaboration with the facilitating partner – the NGOs with them playing an active role in framing the research questions and identifying the problems areas. This activity should focus only on those groups that are stable and regular in their functioning, and willing to undertake activities for income augmentation.

There is in general a lack of vision among SHGs regarding what they want to achieve and where they would like to go. Their involvement in the group appears to be restricted to contributing regularly to group savings and taking credit when needed. A long-term perspective for planning for sustainable and judicious use of available resources is lacking. A well-planned visioning exercise should be taken up with well-functioning groups, and this should be followed up with preparation of plans for achievement of goals.

Given the resources and time available with the project, efforts in the following years should be more targeted, focusing on areas and groups where the inputs are likely to result in positive change. For the other groups, decisions should be made on a case-by-case basis by the project field staff (or the DFO) in consultation with the facilitating NGO.

26. Joseph Viruthiyel, TA Team (2006) Village Benefit Study

The Haryana Community Forestry Project (HCFP) has undertaken a number of formal and informal process documentation and evaluation studies to draw lessons for its own planning as also for formulating future policies. All these studies were focused on specific stakeholder groups. The first comprehensive study for assessing the trends of change at village and household levels based on benchmarks already established, as well as obtaining a feedback from multiple stakeholders on project benefits, was undertaken in 2004-2005 in a sample of 35 project villages.

The present study is the second in the series of impact assessment, conducted in 2005-2006 in 40 project villages.

The study had two main components. The first was the comparison of information on selected benchmark indicators with the current situation, using the baseline survey and a repeat survey in the current year. The items of enquiry were the same in both the surveys. The second component constituted the perception of different stakeholder groups (VRMC members, SHG members, women not associated with SHGs, common land users and a sample of village households) on the performance of the project. The main findings of the study are as follows:

- The project strategy in promoting community forestry by involving people through micro-planning, promoting village institutions, training and awareness generation activities, is bearing fruit. It is hoped that the project goal of sustainable community forestry will become a reality by end of project. This trend is indicated by two facts. Firstly, there has been a six-fold increase in the number of trees per household. Further, the average number of trees per ha has increased from about 20 at baseline to about 61 currently. The increase in tree density per ha of marginal and small farms has been more dramatic than for larger sized farms.

  Secondly, though *Eucalyptus* and poplar continue to be the most preferred tree species in Ambala and Jand in Hisar Circle, a number of other species (Amla*, Ailanthus,* Shisham etc*),* have been planted in good numbers. Fruit trees are in high demand for farm forestry.

- One of the major benefits of tree planting has been the increased availability of fuelwood. Though cow dung continues to be the major cooking fuel, use of fuelwood from private as well as common land has increased substantially, most probably due to availability of biomass from HCFP supported plantations. There has been a dramatic increase in landless households' access to fuelwood from common land – up from 1.6% of households to 74%. The wood from common lands may be a by-product of pruning and thinning of tree crops.

- The results of community organisation and awareness building activities are also reflected in the increased willingness to plant trees on private land, indicating the scope for farm forestry as an important strategy for environmental improvement in Haryana. The most dramatic increase has been the demand for fruit trees, followed by timber and fuelwood.

- The project has laid considerable emphasis on training and capacity building of VRMC and SHG office bearers and members. *This is reflected also in the finding that the majority of both VRMC and SHG members have received training there being not much gender variations in this regard.*

- More than 50% of common land users and a little over ¼ of community members have benefited from wages from plantation work. Poor people in the communities, who take up tree plantings on commons, stand to benefit from this alternative land use. This could be used as a motivating factor for future community forestry projects.

- Common land plantations and *Chetna Kendras* have emerged as the project activities implemented through the agency of VRMCs, which have been assessed as the most beneficial by different stakeholder groups (SHG women, non-SHG women and common land users).

- Significant percentage of community members are of the opinion that the VRMC and through it the HCFP have successfully tackled grazing problem (33%), fodder problem (43%), land

problem (presumably encroachment on common land – 36%), water problem (25% - mainly in Hisar where *Johads* have been rehabilitated) and settling of village disputes (22%). These are important measures of success and sustainability.

The general conclusions of the study are as given below:

- HCFP activities have gained high visibility in the project villages; villagers are beginning to see the benefits of afforestation through community mobilization;
- VRMCs have gained general acceptance and respect;
- Tree planting is becoming a desired element of village life;
- HCFP plantation models are acceptable;
- Farm Forestry is becoming popular;
- Village Woodlots and Tree Groves are enriching CPRs;
- People are not yet fully sufficient in products like timber, firewood and fodder, particularly in the context of population pressure.

The general concerns that still remain in the context of a suitable exit strategy (as evident from the current as well as previous studies) are:

- VRMCs insufficient interaction with stakeholder groups;
- Need for more transparency and better interaction with the village community;
- Need for a strategy to promote the emergence of VRMCs as an autonomous institution able to respond to village needs, plan and implement development projects and execute projects in convergence with the existing development machinery;
- Conflicts arising in the context of changing power structure in the village;
- Need for a re-look at the powers and functions of VRMCs in the context of devolution of development responsibility and powers to village *Panchayats*;
- Need for refresher training in the context of the exit strategy;
- Vesting some additional responsibilities to village communities prior to project exit;
- Need for intensification of a massive information, education and communication drive in the project and adjacent villages to sensitize the entire village community about the gains and lessons of the project and their responsibility for maintenance of plantations and assets created under the project. A professional agency may be assigned this task.

Another Village Benefit Study should be carried out soon in a more coordinated manner, with refined and focused tools and well-trained research staff.

27. Joseph Viruthiyel, TA Team (2007) Village Benefit Study 2007

Studies were initiated on the extent of benefits that have accrued through Haryana Community Forestry Project to various stakeholder groups in the villages including the community based institutions like Village Resource Management Committees **(VRMCs)**, women organised into Self-Help Groups **(SHGs)**, village community and people dependent on common lands. This village benefit study is the third in the series, the other two having been conducted in 2005 and 2006.

The present study was carried out in 40 villages distributed equally among the five forestry divisions representing 338 villages in 11 districts targeted under the project. The village communities (particularly the most disadvantaged sections, namely women, scheduled castes and landless) during the past 8 years of working have derived considerable benefits from natural resources in the shape of fuel, fodder, water for agricultural and dairy activities. Various case studies have been cited to support this view. This sends a positive message for future implementation of forestry projects based on a participatory approach.

Broadly the conclusions of the study are that both the baseline and current surveys show a significant relationship between land ownership on the one hand and poverty and social groups (caste) on the other. Three fourths of the scheduled castes and nearly 30% of other backward classes are landless. The village community feels that main contributions of the project and the VRMCs have been in reducing fodder problems (55%), reducing encroachments on common lands (39%), solving grazing problems (33%), tackling water problems (30%) and reduction of village disputes (21%). A major proportion of all stakeholder groups feel that they have benefited in the past and will benefit in the future from forestry activities on the commons.

One of the major findings of the study was that tree ownership index has increased more than five times during the project period, indicating the highly beneficial impact of afforestation intervention. Overall tree ownership index increased from 23 trees per household (baseline) to 128 trees currently, representing an increase of 457%, with the highest rate of increase in Hisar (643%) and all divisions reporting very good improvement. Tree adoption rate increased across all economic groups, even the landless planting trees at whatever space available around their courtyards. Among social categories, the tree adoption rate has been highest (13 times) among scheduled castes (1225% increase in tree ownership). This trend is in conformity with the findings of the two earlier studies.

Though there is a marginal increase in the proportion of households (0.4% at the baseline to 5.2% currently) sufficient in timber requirements (the increase being mostly in Bhiwani, Hisar and Kurukshetra), rural communities in Haryana continue to be insufficient in timber to various degrees. All except large and medium farmers have experienced this decline. There is a rising demand for timber due to demographic pressure and increased standard of living. The species mix under different models of the project has a lower share of timber species, and the timber trees have not yet reached their rotation age. The project has, therefore, not much effect on timber availability at present.

There has been some positive improvement in sufficiency of fuelwood and fodder. The percentage of households with sufficiency in fuelwood increased from 0.5% (baseline) to 13.5% currently. Fodder sufficiency of 75% or more increased from 4% of households (baseline) to 14% currently. This is directly attributed to the increased off-take from project plantations on community and private lands. However, the proportion of households which are fully insufficient in firewood and fodder has also increased, this being more so in case of the landless poor. The worst insufficiency in the matter of fodder has emerged in Ambala and Kurukshetra. This deficiency is not even matched by any increased willingness to plant fodder trees.

Chronic insufficiency in fruit trees continues to be a problem. Except for a slight increase in the willingness of people to plant fruit trees on their own land, there is a decline in the willingness to plant trees of timber, fodder or fuelwood on private lands. However, nearly three fourths of the rural households in project villages are willing to plant trees in the future also, in spite of much private land already brought under plantation. This willingness to plant trees may be used by the Forest Department for its promotional activities in future. The preference pattern is not matched by the felt insufficiency for different categories of trees – timber, fuel, fodder or fruits – but is

presumably governed by the economic outcome from tree planting, with fruit trees occupying the place of prominence due to their perceivably higher economic and nutritional value.

Energy needs in Haryana have gone up substantially and people now use all types of fuel more than before, with dependence on fuelwood having increased substantially. The increase in access to fuelwood from private land was highest among large farmers, 79 percentage points (p.p.), while the landless witnessed a decrease of 5 p.p., showing that availability of fuelwood would become more problematic for landless in the absence of community initiatives to develop tree cover on common lands. While all categories of stakeholders have benefited by increased availability of fuelwood from common lands, the landless and marginal farmers have benefited the most (increase of 67 p.p. and 38 p.p. respectively on baseline). Dependence on purchased fuelwood has decreased for all economic groups except for the landless, for which it has increased from 5% to 12% at present. This points to the need for more public investment in community afforestation.

Besides increased fuelwood consumption there has been an increase in the use of cow dung, (50 p.p. increase in general and 71 p.p. among large farmers), agricultural waste (increase of 10 p.p. in general and 42 p.p. among large farmers) and LPG; the proportion of households using LPG having gone up three times, mostly in Ambala Division where people can afford it.

The project has provided energy-efficient smokeless cooking stoves *(chulhas)* in 153 project villages with an average of 50 *chulhas* installed in each village. Smokeless *chulhas* are also available through other schemes. The information collected shows that almost half of stakeholder women in project villages use an improved *chulha.* As proper use of these cooking stoves reduces fuel consumption by 50% they are quite important in coping with an evermore growing fuel shortage. The health benefits of a smokeless *chulha* have also been well documented.

There was a slight increase (4 p.p.) in the households owning livestock, the increase being high for cows (+14.5 p.p.) followed by buffaloes (+8.4 p.p.). Cow, buffalo and goat ownership has increased in all economic groups with 26% of landless households owning cows now as compared to 12% at the baseline. The average herd size per household has increased for cows (from one to two), sheep (16 to 36) and goats (3 to 11). Improved fodder availability and enhanced price for animal products could be the reasons for this increase besides increase in purchasing power. Livestock ownership has increased in all groups, especially for the landless. However, this increased livestock ownership puts pressure on fodder availability. It would be advisable to work with the Animal Husbandry Department to develop village pastures for the benefit of the community, including the landless.

A few indicators were used to measure the vibrancy of village level institutions; attendance at village meetings being an important one, which not only demonstrates the interest of the members in their organisation, but also elucidates the organisational sustainability of community based institutions. Generally 55% of VRMC members, 84% of SHG members and 32% of community members reported to be regular in attending village level meetings, with Ambala and Kurukshetra recording the highest attendance. Attendance percentage was poor in respect of VRMCs in Jatusana and Hisar, with respect to SHGs in Hisar and with community members in Bhiwani and Hisar. This is a matter of concern.

