



Community Forest Management Manual

Practical guidelines for forest protecting communities of Orissa



Regional Centre for Development Cooperation



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Preface

The most significant aspect of community participation in forest management in Orissa is that the communities on their own initiatives have been protecting and managing the natural forests located close to their villages irrespective of the legal status of the forests which is popularly known as Community Forest Management (CFM). Forest protection and management by local communities have not only augmented forest resources to meet the growing biomass needs but also to ensure the livelihood security of millions of tribal and other forest dwelling population. In addition to this a lot of social, cultural and developmental functions have been performed within the scope of the community-based forest management systems. Orissa was the first State in the country to officially involve local people in the protection of natural forests—it did in August 1988, even before the declaration of the historic National Forest Policy of December 1988. What the State Government did was to allow the local communities to protect the Reserved Forests surrounding their habitations and in return to grant some concessions in usufruct sharing.

Management of forests sustainably is becoming a challenge with the gradual rise in population, decreasing forest cover and depletion of natural resources. Over exploitation of timber alarmed the forest managers and policy makers and compelled them to ban or restrict timber harvesting. Similarly the increasing demand of NTFP globally leads to over exploitation of NTFP that further leads to dwindling and adversely affecting the biodiversity and ecology. In the whole process the forest dependent communities continues as sufferers. In such situations these age old CFM institutions in Orissa are gradually growing to a stage where they could be big players in whole debate of sustainable management of forest resources and climate change. The present effort of developing CFM manual or practical guidelines for CFM is quite important in the sense of understanding the inter-linkages between the forests and these communities. The options and indicators for management of forest which have been prescribed in this book is based on the whole idea of demystifying scientific forestry and that has been possible through blending traditional knowledge with modern form of forest management.

Acknowledgement

We are able to develop this manual after 4-5 years of constant interaction with the forest protecting communities in different parts of the state. While undertaking this programme number of forest protecting communities, institutions, forest officials, local NGOs etc generously contributed their inputs and thoughts. Their valuable information especially on forest protection and conservation, institution management, conflict resolution, sustainable harvesting etc are quite special for us and will be treasured. We sincerely acknowledge the financial support that has been provided by Christian Aid without which it would have been difficult to bring this publication. We gratefully acknowledge all the people and institutions we met through the programme. Our special thanks to all the DFOs of the respective forest divisions where the programme focused. We thank Dr. Mihir Jena who has contributed a lot for developing the contents of the manual. We also take this opportunity to express our deep sense of gratitude to the technical institutions like IIFM, TFRI etc which have been helpful time and again in providing technical guidance.

In undertaking a mammoth exercise as this book, if we have missed out acknowledging the support of anybody or any institution and omitted references inadvertently, we request your apology.

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Introduction

Forest, forest products and forest-based activities often play important role in life support system of the millions of forest dwellers and tribal people. Forest provides an income for people to fall back on during the emergencies. The share of forest produces especially the NTFP in the family and local economy varies from 20-60 per cent depending on the type of forest and access to market. Besides the tangible benefits, forests also provide various other intangible benefits like social and cultural benefits, various environmental benefits like soil and water conservation, and carbon sequestration.

Despite the importance of forests in livelihood security of millions of the tribal, the rich resources of the country which once upon a time were owned and managed by the local population especially the tribal, are no more remain as the resources of nature. State exercised its control and authority and apparently established monopoly over its usufruct and management. During 1860s the British government intended to manage forest for earning revenues but the major obstacle was the tribal population living within the forest. In order to dispose them of the forest and change the natural entitlement over the forest, necessity of the law was evident and hence the Indian Forest Act, 1865. This law introduced classification of forests and their reservation, which suddenly alienated the indigenous people from the forest. During the colonial regime in order to maximise the revenue of the government; management of resources based on the 'so called' scientific knowledge was introduced. Policies and programmes were developed for 'settlement' of land and forest resources and thus all these resources became State property. The colonial government used the cover of laws and rules for advancement of imperial interests. Gradually the forest areas came under the strict control of the state and various methods were adopted to allure local people to move away from the forest.