SHG members fared better (55%) in interacting with other groups or community institutions than VRMCs. VRMC members had little belief in their problem solving function, whereas the community members, common land users and women were more positive about the problem solving functions of VRMCs. The perception that the VRMC had created problems was also prevalent to some extent among all stakeholder groups, especially in Hisar. This is an indicator of factionalism. The perception that VRMC has supported their interests is more prevalent among common land users than in other stakeholder groups, the most beneficial activity as assessed by common land users being the creation of village woodlots. The general impression is that VRMCs still have to improve their viability and usefulness to the community.

Women and common land users participated in activities on the commons to the extent of one third (SHGs and common land users) to nearly half (non-SHG women). One third of community members got the benefit of wages from commons activities, whereas nearly three fourths of the common land users, most of them landless, contributed labour for wages.

Perugini, Lucia and Ferruzzi, Luca (2006) Assessing Opportunities and Constraints of Implementing CDM Activities under the Kyoto Protocol in the Framework of HCFP

Over the years, the State of Haryana has experienced major forms of natural resource depletion and environmental degradation including climate change. This environmental impact represents a substantial loss to the State and calls for a major intervention by the Government, the private sector, Non-Government Organisations, and the local communities.

It is now strongly felt that the benefits to be realized from the State's natural resources and the environment must be maximized for the present and the future generations. To address this issue, the State Government is ensuring that appropriate interventions are made in the development planning process, both at the micro- as well as at macro-levels.

As a result, the Haryana Forest Department, with financial assistance from the European Union is currently implementing the Haryana Community Forestry Project in 337 villages of 37 community Blocks in 11 districts and five forest divisions with an estimated population of 700,000 (2001 census). The overall objective of the project is capacity building of the local communities to improve the natural environment and to preserve land fertility by sustainable management of natural resources through activities undertaken in participatory manner.

There was need for a comprehensive analysis of project activities to assess chances and constraints of accessing the Kyoto Protocol **(KP)** related financing opportunities in terms of Clean Development Mechanism **(CDM)**. Accordingly a consultancy on "Assessing opportunities and constraints of implementing CDM activities under the Kyoto Protocol in the framework of HCFP" was commissioned to assess opportunities of promoting CDM activities. The mission was conducted from September 13, 2006 to November 13, 2006.

The mission was to evaluate the possibilities of getting Certified Emission Reduction **(CER)** on the already started project activities and to identify what needs to be done to qualify future project activities for CER. Accordingly three levels of activities were to be carried out by the mission, namely, (i) to review the Kyoto Protocol implementation in India; (ii) to review the activities of the HCFP in terms of opportunities with the Kyoto Protocol's CDM and receiving CERs; and (iii) setting the procedure that needs to be adopted by HCFP to have the project activity qualify under CDM to receive CERs.

Clean Development Mechanism is an arrangement under the KP allowing industrialized countries (Annex 1 countries) with greenhouse gas **(GHG)** reduction commitment to implement a project that reduces greenhouse gas emissions or, subject to specific rules, removes greenhouse gases by carbon sequestration in the territory of a developing country (non-Annex 1 countries).

CDM has been defined in the Article 12 of the Kyoto Protocol to perform a threefold function:

- Assist non-Annex 1 countries in achieving sustainable development;
- Contribute to all, the ultimate goal of the convention, i.e. stabilization of GHG concentrations in the atmosphere;
- Help Annex 1 countries comply with their emission reduction commitments at a lower cost.

CDM projects must result in real and measurable climate change benefits and should be additional to anything that would occur in the absence of the project activity.

To establish additionality, project emissions must be compared to the emissions of a reasonable reference case, identified as the baseline. Project participants complying with approved methodologies will establish the baseline on a project specific basis.

The CDM is expected to generate investment in developing countries, especially from the private sector, to enhance the transfer of environmentally friendly technologies and thus promote their sustainable development.

Such impacts are to be additional to the finance and technology transfer commitments of Annex 1 countries under the Convention and the Kyoto Protocol. Public funding for the CDM must not result in a diversion of official development assistance.

All projects that satisfy the additionality and sustainable development criteria are eligible under CDM. Additionality requirements refer to both the project activities as well as to financial additionality, as follows.

- ***Additionality of project activities:*** The project should lead to real, measurable and long-term GHG mitigation and should be additional to anything that would occur in the absence of the project activities. In order to establish this additionality, the project emissions should be compared to emissions of a reasonable reference case, identified as the baseline.

  The baseline for a proposed project activity under CDM is defined as the scenario that reasonably represents the sum of changes in carbon stocks in carbon pools within the project boundary (in case of afforestation and reforestation projects) or anthropogenic emissions by sources of greenhouse (in case of energy projects) that would have occurred in the absence of the proposed project activity.

- ***Financial additionality:*** If a CDM project is financed through public funding from Annexure 1 countries, the project will have to demonstrate that the funds do not result in the diversion of official development assistance.

  No positive list of project types has been made for the normal CDM. Limitations have, however, been set on the following projects:

Forestry: Sink projects refer to afforestation and reforestation only, with Annex 1 countries allowed to add carbon credits generated from sink projects to their assigned amounts up to 1% of their baseline emissions for the first commitment period.

Nuclear Energy: Annex 1 countries have to refrain from using carbon credits generated through nuclear energy to meet their targets.

The activities under HCFP fall under land use, land use change and forestry type of CDM projects.

Eligibility of past project achievements (plantation models and ancillary activities such as vermi-composting, improved stoves and crematoria) was analysed according to financial and technical additionality criteria as well as specific potentials for carbon sequestration/emission reduction under CDM modalities and procedures.

These procedures clearly specify that activities financed by funds from official development assistance (which were available otherwise in the absence of CDM), are not eligible as they do not respect the financial additionality criterion. In fact the present sources of funding (European Union and Government of Haryana) are to be considered as being official development assistance funds and as such not eligible.

Project initiated activities were further evaluated in order to assess their suitability as future potential CDM projects, which would take advantage of HCFP-developed capacities and know-how and possibly benefit from an initial HCFP financial support in their preparation phase.

Within the identified options two different types of sectoral scopes under CDM can be identified: Afforestation/Reforestation and Emission Reduction through renewable energy. The latter includes plantations for the production of bio-fuel with oil producing perennial crops (i.e. *Jatropha*), which is included in the emission reduction activities under CDM, while the former refers to plantations for biomass production, which is included in the carbon sequestration activities.

In order to analyse costs and preliminary technical and administrative implications, the consultants have based their considerations on modules of 1,000 ha each, examined at the

identification level, leaving to HCFP the opportunity to scale up and introduce relevant modifications to such modules after proper reviewing and local consultation.

Afforestation and reforestation activities would aim at increasing, through promoting suitable agro-forestry models, the productivity and viability of present unsustainable agricultural utilization of marginal lands in the semi-arid environment of western Haryana bordering the *Thar* Desert (Hisar and Bhiwani Divisions) with multipurpose (mainly) indigenous forest species adapted to local dry conditions. This would be able to furnish extra income opportunities, stabilise sandy soils and restore fertility, while increasing labour opportunities, thus benefiting the local community. This project activity would sequester carbon for an estimated 146,811 tones of CO_2 equivalent ($_tCO_2e$) in a twenty-year period.

The Emission Reduction project activity instead deals with the production and utilization of bio-fuel as a self-standing activity on some portions of marginal agricultural lands of Hisar and Bhiwani Divisions. The project would seek mitigation of greenhouse gas emissions by substituting the presently used petro-diesel for running farm engines and vehicles with bio-diesel and Straight Vegetable Oil **(SVO)** produced by *Jatropha curcas* plantations. It is estimated that emission reduction would be to the tune of 6784.3 $_tCO_2$ in about 10 years.

For these two different options, technical and economical features have been analysed in some detail, with tentative Project Idea Notes **(PIN)** produced. Once reviewed and finalized by HCFP, amended versions could be submitted to potential investors/carbon buyers.

By comparing the two different options, opportunity considerations may be made by HCFP on preferred strategies to be adopted.

The “Forestry” project is generally characterized by lower investment costs, longer rotation periods, and high returns on investments at the end of the crediting period, with Internal Rate of Revenue **(IRR)** in the range of 27% (including CER revenues) and 23% (excluding CERs). Positive earning would start from Year 5, the year in which initial CER installment would accrue to the project.

As opposed, the “Energy” project would have consistent investment costs mainly due to its technological component (expenses related to oil expellers and bio-diesel processing units), shorter periods for achieving positive financial results (positive earnings from Year 3) and IRR of 24% irrespective of the presence of CDM-related costs and revenues, which represent a minor proportion of the project budget, possibly not substantially altering the overall financial set-up.

It is finally recommended that the future steps to be taken by HCFP to get involved in CDM projects include reaching consensus on a project idea, negotiations with local stakeholders, identification of project area, PIN review, looking for financing opportunities, preparation of required project documentation, submission to Indian CDM National Authority for review and lastly to CDM Executive Board for registration.

Bagnall-Oakeley, L.H. (2006) An Expert Mission to Support Downstream Activities of Water Harvesting Dams under Haryana Community Forestry Project - Final Report

The Haryana Community Forestry Project (HCFP) has constructed 17 water harvesting earth fill dams in selected micro-watersheds in Ambala and Yamunanagar Forest Divisions for agricultural development. These dams, apart from irrigation, help in eliciting cooperation of the people in rehabilitating degraded forest catchments. For some of the smaller communities the dams provide water all the year round, significantly changing the farmer's livelihood in terms of the crops that can be cultivated and the number of domestic animals that can be kept. Access to water has an enormous impact, opening up many crop and livestock production opportunities.

An agricultural consultancy to support downstream activities of water harvesting dams, was commissioned by HCFP in 2006 for a period of six months (in two parts from February to May 2006 and August to November 2006) in order to interact with all the concerned farmers individually and through their VRMCs to assess their response to the opportunities created by irrigation; the problems and constraints faced and to identify the progressive farmers in each village who could take a lead for others to follow. These studies were taken up irrespective of gender, wealth, caste, landed or landless and with good or poor access to resources and information.

The consultancy was undertaken with the main objective of diversifying agriculture production base of the 17 dam communities, in addition to strengthening the VRMCs and SHGs who require support in the development of agriculture activities. The consultancy was operated through a participatory and consultative approach to all problems and issues from both genders regardless of wealth and caste. Attention was focused on the poorer strata of the communities.

A start has been made in better agriculture development and diversifying the same in 17 dam communities. Initiatives have been developed in better management of available irrigation water. Though vermi-compost production units have been established, some units are not producing any vermi-compost. Some viable crops, profitable alternatives to wheat cultivation have been identified through crop demonstration. Markets have been explored and so have the costs of production and profit and loss associated. Information on different technologies, agro-chemical use and on organic agriculture production have been disseminated. While a start has been made in all these activities, consolidation, follow-up action and further development is required. Consolidation activities will have long term impacts for 17 dam communities and the different strata of people involved. In addition there will be an impact for the project and the State Government.

Under the auspices of HCFP two groups have been established: the VRMCs and the SHGs. VRMC is an elected body, having the mandate to sell, administer and manage irrigation water which is administered through a water contractor or a sub-contractor, who collects water fees on behalf of the VRMC.

SHGs are primarily vehicles for organising women. These groups have taken a lead in developing income-generating activities and have established saving and lending mechanisms. Gaining access to training through the SHGs is a strong incentive for its membership.

Both these village based institutions are in reality affinity groups. Many of these have a limited capacity. The project has undertaken a capacity strengthening programme for them. A large number of these institutions now need to use their training to develop further capacity, confidence and practical experience.

An assessment of problems and constraints has been made through SWOT analysis on irrigated farming through focus group discussions with the farmers. A report has already been separately submitted for the same. The identified problems and constraints have been monitored, and new problems, such as farmer reluctance to undertaking fresh water fishery initiative, have been explored which are mainly due to procedural problems. The payment of vermi-compost subsidy is also beset with similar difficulties (Panchkula District).

The key/lead/master farmers have been identified. There are 29 key farmers in the village communities with whom the project has worked in developing their agriculture. These have been tabulated, showing the particular activity the farmer or the farmer group has been engaged in. The farmers listed are considered lead farmers and they represent useful points of contact with different communities.

Briefly the following items have been addressed:

- Developing a system for calculating and management of irrigation water.

- Increasing the number of vermi-compost production units in the project area.

- Disseminating information about alternatives to sowing paddy in *Kharif* season, wheat in the *Rabi* season and leaving the fields fallow in summer.

- Exploring market opportunities for cultivating crops out of season (promoting horticultural crops and through discussion about new crops). All of these crops have known markets, though linkages to market is a problem as is product differentiation.

- Expanding the farmers knowledge and recognition that crops cultivated have costs, labour inputs and revenue. To date farmers have focused on the revenue. The gross margin analysis has focused on costs and revenue, which have been discussed with farmers. Consequently, some farmers have started to become more businesslike in their approach to crop production.

- Recognizing that agro-chemicals are associated with one production or farming system, but there are more sustainable and potentially more lucrative alternatives like organic agriculture.

28. Kaur, Kiran Preet (2007) Correlates of Effectiveness: A Study of Village Resource Management Committees in Haryana Community Forestry Project

Participatory Forest Management has caused the formation of village based institutions like Village Resource Management Committees (VRMCs) and Self-Help Groups (SHGs) for sustainable management of natural resources. VRMCs were formed by the Haryana Community Forestry Project to strengthen the process of community participation by enhancing the stake of the village community in various activities of project planning, implementation, monitoring and management for sustainable development of villages in the State. This study aimed at examining the extent of involvement, achievement motivation and effectiveness of the VRMCs, besides evaluation of training undertaken in terms of its impact on stimulatory and participatory aspects.

The study had the following objectives:

i) To examine the extent of involvement and achievement motivation among VRMC members;

ii) To ascertain the impact of training in terms of its stimulatory and participatory dimensions;

iii) To assess the effectiveness of VRMCs with special focus on their goals and achievements;

iv) To examine the interrelationship of VRMC effectiveness, VRMC members' achievement motivation and involvement, and training impact.

The study was carried out in all the five forestry divisions of the project in 58 villages (VRMCs). The villages were selected on the basis of overall capacity of VRMCs with fair representation of all areas/divisions and batches (year of VRMC formation). The study examined the effectiveness of 58 VRMCs and included 534 respondents, who were interviewed. The training aspect of the VRMCs was examined in detail. Construction of Likert scales relating to achievement motivation, involvement and training was undertaken.

The process of formation of VRMCs was initiated by HCFP since 1999-2000; about 50 VRMCs being added every year, with a total of around 330 at present. Six batches of VRMCs have been formed. Each VRMC includes residents of a village and gives representation to all sections of the community, with roughly one-third women, one-third Scheduled Castes and landless households in the executive body. The VRMC was constituted in a general village meeting (*Gram Sabha*), which elected its executive body with four office bearers and other executive members. The executive body consists of 9-15 members and is a sub-committee of the village *Panchayat.*

The results of the study indicated that more than 78% of VRMC members had either medium or high level of involvement with their VRMCs. Their age, sex, religion, caste, etc. had little to do with involvement level, but older people were relatively more involved. Sikhs and Hindus showed almost the same level of involvement, though Muslims were less involved. Scheduled Castes and Backward Classes have shown more or less the same degree of involvement as the upper castes (*Brahmins* and *Jats*). There was practically no difference between educated and illiterate people in their involvement with the VRMC. Close associates and project officials were most efficient in motivating members to join the VRMCs and in bringing about high involvement levels.

Nearly 81% of VRMC members had either medium or high level of achievement motivation with the background of an individual having hardly any role in determining achievement motivation level, as respondents from diverse backgrounds possessed high degree of achievement motivation. This is probably due to the impact of training. Interestingly, Scheduled Castes, Backward Classes, labour class and uneducated showed achievement motivation levels similar to or higher than upper sections of the society.

As training is a significant component of HCFP, the impact of training was assessed in terms its stimulatory and participatory aspects, which was found to be high among VRMC members, with only 14% and 12% respectively recording a low level of receptivity. Both these aspects of training were correlated with background characteristics of respondents and organisational characteristics of VRMCs. With regard to background characteristics, men were relatively more receptive to the

stimulatory and participatory aspects. Muslims were found to be less receptive. *Vaishyas* (business people) were relatively higher in terms of the stimulatory training effect, with less receptivity to the participatory aspects.

With regard to Scheduled Castes and Backward Classes, who were only moderately high in terms of stimulatory training effect, the effectiveness of training was higher in promoting participation among fellow villagers. Both the educated and the uneducated took interest in receiving training. But those who were graduates and post-graduates had high impact in terms of stimulatory training effect, with less effect in its participatory aspect, whereas illiterate respondents were equally receptive in terms of both stimulatory and participatory aspects of training. Villagers involved in farming were equally high in level of receptivity for both types of training, whereas those working as labourers showed more effectiveness in participatory aspects of training.

The impact of training was most effective in the fourth batch, followed by the first three batches. Training is yet to make its full impact in the fifth and sixth batches which yet have to receive the full training package. In order to sustain the impact of training in the first, second and third batches, support in terms of training by HCFP needs to continue.

A very high proportion (96%) of respondents who had high receptivity in terms of both stimulatory and participatory training aspects had either high or medium level of achievement motivation. Likewise, around 90% of them had either high or medium level of VRMC involvement. There is clear correlation between high sense of achievement motivation and high level of VRMC involvement on the one hand and high receptivity for training on the other hand.

One-third of the respondents expressed the view that training related to leadership had most impact, while all of them opined that training in community participation was most important for them. Correlating different attributes of training has shown that communication skill was rated as high and awareness related to gender issues rated the lowest. The interrelationship of different attributes indicated that communication skill could develop leadership attributes but not awareness on gender issues. Training should, therefore, lay more emphasis on gender issues.

The study assessed perceived effectiveness of VRMCs in terms of their goal achievement. As VRMCs were formed with the assistance of HCFP, members emphasized financial assistance given by the project as the most important input at the initial stage (61%), highlighted assistance regarding plantation at the intermediate stage (90%), and 60% reported that HCFP assistance at the current stage was mainly in terms of overall development of their villages.

As regards effectiveness of VRMCs, the members perceived VRMC as an institution appropriate to work towards community participation, overall village development and solving specific problems related to the village. Activities relating to community participation were most common, though about one fifth of the members now consider the VRMC to exist primarily for its original purpose of managing natural resources; the VRMCs have clearly transcended their original goals.

While correlating perceived effectiveness of the VRMC with background and organisational characteristics, members below 30 years had a relatively low estimation of VRMC effectiveness. Women and housewives had a high perception of the same (50%) as compared to men (45%). In terms of religion there was no significant difference. Caste-wise, *Brahmins* had a high estimation of VRMC effectiveness, followed by *Jats* and villagers belonging to Scheduled Castes and Backward Classes. The illiterate did not differ from the educated in terms of perceived VRMC effectiveness - 50% of those with no education perceived a high degree of VRMC effectiveness.

The village community, caste groups, relatives and project officials were very good sources of motivation for members to join the VRMC. The correlation of effectiveness with organisation variables shows that ordinary members perceived higher VRMC effectiveness than office bearers. This shows that VRMCs are not victims of elitism, which is supported by lack of conflicts in them.

The members are well aware that VRMCs were formed with the objective of undertaking and managing plantations. VRMCs developed an interest in community participation, and all members showed interest in the overall development of the village. VRMCs had cordial relations with Panchayats and other village bodies. It could, therefore, be concluded that VRMCs not only

brought different sections of society together, but also generated a spirit of participatory development, taking villagers in the direction of self-reliant rural communities. The holistic approach adopted by HCFP in training and developing VRMCs has built their capacities, changed attitudes, and brought about a sense of ownership in them.

29. Viruthiyel, Joseph with Jonsson, Göran (2007) Self-Help Group Capability Assessment 2007

The active involvement of women, who constitute nearly 50% of the rural population of Haryana, in community forestry development is a major challenge of the Haryana Community Forestry Project as gender mainstreaming is mandated in the project design. As a result an institution of Self-Help Groups **(SHGs)** was formed in project villages for social mobilization and economic and social empowerment of women. The HCFP has adopted the model of micro-finance through SHGs as the appropriate tool for gender mainstreaming.

The process of formation of SHGs was started in the year 2000-01 and so far (2006-07) the project has promoted 180 SHGs in 101 selected project villages with a total membership of 2,150, an average of 12 members per SHG. All SHGs, except three, are exclusively of women only, with 57% of the SHG households belonging to Scheduled Castes or Backward Classes. The typical SHG woman is running two micro-enterprises and is earning a gross income of Rs. 25,000 in a year. The project provides a matching grant of Rs. 2,500 to each SHG which has been successfully functioning for at least six months.

Training is an important component of SHG working. A training manual has been prepared to train grassroot level workers including Link Workers and NGO staff on various aspects of SHG development. In addition, a printed pictorial tool kit used to train SHG members has been prepared. Each SHG has also been provided a mini-library with booklets on a wide variety of issues, to promote the concept of holistic development. Additionally, the project has provided facilities for organising special SHG workshops, launching of awareness campaigns, organising skills training, literacy training, study tours and exposure visits for the SHGs.

The project has also formed cluster associations of SHGs with ten block level cluster associations and one division level federation, beginning 2005-06. The purpose of the associations/federation is to aid in mutual exchange of ideas and information, take steps to make available forward and backward linkages for micro-enterprises and to lend more visibility to the SHGs so as to make this a sustainable movement. Most SHGs are members of these institutions. Executive members of the cluster associations are given specialized training in managing them.

The SHGs have mobilized savings of Rs. 5.8 million, in addition to getting matching grant to the extent of Rs. 0.45 million. Out of this corpus the SHGs have provided micro-finance of Rs. 13 million to its members, in the process earning an interest income of Rs 1.2 million, without much administrative cost. The groups are having adequate reserve funds.

As part of capacity building and lesson learning process, the HCFP assessed the capacity of the SHGs on several social, economic and organisational parameters. The first such exercise was carried out in 2003-04 and the present one is third in the series. The assessment used a participatory tool of self-assessment by the groups themselves, combined with an external assessment by impartial consultants. A non-conventional, composite rating tool was designed by the Technical Assistance team, comprising of nine broad capacity indicators and 70 sub-indicators. The rating includes aspects of group capabilities in terms of organization, saving and credit, financial management, micro-enterprise development, awareness and attitudes, networks and linkages, empowerment and influences, skill development and plans and visions.

This assessment has shown that a typical SHG has received an average score of 7.5 out of a total score of 10 in terms of the combined overall score spanning nine major indicators. This indicates that, considering all aspects, the average SHG under the project is a well knit grassroots level organization capable of carrying on their activities even without external support. The highest score (9.2) is for “awareness and attitudes”, followed by “savings and credit” (8.5), “financial management” (8.5), “organisational capacity” (8.3) and “skill development” (7.8). This means that group functioning has resulted in the members imbibing attitudes and skills that are necessary for advancing in the economic and social domain. The performance of SHGs in other areas is also good but needs further strengthening. These are micro-enterprise development (5.8), networks and linkages (6.9), empowerment and influence (6.3) and plans and visions (6.1).

The project has adopted the approach of introducing the SHG members to low-risk low investment activities like vermi-composting, dairy, etc, so that they inculcate the above skills on the principle of learning by doing. It has, however, to be ensured that people are able to graduate from mini-micro-enterprise to micro-enterprises and then to more ambitious activities. They need to be provided opportunities for this, including linkages with technical institutions, access to institutional credit, marketing linkages etc.