The process of reservation and scientific management of forest led to such a situation that the tribal communities and their institutions all of a sudden were excluded from the management of their 'local' resources. The monopoly of scientific knowledge and the authority of the State became supreme and preceded over the traditional knowledge and natural and communal rights of resource dependent/managing communities. Tribal living within and around the forests were granted limited usufruct rights, over the forest resources who virtually protected the resource base. In many areas tribal communities revolted against the British government and they did not allow the state to take away forest from them. Some of these areas were categories as excluded areas and partially excluded areas and after the independence became sixth and fifth schedule areas. In these areas the colonial government could not intervene in the social, cultural, political and economic life of tribal people.

After independence the emergence of 'Welfare State' virtually created a pattern of dependency of the people on the State. People's initiatives were taken over by the State as the biggest welfare institution. In the name of welfare and development the State entered into all walks of life of people. Faulty policies and poorly managed programmes created unequal ownership of resources and differential consumption patterns, and ultimately unhealthy competition for resource use leading depletion of the resources. From a state of self-sufficiency people moved to dependency on the State and the State legitimised its control over people and their resources.

In the recent years forest management in India has undergone a sea change. The concept of forest management has been broadened to include economic, environmental, social and cultural dimensions, in line with the National Forest Policy. The new National Forest Policy (NFP) passed in 1988 stressed on managing forests to meet the subsistence needs of the rural, tribal and Scheduled Castes (SCs) population in partnership with forest fringe people - especially women, customary right holders and tribals. Following the NFP, the Ministry of Environment and Forests (MoEF) enacted the first set of guidelines on participatory forest management in India, popularly known as Joint Forest Management (JFM). JFM envisaged achieving the twin objectives of (i) maintaining ecological sustainability by regenerating and managing degraded forests with people's participation that essentially involved sharing responsibilities related to protection and silvicultural management and (ii) ensuring social justice through designing an institutional framework that ensures tenurial security, equitable distribution of power between partners and a fair share in forest usufruct. Joint forest management made rapid strides throughout the 1990s. As Saxena (1999) notes, India's JFM program provides a remarkable example of institutional innovation and represents a major effort over the previous few years to make this policy work for both forests and the people. Joint forest management received significant financial support estimated at US \$ 1 billion from bilateral and multinational donors in the 1990s (Dyson *et al* 2002). In between, central guidelines on JFM were revised twice in 2000 and 2002. To consolidate the effort, the Planning Commission called for universalisation of JFM to cover all forest fringe villages during the 10th Five Year Plan period and provided financial support of Rs. 1, 181 crores under a new scheme titled National Afforestation Programme. Till March 2006, about 22 million hectares of forests were protected by an estimated 1, 06, 482 JFM committees in 29 states and the Union Territory (UT) of Andaman and Nicobar Islands (Pai *et al* 2007). However, not all of these states and UTs adopted JFM at the same time. In Orissa and West Bengal, for example, formal policy recognition for participatory forest management came towards the end of the 1980s preceding the central guidelines on JFM.

In Orissa the involvement of people in forest management dates back to the pre-independence era in several ex-princely states in Orissa. In response to dwindling forest produces, by late 1980s, an estimated 3000 to 4000 communities popularly known as Community Forest Management (CFM) groups were providing effective protection over about 10% of the state's