The report also includes the findings of a survey as to how SHG women have used the earnings of their micro-enterprises. The highest utilization ranking was given to additional investments in micro-enterprises, followed by improved housing, education for children, better clothes for family/children, better nutrition, bank savings, purchase of household items, repayment of loans to moneylenders, etc. Basic needs of the households have largely been met through the money earned by women.

Out of 173 SHGs assessed, 103 groups (59%) are rated as “good”, 65 (38%) as “moderate” or medium and five (3%) as “weak”. This is a huge improvement since the previous assessment made in 2005.

The extent of support received by SHGs from different service providers and stakeholders was assessed through rating of SHG perceptions on this aspect as “Very good”, “Good” or “Not good”. The support provided by NGOs was perceived to be on the whole very good or good, with the exception of “not good” rating by a few SHGs in Hisar and Kurukshetra where the NGOs have been recently inducted. Similarly, the rating of Forest Guards is constantly high. There is considerable improvement in SHGs’ rating of support from VRMCs since the previous assessment in 2005. This shows that there is improved integration between SHGs and VRMCs, which is encouraging.

The continued poor SHG rating of the support received from village Panchayats and other providers is a bit alarming, as these would be the main sources of support to SHGs after project phase-out. There is obviously an increasingly important role for cluster associations of SHGs to emerge not only as support providers on their own, but also to work towards better integration with the government service delivery mechanism.

In purely economic terms, not considering the social and empowerment benefits, the benefit-cost ratio, comparing SHG women’s net income from micro-enterprises against total project expenditure for the SHG component, is 1.5:1, which, by any standards, is a highly positive result. Thus social and economic benefits, by far, outweigh the cost on the project and clearly justify the investments. Further, the breakeven point was reached within a period of little more than six years.

The overall conclusion is that the SHGs in general have developed into vibrant, participatory, community based institutions that are capable of functioning independently. They will continue to function even after project phase-out. The capacity building efforts should continue till the project ends, particularly in the area of strengthening cluster associations and placing thrust on development of weak and moderate SHGs.

31. Kaul, O.N. (2007) Environment Impact Study in Haryana Community Forestry Project Villages

A community Environmental Management Baseline Study was commissioned by HCFP in 2000-2001, in the first 60 project villages. The study was undertaken in order to understand the environmental implication of the activities planned under the project and to suggest environmental interventions that could be implemented in the project villages. A summary of findings of the baseline study indicated that there were 34 environmental issues which needed attention. For all significant environmental issues, environmental interventions that could be taken up either by HCFP or other State and Central agencies were suggested.

Community involvement in various activities of the project was ensured through village level institutions like Village Resource Management Committees (VRMCs) and Self-Help Groups (SHGs), which were established to strengthen community participation. These institutions have played a major role in alleviating environment problems.

Village Resource Management Committees represent all sections of the society in each village, to whom intensive training was imparted by the project, in self-sufficiency, capacity building and plantation management. Being a sub-committee of the village *Panchayat*, which is the organ of local Self-Government based in the community itself, VRMC becomes the ultimate guardian and custodian of community forests, which are Common Property Resources of the village community.

The active involvement of women, who constitute nearly 50% of the rural population of the State, in community forestry development is a major challenge of the project as gender mainstreaming is mandated in the project design. An institution of SHGs was formed for social mobilization and economic and social empowerment of women. Through collective action and other dimensions of group dynamics, these SHGs have developed into social and economic affinity groups pursuing common interests, including environment.

An Environment Impact Assessment Study was carried out in 56 villages (four villages studied earlier were eventually rejected) during 2007. There have been a number of project interventions in these first 56 villages, which are expected to have an impact on the local environment. The present study deals with the 22 more important environmental issues which are: (1) Dung cakes pressure on availability of Farm Yard Manure, (2) Fuelwood pressure on forest resources, (3) Pollution from *Chulhas*/Diesel engines, (4) Dust storms, (5) Disposal of domestic garbage, (6) Drainage of domestic wastewater, (7) Damages by wildlife/blue bulls, (8) Pollution from cattle burial grounds/waste collection, (9) Poultry farm units – flies and foul smell, (10) Loss of crop land due to shifting sand dunes, (11) River, *Nallah* erosion, (12) Loss of long term soil fertility, (13) Salinisation of farm soils, (14) Pollution of *Johads*, (15) Wastage of domestic water, (16) Quality of drinking water, (17) Rising of water table, (18) Lowering of water table, (19) Damage to plantations, (20) Encroachment of *Panchayat* lands, (21) Termite attack on trees, and (22) Illegal felling of trees.

The present study was concerned with the assessment of: (i) The extent to which environmental problems listed in the earlier baseline study (important and measurable ones) have been alleviated by project intervention and/or action taken by village level institutions; (ii) What has been the general improvement in the area from an environmental point of view (apart from the problems listed in the baseline study), like the effects of plantations, *Johads*, organic farming, *Chulhas*, SHG environment action, etc.; (iii) What has been the role of village level institutions like VRMCs and SHGs in environmental improvements. Have they been active in bringing about change? What have they done to address environmental issues?; (iv) If there has been an increase in environmental awareness amongst the villagers and village level institutions like VRMCs and SHGs and whether these institutions are ready to bring about environmental improvements; and (v) Soil improvements, specifically pertaining to pH and organic carbon, as a result of plantations raised.

Each of the 56 villages included in the present study was surveyed by the project team of the Institute for Sustainable Development (ISD), along with the villagers present, to have a first hand knowledge of the present environmental conditions of the villages and to find out if environment issues raised in the baseline study have been attended to or if they have not been addressed.

The general improvements in the area, if any, were also observed. Focus Group Discussions (FGDs) in each village with villagers, VRMCs and *Panchayats* were held. Besides, FGDs were also held with SHGs (mainly women) in each village, separately. The two FGDs in each village were arranged to discuss the various environment issues raised as problems in the baseline study and how they have been addressed.

The assessment of soil improvements as a result of tree plantations raised was done through determination of soil pH and organic carbon of soil samples taken from open and plantation areas which were analysed at the Soil Conservation Research Centre at Chandigarh.

There were a total of 336 problems, for the 22 environment issues mentioned earlier at the time of the baseline study (year 2000), of which 117 problems were of *low* intensity, 135 of *medium* intensity and 84 of *high* intensity. Of these 336 environment problems, 63 issues (nearly 1/5) have been solved through various interventions while 273 issues remain. Of these 273 issues, 53 (20%), 91 (34%), 87 (32%) and 42 (16%) are of *very low, low, medium* and *high* intensity respectively. 15% of the baseline problems have been alleviated to very low intensity level and the number of severe environment problems has come down by 50%. The major problems which still continue in terms of the number of villages involved and where the problems are of substantial, *medium* and *high*, intensity are: (i) Damage by wild life/blue bulls – 46 villages, (ii) Pollution of *Johads* – 28 villages, (iii) Termite attack on trees – 26 villages, (iv) Wastage of domestic water – 22 villages, (v) Drainage of domestic wastewater – 21 villages, (vi) Quality of drinking water – 17 villages, (vii) Lowering of water table – 17 villages, and (viii) Fuelwood pressure on forest resources – 17 villages. These problems need to be addressed, to have a better environment in these villages.

Besides the interventions made to offset the various environment issues, a number of activities were undertaken by the residents of these villages, with the help of respective VRMCs, SHGs, and *Panchayats* and the HCFP and the State Forest Department, to have a general environmental improvement of the area. Though the number of activities carried out is large, the more specific activities towards general improvement of the environment and living conditions in the villages are: vermi-composting, smokeless *chulhas*, actions to protect plantations, actions against use of polythene bags and *Johad* pollution, garbage dumps, cleaning of village lanes and drains, water supply, dry pit latrines, etc.

The interaction of the ISD team with VRMCs, SHGs and the villagers has revealed that the interventions made by the HCFP have produced highly encouraging results. Not only have these interventions helped in tackling the specific environmental issues/problems (as listed in the baseline study), but the motivation and spread of awareness among the villagers has ensured the prospect of better environment and living conditions for them.

As a result of proper training and guidance provided to VRMCs and SHGs by the HCFP, essentially for the preservation and improvement of environment through community participation with active involvement of the *Panchayats*, they have responded positively, producing very encouraging results. It is worth mentioning that the SHGs in coordination with VRMCs and with regular cooperation of the *Panchayats*, have successfully carried through the message of community participation across the village populace, involving numerous activities towards better environment and living conditions. The mindset of farmers has undergone a change for the better, with a sense of belonging and aiming for a better future for the community at large, as opposed to watching of personal interests alone.

Soil improvements, specifically pertaining to pH and organic carbon, as a result of tree plantations have shown an increasing trend for organic carbon under plantations compared to open areas, which is expected. There has not been a significant reduction in pH values under plantations. as these plantation are young and located in arid areas, where the build-up of organic carbon is rather slow, the amount of organic matter added annually being oxidized due to high temperatures. The effect of plantations on reduction of pH would be seen only when these plantations are much older, producing the desired effect and bringing soil salinity under control through various soil amendments.

34. Viruthiyel, Joseph with Jonsson, Göran (2007) Capability Assessment of Village Resource Management Committees 2007

The Haryana Community Forestry Project is one of the most successful experiments in Community Forestry with the unique approach of participatory management methodology, which is designed to enhance the stake of village people in various project activities. Community involvement is ensured through the village-based institution of Village Resource Management Committee **(VRMC)**, which is assisted to develop technical, managerial and social capacity to carry on community forestry activities even after project phase-out. Being a sub-committee of the village *Panchayat*, the latter, being the organ of local self-government based in the community itself, becomes the ultimate guardian and custodian of community forests, which are the common property resources of the village.

Capacity Assessment of VRMCs was taken up by HCFP from 2001 when it became an annual feature (except in 2006). The purpose of the exercise was to understand as to whether the project is achieving its result of "improved capacities of village communities to manage community forestry activities." Achievement of this result is necessary to achieve the project purpose of "developing a process for sustainable management of natural resources".

This last round of assessments covered all the 328 VRMCs. In order to develop a methodology for the purpose it was necessary to reduce the abstract concept of "VRMC capacity" to relevant performance areas related to various aspects of VRMC functioning. This was done by identifying nine broad indicators and 55 associated sub-indicators. The broad indicators were performance related to information management, planning, conflict resolution, organisational management, financial management, participatory monitoring, management of common property resources, access of benefits to the disadvantaged, and knowledge and skills sharing.

The sub-indicators were formulated in terms of "Yes" or "No" questions. Depending on the answers, the VRMCs were given scores out of 10 on each indicator. On the basis of the aggregated score an Overall Capacity Index **(OCI)** was developed, based on which the VRMCs were rated as "good" (mature), "moderately capable" (likely to become mature) or "weak" (not likely to become mature).

According to the current assessment 24% of the VRMCs have an OCI above seven and can be considered as "good" or "mature". About 71% have moderate capability and the proportion of weak VRMCs is only 5.5%. **Thus the vast majority of the VRMCs have the potential to be sustainable and continue even after project exit.** Though this is very good, the actual results can be seen only when the project ends and the VRMCs have to perform independently. However, on the project wide scale, the OCI of a typical VRMC in 2007 was 6.1, which indicates that the average VRMC has moderate capacity, with good capacity within reach.

Comparing the assessment of 2005 to that of 2007 with regard to VRMC management, protection of natural resources and knowledge and skills sharing, these have improved in 2007. The capacity related to financial resource mobilization continued to be weak in all assessment years. Conflict resolution capability has shown a diminishing trend against 2005 level and there are evidences that areas of new conflicts are emerging. This aspect needs to be tackled as it has major implications for the sustainability of VRMCs.

The proportion of VRMCs having good information management capacity has declined over the 2005 level, but is better than in the assessment years preceding it. VRMCs need to enhance their capabilities in this area, particularly as the Forest Department will not be interacting with VRMCs as frequently as in the past. There has also been some declining trend with regard to planning capability, except in making some updating adjustments in the microplan and in village consensus on microplan contents, where the situation has improved since 2005.

Though conflict resolution capability continues to be one of the strongest areas of VRMCs in Haryana, there has been some loss of ground from the 2005 level. The performance in respect of organisational capacity is better than all previous years, which is good for continued sustainability of VRMCs.

With regard to financial management capability, the weakest area of VRMCs, there are improvements in generation of income from common land or other village resources, funding of micro-projects by non-project resources and adequacy of funds for future resource management. However, fewer VRMCs than in 2005 believe they have sufficient funds to become sustainable and VRMC capability to generate funds from outside the village has been vastly reduced.

There is a decline from the 2005 level on all aspects of resource monitoring, except in the matter of logbook maintenance. The substantial improvement in the field of resource protection augurs well for the sustainability of the resource management process. There are improvements in many areas of capability to support disadvantaged groups. The knowledge and skill sharing capacity is also improving.

The report also attempts to correlate the capacity index with survival percentage of plantations. **It is found that survival percent of woodlot plantations in villages which are rated as "good" was higher at 75.5%, compared to 69.7% in the villages with "weak" VRMCs.** Villages with social fencing have better survival than those without. Good VRMC capacity combined with social fencing was seen to be crucial for survival in woodlots with an area above 40 ha.

There were mixed opinions regarding the continuance of VRMCs as an effective resource management institution. While about one third of the VRMCs are confident of functioning effectively, a good number made it contingent on the attitude of the *Panchayat* that will be in power and continued support of the Forest Department. In most of the villages with weak VRMCs, there were strong doubts about their continuance.

With regard to protection of village woodlots and tree groves, people are, by and large, conscious about the need to preserve natural resources and in many of the villages there was a firm resolve to protect them by any means. The sustainability of dams and *johads* appears to be assured, as these meet some of the basic needs of the communities and adequate user mobilization is in place.

As far as the end use of income from tree harvest was concerned, there was general awareness about the need to set apart some of the proceeds for future afforestation and resource development activities, but this is again contingent upon the policies of the *Panchayats* that would be in position at the time of harvest. People appear to be generally aware of equitable distribution of benefits to the disadvantaged, but concrete plans are yet to emerge.

The overall conclusion of the study is that at least one fourth of the VRMCs have developed the maturity to effectively handle resource management activities in future. Barring about 5% of the VRMCs which are weak, the rest have developed moderate levels of maturity and with sufficient handholding they would be able to carry on the process of self-directed natural resources management. There exists sufficient motivation to take up tree plantation activities both on community land and private land. Protection of trees has become the ethos of the community. However, **continued support and handholding of the Forest Department would be necessary to consolidate the gains.**

36. Kaul, O.N. (2008) Biomass Estimation Study in HCFP Villages

The Haryana Forest Department is implementing the Haryana Community Forestry Project **(HCFP)** in eleven districts of the State, targeting 337 villages in 37 Community Development Blocks of five forest divisions. The overall objective of the project is capacity building of rural communities to improve the natural environment and to preserve land fertility by sustainable management of natural resources through activities undertaken in a participatory manner.

A Forest Cover and Monitoring Baseline Study was commissioned by the project in 2001-2002, which included land use, tree density and biomass estimation for areas covered by five high resolution satellite imagery sub-scenes. The study was also undertaken to see the implication of the activities planned under the project in terms of bio-volume (biomass) trends and to suggest interventions that could be implemented in the project villages.

It is explained in the baseline study that a strict definition of biomass may not be applicable with regard to biomass estimation. For monitoring of future changes in the cover types and cover condition, volume is a more accurate and reliable indicator of biomass and has, therefore, been used as a parameter in the baseline study.

IKONOS satellite imagery of 1 m resolution was used in the baseline study, along with ground truth verification, to meet the objectives of the study. Only plantations of 2001-02 and prior to that, barring a few exceptions, were taken into account in the baseline study. Bio-volumes of plantations have been given in terms of species by total number of trees and not by area. The main objective of this study was to provide a baseline for monitoring subsequent changes in land use, vegetative cover and bio-volumes (biomass). The study was undertaken in 27 selected villages of five Community Development Blocks included in five districts of the State.

The present study is a follow-up of the baseline study. There has been a number of project interventions in these villages, which are expected to have an impact on biomass trends in areas under forest cover and other major land uses. Bio-volumes have been used also in the present study, to represent biomass.

As a result of a preliminary field survey and the project documents/data available, four land use classes/project components/models were identified for bio-volume (biomass) estimation for the project villages included in the present study. These land use classes are: (i) *Community/Village Woodlots,* (ii) *Private Woodlots,* (iii) *Boundary Plantations,* (iv) *Cultivated Land.*

Enumeration of trees in all plantations of 27 villages included in the present study was carried out for various land use classes/models, the year of formation of plantations and species. The results of the enumeration were expressed on per hectare basis (for community/village woodlots and private woodlots) and for 100 m of length (for boundary/line plantations). Stratified random sampling technique was used in the study, using 10% sample for community/village and private woodlots and 5% sample for boundary/line plantations. All the trees standing on the cultivated lands were counted and measured.

It has been difficult to have an analysis of the increase in bio-volumes (biomass) in different villages, as the baseline data did not indicate area specific growth data that could be compared with the areas in the present study. Moreover, the bio-volumes given in the baseline study are generally by land use classes, total number of trees and species, but not by demarcated area. Further, as it was difficult to delineate plantations undertaken after 2001-02 from the imageries, only plantations of 2001-02 and prior to that have been taken into account in the baseline study, barring a few exceptions. However, some plantations could be demarcated, with great difficulty, for analysis of increase in bio-volume (biomass) for particular areas under different land use classes. Bio-volume (biomass) increase in demarcated plantations indicates that there has been considerable increase in bio-volumes of these plantations in all the three land use classes.

This increase ranges from 11 to 58% in case of community woodlots, 10% in private woodlots and 30 to 86% in boundary/line plantations, depending on the species planted, area and age of plantations. The remaining current biomass volumes as specified in various village tables of the report – barring around seven older plantations not raised under HCFP – represent net growth of biomass for these particular areas under different land use classes, as these areas were not under tree cover at the time of the baseline study.

37. Grewal, S.S. (2008) The Impact of Water Harvesting Dams and Project Experience

Water scarcity limits economic growth in many parts of India and Haryana is no exception. In general 65% of Haryana is arid and semiarid and droughts are a very frequent feature. Most of the natural forests of the state are located in the Shivalik region where, due to excessive human and livestock pressure, the hills have been denuded of forest cover and major part of precious rainwater is lost as run-off. The Haryana Community Forestry project (HCFP), therefore, focused rainwater harvesting by adopting a participatory watershed management approach. Since 2000-01, till 2006-07, 19 earth fill dams were constructed in selected micro-watersheds of Panchkula and Yamunanagar districts.

These dams have a total catchment area of 1342 hectares and a combined water storage capacity of 328.63 hectare metres. The dams vary in height from 9 to 16 metres and top length varies from 70 to 210 metres. It has been possible to provide the facility of irrigation to 1069 hectares rainfed farmlands with gravity. The total cost of dam construction, spillways, and pipelines and soil conservation works in selected watersheds comes to Rs. 487.87 lakh, out of which 82.5% was spent on labour. Special efforts made to ensure sustainability are:

- Detailed dialogue with the communities, assessing their needs and perceptions, level of commitment and formation of Village Resource Management Committees. All the community was actively involved in planning, execution and management of water harvesting dams and irrigation system.
- An element of cost sharing was also introduced, in which each village community contributed Rs. 30,000 as social fund before start of the work. They all did the excavation and layout of water conveyance system.
- The village communities agreed to refrain from grazing and excessive fuel wood extraction from forest catchments yielding run-off to the reservoirs.

Impact assessment studies were initiated in all the project villages, which brought about the following facts:

- In case of seven sites 100% of run-off water was harvested, at four sites 78 to 91% and at six sites 58 to 70% was harvested at an average cost of Rs. 48,660/ha against usual cost of canal irrigation above Rs. 1.20 lakh/ha. The cost of harvested water varied from Rs. 7.4 to Rs. 31.8/m^3 and cost of earth fill varied from Rs. 40 to Rs. 52/ m^3.
- Studies in a pilot village of Bharauli indicated that the yield of crops increased, e.g. wheat increased from 18.35 to 30.8q/ha. The area under vegetable crops increased manifold and as a result net return from 84.5 ha. command area increased from Rs. 235,935 to 973,764 in a short span of two years and to Rs. 1,291,113 in the third year and summer forage crops were included after dam construction. Even in the not so fortunate village of Ibrahimpur the net returns increased from a mere Rs. 4,138 to Rs. 62,520 from 47.4 ha command area. In yet another village, Mirpur, the value of all crops increased by 2.7 times in the second year of irrigation as compared to pre-irrigation baseline. Wheat remained the main crop with double the yield. Profitable crops like onion and onion seed replaced oil seed and pulse crops. The crop value increased from Rs. 7,000 to Rs. 260,000 and fodder production increased six times.
- As the fodder supplies improved, the number of buffaloes increased, resulting in 41.9% increase in milk sold/day in the village. In another typical village, Kaimbwala, the number of buffaloes increased from 97 to 134 and cows from 18 to 43. The total milk production by 16 families went up from 146 to 287 litres/day. The daily sale of milk has increased from Rs. 57 to Rs. 175/day.
- Breakeven analysis indicated that the cost of dam construction was recovered in a period of 3.5 years from additional crop and milk production.

- A study was commissioned to assess the benefits of dam construction to landless in these villages. It was clearly brought out that landless got more employment not only in dam construction, but opportunities of earning daily wages as farm labour increased manifold. Farm women are increasingly employed in vegetable and paddy crop production. On an average a landless family now earns wages worth Rs. 8,480 per year from farm operation. All landless keep livestock and fodder availability from local sources has improved, which has resulted in more milk production. The increased employment opportunities have resulted in better housing quality, access to water and electricity, debt servicing and starting of several other income generating activities.

Large number of perceptible changes in dam villages was recorded through another study:

- Distress sale of land has gone and hitherto uncultivated lands have been levelled and brought under cultivation. The price of land has gone up 5 to 6 times. FYM and fertilizer use has increased. The land rent has gone up four times.
- The number of tractors, trolleys, land levellers, disc ploughs, harrows, diesel engines, chaff cutters, spray pumps, grain storage bins have increased manifold. Rubberised pipes are being used for irrigation instead of unlined kachha channels.
- Migration with livestock and open grazing in forest has considerably reduced. The number of women going to forest for grass cutting and fuel wood collection has come down.
- School attendance, particularly of female child, has improved, expenditure on social functions, education, health care, housing, have all gone up. The number of motorcycles, scooters, TV sets, mobile phones, electrical appliances and furniture has gone up.

The management of dams and irrigation systems by the village community remained the primary concern of the project for ensuring sustainable development. How the empowered communities manage the system and solve day-to-day problems of resource sharing/democratic water distribution remained an active area of concern. The highlights of irrigation system management are:

- All the dam villages have duly elected and registered VRMCs.
- The VRMCs elect an executive body to manage the affairs with due representation of women and scheduled castes/tribes.
- The reservoirs are regularly auctioned by an open bid system to a local contractor and the reserve rates are being raised year after year. A set of rules and regulations has been framed for the contract.
- Water is given on a pre-decided rate of Rs. 10 to Rs. 25/hour to individual stakeholders
- The VRMCs undertake all repair maintenance costs from the social fund.
- The distribution of water is regulated as per availability and crop needs.
- The introduction of paddy and a tendency to use more water for paddy at the cost of Rabi crops is becoming a cause of concern.
- Siltation of water storage reservoirs and lack of appropriate mechanism for desiltation remains an issue, which needs to be resolved.