forests (Human *et al* 2000). Presently, from a rough estimate of NGOs and federations of forest protecting communities, there would be more than 10000 village groups protecting nearly 2 mha of forest. In 1985, Orissa for the first time acknowledged people's role in management of forests through enacting the Orissa Village Forest (VF) Rules, three years before the NFP. However, this Rule was only restricted to village woodlots grown under Swedish International Development Agency (SIDA)'s Social Forestry Project. In August 1998, the government came out with a resolution to involve the community in regeneration and management of degraded reserve forest. This was the first time government of Orissa had initiated the process of joint management of forest resources in the state. In lieu of the efforts towards protection and conservation, certain bona-fide needs of the communities were to be met from the forest. In response to this resolution, the forest department constituted Village Forest Protection Committees (VFPCs). The VFPCs were assigned the responsibility for protection of forest against fire, grazing, illegal felling of trees, theft etc. The DFO was entrusted with the task of allotting forest areas to VFPCs and legally registering those. In October, the resolution of August 1988 was modified to bring in a distinction between official and non-official members in the VFPCs. The scope of this resolution was enlarged in December 1990 to include protected forests. It was laid down that village level forest protection committee should be constituted by convening a meeting of the concerned villages. The resolution involved the community in the protection of both reserved and protected forests. In July 1993 a comprehensive resolution for involving communities in protection and management of forest was bough in and for the first time the government used the term Joint Forest Management (JFM). In 2008 the state government came out with another set of guidelines (which are yet to be finalized) to enlarge the scope by including wetlands, mangroves and Protected Areas (PA) in JFM. For the first time the state has realised that people living near the PA, while deriving little benefit from conservation, have paid enormous costs in terms of lost access to their life support system.

However, PFM policies have taken a conservative view of people's participation with the passage of time. The 1993 resolution, which was the first resolution in Orissa after the passage of central guidelines on JFM, stipulated people's participation only in degraded forests instead of PFs and RFs referred to in earlier ones. Even eight years after the passage of MoEF's policy recommendations and despite extensive research showing positive ecological, institutional and socio-economic impact of CFM, the state has not yet recognised self initiated groups as a legitimate form of PFM. The forest department seems to view CFM groups and their federations as a challenge to the established order and would prefer to absorb them in the JFM fold rather than as an opportunity to secure forest cover. CFM groups, on the other hand, see JFM and the promised benefits as a dilution of what they are already exercising under CFM.

All those programmes whether joint forest management or community forest management are not able for an efficient user-friendly and objectively verifiable tool for assessing the

direction of change towards sustainable management of forests. This book is an initiative to develop some practical guidelines or a manual for Community Forest Management in Orissa.

Purpose of the Manual

In the context of Orissa, community management of forests is by and large limited to protection activities by strengthening watch and ward which is one aspect of forest management. Looking at forest management holistically it becomes clear that there should be appropriate social set up and technical know how with the people to manage forests to meet ecological and economic goals. That is in the background of this effort to prepare a manual. This manual is basically designed as a practical guide for the communities of Orissa who have been involved in forest protection activities. It will also help them in managing the forest in an effective way. The manual has covered certain important aspects of forest management suiting to the need and requirement of the groups involved in management of forests at community level. While developing the manual the criteria and indicators developed for sustainable forest management by IIFM, FAO etc has been considered to the extent possible. Efforts have been made to document indigenous technical knowledge involved in forest management and blend those with modern form of forest management to come out with simple forest management options and indicators that could be used by the forest protecting communities in Orissa.

Methodology used during preparation of the manual

For developing the manual rigorous field study was carried out in eight villages of for districts such as Krushna Prasad and Harekrishnapur in Dhenkanal district; Dubulabeda and Sunamara in Mayurbhanj district; Bakti and Kantapali in Bolangir district; and Subai and Khariguda of Koraput district. The study was conducted to observe and understand the process followed by the communities in management of forest in their areas, to document best practices and to understand the constraints and difficulties in practicing forest management. During the field study importance was laid upon their way of managing local institutions that determined management goals. The main criteria for selection of the study area were;

- Villages protecting forest for at least 10 years and local forests in good condition
- Higher level of dependency on forests
- Villages willing to give time to help in developing such manual.