Several institutional, technical, managerial and economic issues involved in dam and irrigation system management are highlighted in the report.

Appendix 10

BRIEF SUMMARY OF EXTERNAL EVALUATIONS CARRIED OUT ON HARYANA COMMUNITY FORESTRY PROJECT

1. *MID-TERM REVIEW BY EUROPEAN UNION MISSION*

2. *SUMMARY OF EUROPEAN COMMISSION MONITORING REPORT*

14. European Union Consultancy Mission (2003) Mid-Term Review for Haryana Community Forestry Project, India

A Mid-Term Review **(MTR)** of the project was carried out by the EU mission from September 25 to October 12, 2003. The general objectives of MTR was to *"assess and evaluate the achievements made by the project in meeting its objectives with special emphasis on the sustainability of environmental, social and economic benefits."* A brief summary of the review follows.

Overall Outcome to Date

The project is making very good progress in meeting many of its objectives. In the early years progress was slow as systems and process were established but there are clear indications that more substantial progress is now being made. The project is making a significant contribution to environmental amelioration through tree planting. The impact of most of these activities has not yet been felt and local people perceive employment as the most significant project benefit. As the trees mature their beneficial effects are likely to persist for many years.

Some project activities, particularly commercially orientated farm forestry in the north-east of the state, are likely to yield significant financial and economic benefits. Depending on market needs they are most likely to be fully sustainable in the medium to long-term.

Project benefits accrue disproportionately to the landed and better off. Effort is required to ensure that adequate benefits accrue to disadvantaged communities, and also to ensure that these communities are not further impoverished by reduced access to common property resources as a direct result of project activities.

The project is managed to high standard, role and responsibilities are clear, procedures are well understood and generally adhered to, and there is a high degree of rigour in accounting and monitoring.

The TA is well managed and making a valuable contribution to the project. The TA inputs are also widely appreciated and valued by project staff.

Recommendations

A series of recommendations to improve implementation have been made in relation to financial management and procurement, project planning and management, technical implementation, Village Resource Management Committees, Self-Help Groups and Technical Assistance. Some of these recommendations arose from suggestions made by the project implementation teams; many are already being acted upon in one way or another.

Financial Management and Procurement

- Financial management and procurement is handled to high standard by the project and the EC and GoH have both provided appropriate support.

Project Planning and Management

- A new Logical Framework **(LF)** should be prepared through a facilitated and interactive workshop process involving key project staff; the workshop should also provide an element of training and orientation in LF principles and procedures to key staff and field managers; an external facilitator should be sought to assist in a logical framework workshop together with the PMU, other key project staff and associated NGOs.

- The PMU should consider reducing the time and effort spent on activity monitoring in favour of expending similar resources on more qualitative and result oriented indicator monitoring in line with a revised logframe.

- Staffing has been reasonably constant at the senior level, particularly within the PMU where continuity is most needed. None of the project's steno-typist positions appear to be filled. This

does not appear to affect the PMU but may impede the smooth operation of Circle and Divisional Offices. Staffing requirements of the project should be reviewed and, if appropriate revised.

Technical Implementation

- The project has proposed a very substantial decrease in targets for sand-dune stabilization. The project proposes to use the resources saved for expansion of activities from 300 to 330 villages mainly in the south-west and western districts. In addition the project proposes to undertake linear planting along approximately 1,000 km (700 ha) of village roads to serve as shelter belts in arid areas. The MTR, endorses these proposals.

- There is strong support from the villagers, project staff and GoH for *Johad* rehabilitation. The mission recommends that rehabilitation of *Johads* should be undertaken in up to 30 select villages. *Johads* should be rehabilitated by the project in west and south-western districts where tree-related environmental benefits can be identified and a significant contribution in cash and kind is available to the participating communities. EC funding should be sought from contingent funding.

- The project proposed to the MTR that, in order to consolidate its achievements, its *Eucalyptus* cloning facilities at Seonthi should be expanded by additional investment of approximately 4,000,000 (€8,000). This funding can be sourced from saving within the budgets for plantations without affecting planting targets. The mission endorses this in principle and recommends the costed proposal be submitted through the 2004-2005 AWP process.

- The water harvesting dam component should be modified, as proposed by the PMU, appropriate provision should be made in the next AWP to:

    - Permit simple treatment of the catchment area (not involving masonry or cement).

    - Include the de-silting of three dams on a pilot basis, with a view to de-silting further thereafter.

- The MTR strongly recommends that a ceiling should be put on the total number of free seedlings that could be taken by any one farm family. The project has agreed to implement the mission's proposal that it should consider limiting the number of free poplar supplied under the project.

- The mission recommends that the project should provide horticultural training, materials and marketing support to interested SHGs, to enable them to raise grafted fruit trees for sale. The project should then buy fruit trees from those SHGs, subject to the quality being acceptable, so reducing its dependence on the Horticultural Department. The mission considers that efforts regarding high quality fruit trees are better confined to the kitchen garden component and Farm Forestry, where issues of management and benefits are clear.

- The project has already collected and analysed some valuable data on costs and returns associated with different tree/crop combinations. It should ensure that the same exercise is conducted in all districts and that the conclusions are disseminated to farmers. Sustainability will be increased by the provision of well-founded advice.

- Many of the project's target beneficiaries are dependent on *Panchayat* and other common property land for fodder and grazing. Temporary or permanent loss of access to these resources endangers their livelihoods. The project may have temporarily increased fodder availability through planting of fodder grasses, protection of plantations and afforestation of *Panchayat* lands. Nevertheless the project needs to ensure that poor and disadvantaged groups are not further marginalized through project activities and should ensure that fodder and forage production from common property lands is increased.

- The scale of project activities in relation to energy efficiency should be revised; the project should supply more energy efficient *Chulhas* but should stop building crematoria.

- Financial and other data is provided at village-level through large notice boards at each site. This is a commendable effort to introduce and improve transparency. The efficacy of these boards, and other project literature, could be improved if they were designed so as to require little or no ability to read. The MTR recommends that the project seek advice from organizations involved in adult education and literacy.

- The PMU is exploring the possibility of accessing external carbon sequestration funds for tree planting and maintenance. It is unlikely that such funds would be available to a donor funded project but they might be available to sustain and extend some of the concepts introduced by the HCFP. The MTR supports the PMU in its proposals to explore external funding sources for carbon-fixing forestry, with a view to the continued funding of the longer rotation, community plantation models. This initiative should be supported through TA.

Village Resource Management Committees

- The VRMCs are the project's main mechanisms for assuring local representation and long-term sustainability of project results and activities. The project recognizes that greater emphasis must be placed on developing the maturity and institutional strength of the VRMCs so that increasingly, they can take over project functions. This must be achieved by handing over not only management but also financial control and responsibility. Apart from the limited numbers of women participating in the SHGs and the 3-4 women of the VRMC, women's participation in the project has been largely passive. They do not appear to have much of a role in terms of village level decision making for managing the resources and benefits of the project. The situation regarding SC and OBC is less clear but is likely to be similar. There is need to include the inputs of women and marginalized groups in the VRMC decision making process. It is therefore important for the project to ensure that these groups are properly represented at the micro-planning stage and to give training to all members of the VRMC, not just the leadership. The Community Link Workers identified and trained through the project have the potential to become local resource persons for establishing linkages with other government programmes, training, information dissemination and management support even after the project is over.

    - The mission endorses the view of the project that the training needs of VRMC members should be kept under review and accorded higher priority.

    - The FG is still responsible for monitoring accounts in many VRMC groups. The project needs to look more actively for ways to accelerate the development of VRMCs, possibly through stronger linkages with other agencies and other Government departments.

    - There is need for the state level and district level steering committees to establish linkages between different line departments to more proactively initiate activities in aspects of the micro-plans that fall within the jurisdiction of other line departments.

    - There appears to be no indication of how much income may accrue under various plantation models, adequacy of income to meet expenditure, or of the probable costs to be incurred by VRMC. These aspects need to be assessed to ensure financial sustainability, otherwise VRMCs will find it difficult to survive and perform functions like tree protection and equitable distribution of benefits to the village community.

Self-Help Groups

- The SHGs have been very important in beginning the process of women's empowerment in villages and the group strength provided by the SHG is perceived by participating women as one of the main benefits of the project. However, a limited number of SHGs are being formed in less than a third of project villages. They do not adequately meet demand even in those villages. This should be a matter of some concern as the SHG *fora* are really the only substantial contact that the project has with women and the project does not have any women staff. It appears that the Forest Department is experiencing a degree of success in organizing

the SHGs with the assistance of NGOs and the community Link Workers. Nevertheless FD capacity for this kind of activity is limited.

- The sustainability of the SHGs can be enhanced by improving their linkages with the formal sector; and through accessing the opportunities available with financial institutions and Government schemes.

- The Community Link Workers are vital links for the project in developing, nurturing and sustaining the capacity of SHGs. Much higher priority needs to be placed on developing the capacity of Community Link Workers, particularly women, to establish and support SHGs.

- There is need for sustained inputs to the project by a gender expert in order to help plan these activities and mainstream them into the project. A gender specialist would also help to incorporate suitable activities and approaches into VRMC management. It is recommended that a local TA gender expert should be recruited to provide substantial inputs.

- The NGOs are retaining responsibility for managing the SHG accounts. It is necessary for exit strategies to be developed for the NGOs that enable the SHGs to take over responsibility for all of their own affairs.

Summary of European Commission (EC) Monitoring Reports

Month and Year	Relevance and quality of design	Efficiency of implementation to date	Effectiveness to date	Impact to date	Potential sustainability
April 2000	• Assumptions and original design for the project are still valid. • Preparation of OWP showed that socio-economic and physical conditions differ considerably in eastern and western districts of the region covered by the project. • The Logical framework analysis has been followed and a logframe attached to OWP and AWP.	• PMU has done good basic work in developing clear operational guidelines in village selection, initial stages of community capacity building process and training of personnel.	• Real implementation has yet to be started.	• Same as for Effectiveness to date.	• With regard to GIS, the OWP only marginally touches at the requirement to include remote sensing as a source of verification. • The project is looking at the practicality of acquiring landsat imagery from local sources which is highly recommended to attempt some broad scale monitoring of environmental degradation trends.
June 2001	• Project is highly relevant and timely. • Needs, purpose and objectives have been generally well defined. • Basis for action must be approved 'micro-plans' of the participating villages. • Results are relevant as defined, as are the project purpose and overall objectives. • The project structure is very difficult and highly detailed with 300 villages and many different physical and financial resources to manage. • The assumptions are generally well defined.	• The project performance has greatly improved and is now good in general. Most of the activities are on time. • Involvement of different kinds of consultancies are necessary. • The targeted indicators for seven of the 14 planned results have been delivered completely or exceeded. • The quality of results is acceptable in the given circumstances and is improving. • Both the inputs and tasks are very well managed • Project management can cope with most of the challenges.	• Given the demanding circumstances in the villages (poverty, social tensions, underdeveloped community structure), the project has been able to get underway which is quite an achievement. • The project has built generally a positive image in the villages. • The planned beneficiaries have good access to project services and results. • Though communication with them is satisfactory, continued efforts of the management are necessary to improve staff capacity in community development.	• The wider planned effects are small to date. • Considering the general progress of the project and its management level, the likely achievements of the planned wider effects by the end of the project duration are very positive. • As strongly practised by the managers of the project to achieve and sustain results the capacities of rural communities be well developed to manage their natural resources in a sustainable manner as the project is far more than an afforestation project. • Establishing contacts with other similar projects would be beneficial, regarding community involvement.	• Basic conditions of sustainability are in the project design and implementation follows them. • Working on village lands is a challenge at the village entry phase but also a positive factor of sustainability. • Quality and methods of preparation of village micro-plans should be improved to have maximum possible participation of women and poor. • The scope of environmentally related activities should be strengthened and widened. • In the long-term it will be necessary for the village committees to emerge as self-sustaining institutions for development.

Month and year	Relevance and quality of design	Efficiency of implementation to date	Effectiveness to date	Impact to date	Potential sustainability
December 2002	• Project purpose and objectives are well defined in the log-frame. A new log-frame has been drafted clearly listing SMART OVIs. • The project is relevant to environmental and socio-economic needs – aiming to reverse land degradation processes through afforestation and sustainable management systems, which simultaneously empower the landless, scheduled castes and women. • Targeting 300 villages, the project facilitates the creation of village committees (VRMCs), 20% of which comprise women, landless and scheduled castes. The project design thus ensures the active participation and decision making of vulnerable groups. • Project design incorporates a M&E unit which utilizes GPS mapping and photographic monitoring to demonstrate results. • Whilst project design was target orientated, it is increasingly focusing attention on tree survival rates rather than hectares planted.	• Drought has delayed some activities such as transplanting seedlings from nurseries to villages, altered farmers decision-making in terms of land-use allocation. • A new draft Log-frame reduces number of sand dunes from 9,300 to 5,000 ha. The new log-frame also provides appropriate survival rate targets taking in to consideration climatic differences and possible drought conditions. • After a drought-induced problematic start, the 4th year work is on track and some annual targets have been surpassed (tree groves planted). • The project is making good progress, with 41% of woodlots, 57.2% of forest farms, 92% of tree groves, 66% poplars and 92% of kitchen gardens achieved. • The project has adapted well during implementation, displaying considerable flexibility via innovative modifications to its many components. • In response to technology-induced changes and participatory-led demands, the project has adopted modified woodlots, sand dunes and tree groves. • Comprehensive monitoring system enables close monitoring of results and progress towards objectives. Participation is monitored by village book-keeping and provides information for decision-making and corrective action. • Monitoring of beneficiary targeting for kitchen gardens and IGAs is less pronounced and results have been hampered due to drought-induced income reduction which constrained SHG saving capacity.	• The project has established a process for sustainable management of forest resources in 172 villages. • Neighbouring villages have recently visited project sites and are seeking to emulate the process including its participatory approach. • The project is having impact on KAP of the Forest Department, with TA noting a shift in practices from quantitative targeting of hectares planted to focus on quality and survival of trees. • Training and post-training assessments monitor changes in KAP. • Village beneficiaries have good access to project services and results. One completed dam has significantly boosted landless access to work and income. • The project denies landless grazing access to common land for 3 years though they are able to cut and carry grasses for their livestock. • Beneficiary targeting of extension and kitchen gardens should be monitored. Tree quality is now monitored. • IGA beneficiary targeting should be monitored.	• The project is impacting on state policies – with a proposal that 40% of *Panchayat* land be allocated for plantation under the FD in order to reach National Forest Policy goals, and that *Panchayats* should plough back a proportion of tree sale earnings for future plantation activities through VRMCs. • A declaration has subsequently determined that all encroachments on *Panchayat* land be removed and given to the FD for plantation. • The project appears to have brought about a new conscientiousness amongst staff with the FD displaying prudence in placing survival rates before annual targets. • The project has succeeded in expanding area under forest cover though it is too soon to realise production and income benefits for rural communities. • The one completed dam has increased incomes of both the landed and landless, enabled landed villagers to realise three harvests a year and granted the landless (including women), access to labour throughout the year and improved diets.	• The project is bringing about changes in state policies, attitudes and practices as well as strengthening natural resources. • The project provides sustainable benefits, generating marketable timber and firewood, enabling the purchase of new saplings upon maturation. • The project builds institutional capacity at both departmental and village level by enabling communities to manage their environment in a sustainable manner, while simultaneously addressing gender and socio-economic issues.

Month and year	Relevance and quality of design	Efficiency of implementation to date	Effectiveness to date	Impact to date	Potential sustainability
May 2003	• Establishing sustainable management of forest resources by village communities is still relevant. • The original design proved too ambitious and the scale of operations was later reduced from 720 to 300 villages. • PMU wants to reduce the target down to 5,000 ha in case of sand dunes. This adjustment is justified because of drought in sand dune areas. • The project is under the guidance of an ambitious PMU, backed by efficient M&E team and extensive database. • Transparent self-critical management is reflected in the quality of activities, results and overall project design. Missing assumptions have been incorporated, initial design problems corrected, the LFM is regularly reviewed, although some of the OVIs at overall objective and Project Purpose level could be even more specific and measurable than they currently are.	• Some activities, as per the 2002-03 AWP, were delayed because of drought, especially in the Southwest. • However, planned results were mostly delivered according to schedule and are quantitatively satisfactory with respect to enrolment of new villages, plantations targets (except for sand dunes, because of drought) and promotion of energy saving technologies. • Qualitatively, the survival rate is quite satisfactory for plantations on common lands, managed jointly by farmers and the FD, but problems are reported in two areas: low survival rate of trees in private plantations; slow progress towards establishing self-reliant and sustainable VRMCs and SHGs. • Overall, the project has been quite responsive to changing needs. • In response to farmers' concern about permanent land-use allocation, tree density was lowered on private plantations to permit agriculture in between rows. • To date, three polluted and mosquito-infected village ponds in the Southwest were successfully rehabilitated at VRMCs' request.	• Targeted beneficiaries include women and the most disadvantaged groups (scheduled castes, landless) living in arid areas. OVIs at Project Purpose level have made some progress, but results of the participatory approach are no yet accessible to all beneficiaries. • At VRMC meetings, women don't speak in front of men and lower castes are not listened to. When the group is more homogenous, the process is often more efficient. • Production and sale of vermi-compost, introduced by the project as an IGA for women SHGs is a successful example of participatory approach and women empowerment.	• With participatory approach, 238 VRMCs have been established, though they still lack financial capability. • As regards afforestation, 41% of the OWP targets on common lands have been achieved and achievements on private lands are quite satisfactory (58% farm forestry, 63% poplar plantations, 92% kitchen gardens), except for sand dune fixation (14%).	• From an environmental standpoint, the holistic approach of the project is yielding some excellent results (introduction of vermi-composting as an IGA conducted by SHGs, construction of water harvesting dams, promotion of energy efficient and smokeless cooking stoves, rehabilitating village ponds, lobbying with local authorities to stop illegal encroachment on common lands). • The sustainability of benefits at community level is still uncertain and much remains to be done in the area of capacity building, in order to empower the communities to manage their own environmental agenda. • The project promotes SHGs, whose primary objectives are savings, inter-loaning and accessing bank credits. They need to be strengthened, then federated, in order to become sustainable. • The project currently provides poor people with temporary jobs (562,000 work days for 2002-03), through planting, labour in nurseries, village pond rehabilitation etc. • Tree survival rate is an issue in plantation models managed solely by farmers, versus models jointly managed by the project and farmers. • PMU is well aware of these sustainability issues and difficulties and is striving to solve them.

Month and year	Relevance and quality of design	Efficiency of implementation to date	Effectiveness to date	Impact to date	Potential sustainability
March 2004	• PMU has proposed to raise the number of targeted villages from 300 to 330, to make up for the decrease in the sand dune plantation target. Implementation of this proposal would enable the project to achieve the overall plantation target of 27,380 ha. • The EC delegation plans to prepare an addendum to the FA, incorporating the new target and other relevant activities, which the PMU plans to conduct (rehabilitation of water ponds in draught-prone areas, construction of additional dams, refresher training sessions). • Prompted by the Mid-Term Review, the PMU has extensively revisited its Logframe Matrix, to make it an effective tool for project management.	• The project's efficiency has been boosted by a good 2003 monsoon. Activities are being implemented as per schedule and will absorb, as of March 31st, about 86% of the 2003-2004 budget, according to progress report. • Reporting on activities and results is of good quality. • Quantitatively, results are satisfactory, with 288 villages covered (against 300) and the yearly plantation target met at 92%. • Energy efficient and smokeless cooking stoves are a big success, 1,250 were installed this year. • In addition, 7 dams were constructed and 5 water ponds are under rehabilitation, reflecting a greater emphasis on water management. • So far the project has been very good at meeting its quantitative target in terms of activities, and it is now essential that the PMU focuses on the quality of results.	• M&E field surveys show a steady improvement in the capacity of VRMCs to manage their own environmental agenda. • Field visits confirm that VRMC members are progressively moving from a fatalistic approach towards a responsive approach *vis-à-vis* the environment. • SHGs are gaining strength and confidence, but are far from flying on their own. • The project is sometimes criticized for benefiting the landed and the better off rather than the most disadvantaged members of the communities (landless or small farmers). This is rather severe judgement considering that the project targets areas shelter the most disadvantaged communities of the State. • PMU is nevertheless aware of the risk and tries to minimize it by organizing workshops where shepherds (who usually are landless) are invited to speak, by prompting VRMCs to promote social cohesion.	• Improvement of the environment is becoming visible at village level. • Project is keeping pace with its plantation target and has achieved, to date, 68% of the OWP target for village woodlots (common lands), 97% for farm forestry and 92% for poplar plantations (private lands). SDF is at 30% of the OWP target. • Benefits of biomass production are becoming accessible, with earlier plantations starting to yield wood and grasses. • Most SHGs are engaged in vermi-composting as IGA. • PMU is seeking expertise of carbon emission reduction, hoping that VRMCs could be eligible for existing international emission trading schemes and generate income. • The project acts too much in isolation and should be more active into linking communities to existing governmental schemes or other donor projects available in Haryana, identifying potential synergies for the sake of a wider impact.	• PMU is currently lobbying for an administrative order to ensure that 30% of the revenue of wood sold from common lands is kept aside for replanting, under the VRMCs' responsibility. In effect, this would give the VRMCs an official status. • There is still a lot of room for improvement in the capacity of VRMCs and SHGs. PMU is planning refresher courses for the field staff who implement the participatory approach. • While SHGs are now well acquainted with savings and interloaning for personal needs, they still lack the confidence to turn savings into productive activities. • A gender expert will be joining the PMU for the remaining time of the project and should help the project improve its qualitative performances with respect to SHGs and IGAs.