Two villages in each district were selected following purposive sampling method. Structured and semi structured questionnaires were developed and administered in the village for collection of information. In each village a local volunteer has been appointed to document the activities performed by the villagers in forest management activities. The volunteers worked closely with the villagers and observed physically the forest protection activities, organized discussions and meetings. The volunteers helped the research team in technical activities like estimation of richness and abundance of species, productivity of species during forest mapping exercise.

Sources of data

Primary

- Forest Protecting Communities
- Forest officials at forest beat, range, division and state level
- PRIs members close to the area
- NGOs/CBOs working in the study area

Secondary

- Books, journals etc.
- Study/research reports
- Newspapers
- Libraries
- Manuals developed by other research institutions

Tools of data collection

Participatory data collection method was followed to collect information and find direction for the manual. Mostly Participatory Rural Appraisal (PRA) method was followed and exercise conducted at the village level for collection and processing of information. The following tools were used for collection of data from various sources:

1. Library survey
2. Structured and semi-structured interviews
3. Explorative methods
4. Mapping and diagramming
5. Small and large groups discussions
6. Participant observation

Areas of research/process documentation

1. Inventorying and mapping of forest resources
2. Identifying extent of dependency on forest, carrying capacity of forest, regeneration status etc.
3. Assessing the threats to forest, wildlife and biodiversity
4. Projection of need of the community and in the area
5. Issues and challenges in forest protection and management
6. Documenting traditional practices followed for harvesting and managing NTFP
7. Initiatives for fire management, wildlife management etc
8. Institutional issues and benefit sharing
9. Resource mobilization and conflicts management



Perspective for Community Forestry Manual

Background

There are around 29000 forest fringe villages in Orissa which directly or indirectly depend on forests both for income and subsistence. In Orissa, in spite of strong involvement of a sizeable number of villages in forest protection, conservation and management the forest department personnel raise doubts if they alone would be able to manage the forests without the intervention of the department. Indirectly forest department has been able to create a dependency syndrome at the village community level. This is evident from the observation that most of the JFM committees in the state are dependent on the forest department for their daily activities. Though the decentralized policy of the government has pointed the joint role of the forest department and the communities in managing forest yet it is the communities who play the key role in protection activities. A good example of co-management of forests is yet to be found out in the state. While forest department is of the view that people can only protect forests, the communities counter this view believing that they would be able to successfully manage the forests if their capacities are built in that direction.

Needless to say, there is a growing recognition worldwide that sustainable forest management necessitates a meaningful involvement of forest communities. Examples from different part of the nation reveals that due to several reasons, over the years, vast areas of degraded natural forests have been created. High degree of social disruption and conflicts between rural communities and forest department is a consequence of forest degradation and the consequent crises of resources. While communities generally have few or no formal rights to these public lands, they are often driven to exploit them – further leading to progressive degradation. These areas are targeted, as it happens, for extensive replanting with the introduction and establishment of fast growing timber and pulpwood species but given the cost incurred on various aspects of plantation, it seems impossible to reclaim such vast patches of degraded forests through plantation and afforestation activities.

Foresters, scientists and social scientists are with no two opinions that degraded forests could regenerate rapidly if protected. In India it is estimated that 30 to 50 million hectares of disturbed natural forest could experience significant increases in biomass and biodiversity if strategically protected and managed. Communities living in or near natural forests could protect them if clearly authorized by government, providing the economic returns would compensate them for their opportunity costs. Recent experiences with such programs from a number of Indian states demonstrate that FDs can successfully develop management agreements

with communities, which benefit both parties and result in rapid increases in biomass, genetic diversity, forest productivity, and more equitable resource distribution.