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March 2005	• The project is very relevant to Indian and Haryana policy objectives of effective forest cover as well as to the framework of the EC world wide priority policies (Environment, Poverty alleviation) and Indian Country Strategy Paper 2002-2006. • The project shows a solid logic regarding its environmental objectives and its benefits reach every member of the target communities. • The nature of the intervention itself, however, determines those who own land benefit more than the landless or the small farmers. • The LFM has been refined and considerably improved; however, the references in the progress reports are still made to categories in the first LFM.	• There is good management of inputs and activities, the results being tracked by use of indicators and through good quality surveys which are complimentary to routine internal monitoring (a positive aspect of the project). • The implementation is on schedule in that the project has covered 339 villages through activities including VE, PA, VRMC formation and micro-planning. • Plantations established in 287 project villages this year (6,865.4 ha). • Survival rates are satisfactory for village woodlots, tree groves, sand dune fixation and linear tree groves though they are low for farm forestry and kitchen gardens, due to a number of reasons (climatic conditions, care by farmers etc). • The poplar tree survival rates were affected by slump in the market which led to their premature felling. • 153 SHGs have been promoted in 91 villages, of which 136 are involved in vermi-composting as IGA. • Most of the planned beneficiary training has been completed • Energy efficient cooking stoves are being installed in 20 villages. • 54 (of the 70 planned) village training centres have been constructed/ nearing completion. • 12 dams completed and 5 are under construction • Technical assistance and manuals produced are of very high quality. • Dependence on TA is very high both for implementation and monitoring.	• Capability assessment of 278 VRMCs have been carried out and they show a positive trend in their capacity building. • The SHGs show success in different areas of income generation, gender equality and social cohesion and are perceived as positive and useful, not only by women in the villages, but also by men, though their degree of confidence and stability varies greatly. • Water harvesting dams are achieving their goals of return on investment and also the creation of a better general environment. • The rehabilitation of common lands is progressing according to plan, mainly through village woodlots and tree groves. There is good and meaningful communication with the beneficiaries. • The new energy saving stoves not only provide the expected benefits on fuel savings, but are also extremely beneficial for the health of women, in particular for diseases related to the eyes and lungs.	• There are observable changes that indicate positive contribution to the project overall objective, involving environmental improvement improved, community sustainable management and use of the resources. • The project is effectively promoting community mobilization that is instrumental for improved resources management capacity. • Dams are allowing increased yields, recovery of investment and also the diversification of crop production incorporating more nutritional and profitable varieties and vegetables. • The benefits of dams are fast and visible, which is an incentive for replication and for the protection of catchments. • Erosion is also minimized by dams, both directly and indirectly by the provision of green fodder and the relief of grazing pressure. • JBIC has used the model and experiences learnt by the project for a new project of similar character that is being implemented in four states.	• VRMCs are the fundamental instruments to ensure sustainable management of resources and of the project benefits. These institutions are showing an increase in their capacity that still needs further consolidation. • The project is lobbying for a state policy that would earmark 25% of the income from harvested woodlots for replanting, which is currently under discussion. • Many SHGs are also showing improvements, but they are in need of more support and maturity. • The project has at its disposal quality information, and is aware of the need to specifically plan in 2005 to address the identified weaknesses. • An encouraging indication is the relative stability of survival rates in plantations that have been handed over to the VRMCs.

Month and year	Relevance and quality of design	Efficiency of implementation to date	Effectiveness To date	Impact to date	Potential sustainability
April 2006	• Relevance, as highlighted in previous reports, is still excellent and further improved by the prospect of a new Forest Policy at state level, untouched since 1951, which offers HCFP a chance to incorporate key inputs. • A 3rd addendum came into effect in May 2005, endorsing the new target of 330 villages. • Consistent with the addendum, a new OWP was recently approved by the EC delegation. • The logframe was last revised in April 2006 and is about to be approved, along with the 8th AWP. • The quality of design is good, the intervention logic is straightforward but there is still room for improvement.	• The project now enters its 8th year, which marks the effective deconcentration of HCFP and the beginning of the exit strategy. The intervention is characterised by a sustained discipline in day-to-day implementation and a rare determination to pursue the overall objective. • It is a project with a demanding Project Director and a committed technical assistance, whose ability to report and disseminate information about the project's achievements, strengths and weaknesses is remarkable. • To date, most quantitative result indicators have been achieved. Common property woodlots now cover 9,400 ha against a target of 9,500 ha in OWP, with a 75% survival rate for year 1 plantations. Severe frost in South-western Haryana will affect this year's survival rates. • On private lands, plantation targets are mostly surpassed, partially compensating for typically lower survival rates. • 17 water harvesting dams have been constructed (new target is 19) and 18 water ponds have been rehabilitated, against a target of 27. • The capacity of the FD has increased due to training, with a growing sense among HCFP staff that quality of results is now what matters. • According to a 2005 assessment, 67% of the 335 existing VRMCs have improved their capability to manage community forestry activities, including 22% mature and 45% active VRMCs. • A comprehensive assessment of the project-initiated SHGs shows 30% possess the skills to carry on without external assistance, except for record keeping.	• The Project Management's focus on quality paid off and field visits confirm a tremendous leap forward, over the last 2 years, in the capacity of VRMCs and SHGs. As a result of HCFP, tree cover in 330 villages increased to 40% on common land, up from 11% before the project, and most plantations are healthy: with growing awareness of collective assets and associated potential income, and better understanding of their role *vis-à-vis* the whole community. • VRMCs are developing a sense of responsibility, translating into mechanisms aimed at reaching marginalized members including women and the landless. • Construction of a water harvesting dam definitely favours farmers, with an average 170% crop production increase in the 2nd year of irrigation. • A mature VRMC is more likely to handle water distribution on its own and make sure the landless are entitled to their share of community water, which they can sell at a profit. • Encouraging stall-feeding while allowing intercropping or grass cutting in common woodlots is another way of reaching out to the poorest, while maintaining necessary social fencing. • Women gained tremendous empowerment due to SHGs: they are now sufficiently confident to cast their own agenda and engage into productive activities and sensitive social causes, besides environment related concerns. Group savings benefit the whole family and people claim community cohesiveness has improved.	• Potential impact is good. • HCFP is building a solid ground on which communities and the FD can grow together. Improving the environment, the objective, is a long-term process with impact likely to be felt only after the project ends. • VRMCs are selling the grass growing under tree cover, with income spent on village infrastructure, in coordination with Panchayat institutions. • The Project Management is aware of the project's impact on the wider society: responding to needs expressed by communities • Regarding livelihood option, it has published a booklet on all available governmental schemes. • The JBIC funds a forestry project across 800 villages of Haryana, taking after HCFP's methods. • The visibility of the EC's role in HCFP is good but hardly goes beyond Haryana. As recommended by last MR, it is time to spend the 140,000 Euro earmarked by the EC for visibility.	• Potential sustainability is very good. • Further strengthening of VRMCs capacity – a key component of HCFP's exit strategy is needed, with a focus on their ability to mobilize financial resources. • The Project Management has successfully lobbied for the draft Forest Policy to include a provision setting aside at least 25% of the revenue from the final harvest of common woodlots for replanting by the VRMCs. • The decision to have HCFP evaluated according to the Kyoto protocol, to review the possibility of applying the Clean Development Mechanism, goes in the same direction. • SHGs also need additional coaching and training. But as women leaders are emerging and SHGs are pooling to form cluster organizations, the energy they release can be harnessed to support more long-term initiatives in favour of the environment.

Month and year	Relevance and quality of design	Efficiency of implementation to date	Effectiveness to date	Impact to date	Potential sustainability
September 2007	• Relevance, as confirmed by project achievements is still excellent. The interventions should contribute significantly to the improvement of natural environment as also to poverty alleviation, an overall objective to be taken into account at the time of final evaluation. • Project duration and a good capacity of design adaptation represent two key factors of success. • All cost benefit analyses show that time has been an important element for capacity building aspects. • The strong focus on women SHGs without real targets in the initial stages proved to be essential for project effectiveness. Further, necessary impact studies and capacity assessments have been carried out and the findings are used to define the exit strategy. • Special emphasis is correctly put on benefits for disadvantaged and landless people in order to maximize the impact on poverty alleviation. • The recommendations of the two earlier monitoring missions on the logframe have been considered. The last version (June 2006) is good and considerably better than the initial one. • There is no ownership of the logframe by the PMU and it is not really used for the preparation of different project reports, which hides the logic of intervention and project visibility.	• The project is now implementing the work-plan of the 9th year with the Technical Assistance contract extended up to June 17, 2008. Plantation activities have been stopped and emphasis correctly put on consolidation of capacity building results. • Efficiency of the project has been excellent in four components, namely: (C1) HFD capacity building, (C2) Increased Capacity of village communities, (C3) Common property resources improvement, and (C4) Farm Forestry enhancement on private lands. • (C1) – Community Forest Management (CFM) approach has been widely promoted; staff training, exchange of information and production of 25 manuals on CFM contributed to important changes in the Department. • (C2) – The project has been implemented in 337 villages with 328 VRMCs operating. 180 SHGs in 101 villages representing a total of 2,150 women benefit from skill training, with 1,600 women promoting economic activities like vermi-composting, milk production and/or collection, organic farming, tailoring/embroidery, etc. • (C3) – The target of planting 8,340 ha of common woodlots has been achieved, with survival rates of 65-75%. Water harvesting dams constructed in 19 villages as targeted; 5,040 ha of sand dunes have been rehabilitated. 17,000 tree groves (1,300 ha) planted and 28 village ponds rehabilitated. • (C4) – Private plantations raised on 17,470 ha including 6,945 ha of poplar. Survival rates for (i) farm forestry (after one year) increased from 40% (2000) to 60% at the end of the period; (ii) poplar survival fell from 61% to 22%, but is now above 50% following market prices, which shows market dependence of this component . • The survival rate of fruit trees, distributed to 36,000 households in still low (less than 30%), but last distribution with payment for seedlings improved this rate. • The good results achieved to date are because of (i) stability of PMU staff and excellent cooperation between HFD and TA team, and (ii) a strong emphasis on studies, impact assessments and the correct use of feedback.	• The project villages represent around 115,000 households, and meetings with different target groups show high effectiveness. HFD appreciates this shift from a repressive to participatory approach. • VRMCs have started to organize the use of common woodlots (intercropping, fodder grass etc) and part of the micro-plans have been completed through links with line departments. • The last VRMC capability assessment shows a slight decrease in performance compared to 2005, though 20% were rated as “overall good” and only 16% as “weak”. • Women SHGs showed a significant improvement in their capabilities with 59% rated as “overall good” and only 3% as “weak”. • Women’s empowerment was impressive in savings and credit activities, micro-enterprise development, increased self confidence and their participation in village life including various environmental aspects. • Landless people obviously benefit from the project, especially through livestock activities, fuel-wood and creation of jobs. • Tree coverage in project villages on common lands increased to 34% (average) against a target of 30%.	• The project will have a significant impact on environment with about 32,000 ha brought under plantations, more than 1,000 ha of new irrigated land and village empowerment for natural resource management. • A recent impact study shows a substantial decrease in environmental problems identified in 2000. There is also evidence of first effects on incomes and poverty alleviation and even on the reduction in migration (through better conditions for livestock). • These incomes should increase with tree crops from private and common lands. Incomes from irrigated lands have been well documented with good monitoring of margins, labour etc. • The impact on Forest Policy and the definition of new projects is also important. • An afforestation project for carbon trading is being prepared by tree-growing farmers under the Kyoto Protocol. If approved, it will be the first small-scale afforestation activity under this protocol. • The budget earmarked for visibility (140,000 €) has not yet been used. The mission to define a “visibility strategy” supposed to start in May 2006 is expected in following months only.	• The SHGs show a good chance of sustainability. As women have a high commitment and the formation of 13 cluster associations, who will run a system of training vouchers covering 80% of future micro-enterprise training costs, constitutes a good exit solution. • Good participation of farmers in watershed investment, and the payment of irrigation water should guarantee the sustainability of irrigation schemes, at least for normal repair of dams. • VRMCs represent key elements for sustainability as they carry on with resource management in villages, in particular replant common land after tree harvesting, though some VRMCs still need to be consolidated. A Government order earmarks 25% of income from harvested woodlots for replanting by VRMCs. • Plantations have been established by HFD, subsidies granted according to survival rates and watchmen paid by the project. • Further, VRMCs did not organize a planning excise after the initial micro-plan and they do not yet have a clear understanding of their future role. This could make the post project phase more difficult and a strong emphasis on their future role is necessary.

Conclusions of European Commission (EC) Monitoring Reports

Month and Year	Relevance and quality of design	Efficiency of implementation to date	Effectiveness to date	Impact to date	Potential sustainability
April 2000	B	C	C	C	C
June 2001	C	C	C	C	B
December 2002	B	B	B	B	B
May 2003	B	B	B	B	C
March 2004	B	B	B	B	C
March 2005	B	B	B	B	B
April 2006	B	B	A	B	A
September 2007	B	A	A	A	B

Note: A = Very good, B = Good; C = Problems; D = Serious deficiencies

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