Progress in establishing participatory management systems and observation of their early replication effects in west Bengal, Gujrat, Orissa and other Indian states encouraged the national ministry of Environment and Forests to pass a new national policy in 1988. The policy notes, 'Forests should not be looked upon as a source of revenue', but as a 'national asset to be protected and enhanced for the well-being of the people and the nation'. One prime component of the policy mandates that, "the people will be actively involved in programs of protection, conservation and management of forests". The document further states that non-timber forest products, should be protected and improved and their production enhanced" to generate employment and income for forest communities. The policy, in a nut shell, spelt out the broad objectives in three lines in order of priority as

- Conservation and biodiversity
- Meeting local peoples' needs for forest products
- Supply of commercial requirements to industry and other non-local users

To achieve these objectives, the policy supports the participation of local people in planning and managing government forest resources through participatory forest management. Further, in June 1990, the Government of India passed a significant resolution providing more specific guidelines regarding the formation, functioning, rights and responsibilities of community forest management groups. It specifies sharing arrangements for village forest committees that if they successfully protect the forests, they may be given a portion of the proceeds from the sale of trees when they mature, as well as non-timber forest products for subsistence use.

A series of recent state government policies or orders supporting joint forest management (JFM) have created new opportunities to respond to decades old conflicts between communities and FDs. By moving from conflicts to collaboration, a number of communities and state FDs have made rapid progress in establishing functional protection systems which have facilitated natural regeneration and dramatically increased forest productivity. A great diversity of community forest management groups now exist throughout India; among others, these include: the legally sanctioned Swayam forest groups of the Kumaon; the forest protection committees of West Bengal; the Hill Resource Management Societies of Haryana; the village forest committees of Uttar Kannada, Karnataka; and the informal, indigenous groups operating in Orissa, Karnataka (Sagar District), and Bihar (Hazaribagh District).

While new policies and programs represent an historic opportunity to shift from management practices of the 19th century to newly adapted systems that may better respond to the social and environmental needs of the 21st century, many challenges remain. India's social, cultural, and ecological diversity requires that emerging local management be tailored to respond to prevailing problems and opportunities. This requires an understanding of vegetative conditions,

local leadership and institutions, and the importance of forests to the local and regional economy. Viable management partnership need to be based on a solid understanding of forest use practices and dependencies, balancing ecological and economic objectives to benefit both the participating village families and the Forest Department.

Site-specific social, economic and ecological factors interact to provide both opportunities and limitations on the type of management options that are possible. The rate of regeneration and ecological sustainability of the forest is influenced by a range of biological conditions including species composition, prior utilization history, soils and climate. Participating FDs and communities require greater institutional capacity to make collaborative forest protection activities succeed, and finally, the economic returns from protected, regenerating forests must yield sufficient income to sustain the management activities over time.

In order to devise management frameworks and implementation procedures for community forestry it is important to understand the biological and economic aspects of forests as well as the existing institutional capacities to effectively handle management related matters. Field studies help producing vital information basing on which management frameworks may be developed.

Forest resources of Orissa

Orissa accounts for 7.38% of the total forest cover in India and occupies the 4th position next to MP, Chhatisgarh & Arunachal Pradesh in terms of coverage. The forest cover stands at 48374 sq km., only 31.06 % of geographical area of the state, as per state forest report of Forest Survey of India (FSI) in 2005. Out of this very dense forest accounts for 538 sq km, moderately dense forest accounts for 27656 sq km and open forest 20180 sq km. Out of this Reserve Forests account for 26,349.67 sq. km, Protected Forests 31,785 sq. km and 12.29 sq. km of forests are under private ownership. There is a fair amount of confusion regarding forest cover in the state. Different government officials and authorities quote different figures for forest cover and figures vary between 37% to as low as 13% of the geographical area. FD till now goes by legal status of forest in official publications or documents. The state FD questions the authenticity of FSI figures as it alleges that the later had not involved field officials during ground-truthing of satellite imagery. The forest area of the state underwent a decline from 1981 till 1993-94. From 1993-94 till 1999-2000 the area under forest cover shows an increase, in the category of open forests. Increase in open forest also could be at the expense of the closed forest. Another cause of worry is the real status of 'forest area' that is not under forest cover.

The forests are rich in both timber and non-timber forest produces (NTFP). According to classification of forest based on composition, 30 per cent belong to Sal (*Shorea robusta*), 27 per cent bamboo (*Dendrocalamus strictus*), 3 per cent teak (*Tectona grandis*) and the rest mixed. Important among other timber species are Piasal, Asan, Bandhan, Haldu, Kurum,

Gambhar, Sisoo, Jammu, Khair, Dharua, Kusum, and Champa etc. The major forest types in Orissa is as follows:

Northern Tropical Semi- Evergreen Forests: This is found in areas nearer to seacoast as well as on plateaus above 700 metres high particularly in moist areas. The areas include lower hills and villages of undivided Mayurbhanj, Keonjhar, Cuttack and Puri districts. The main species of these forests are - Sal, Arjun, Mango, Champa, Mesua etc.

Northern Tropical Moist Deciduous Forests: This type occurs in areas similar to semi evergreen forests with lesser rainfall and humid conditions. They cover most of the province excluding parts of Western and Southern Orissa. Sal is the main species, other associates being Haldu, Kendu etc.

Dry Deciduous Forests: This covers areas where climatic conditions are drier than moist deciduous forests. This type of forest is being found in parts of the Western districts as well as undivided Koraput. These forests contain some natural Teak and Bamboo.

Littoral and Swamp Forests: The trees in these areas are evergreen, especially found mostly along Bay of Bengal in the river estuaries.

Protected Area

Orissa has rich wild life both in variety and abundance. Among the wild animals found in the state - Elephant, Bison, Sambar, Chital, wild Pig are common amongst the herbivores found in Orissa forests. Nilgai, Barking Deer, are also seen in some places. Among the carnivores, Tiger (Royal Bengal), Panther, Bear, Hyena, wild Dog, and Jackal are found in the state. Wild Buffalo, Chousingha (four- horned antelope) and Black buck are considered as rare species and are found in one or two pockets only. A large number of Lizards and Land and Water Monitors are also found. Orissa has all three types of Crocodiles - Gharial in the delta of the Mahanadi, Brahmani and Baitarani; Estuarine and common Indian Crocodile are found in the rivers Brahmani, Baitarani, particularly in river Dhamara and creeks of Bhitarkanika forests.

10.37 per cent of the state's forest area is under the protected areas, which is about 5 per cent of the total geographical area of the state. There are 2 National parks (including the proposed Similipal), 17 sanctuaries, 1 marine sanctuary (for Olive Ridley) and a game reserve (for Black bucks in Bhetnoi). Similipal, one of the earliest sanctuaries and finest Tiger Reserve situated in northern Orissa was notified in 1973 and covers an area of 2200 sq.km. Nandan Kanan Zoological Park, famous for its white tigers is situated about 12 km north of Bhubaneswar It is located in a reserve forest undulating in nature with shrubs and middle sized trees and over looking a lake which ultimately merges into a marshy swamp and Paddy fields.

Management of Forests

Policies, Laws and Rules

Scientific management of forest in Orissa apparently started during 1883-1884, when the state was part of lower province of Bengal. The civil department of the provincial government then was managing forests. The whole state was under one forest division. Both Bihar and Orissa were under one Conservator of forests, head quartered at Darjeeling. Forest blocks in Angul were the first to be declared as reserved forests u/s19 of the Indian Forest Act, 1882. The policy of the then government was to bring more and more forest areas under Reserved Forest and exercise control over the forest.

In the post-independence period the forests in Orissa are managed under the mainframe forest law i.e. Orissa Forest Act, 1972. Prior to that the forests in south were being managed under Madras Forest Act of 1882 and forests in rest of Orissa under the Indian Forest Act of 1927. Various acts and rules have been formulated in the state to facilitate management of forests and forests produces, most of which are listed in the next page.

- The Orissa Forest Act 1972.
- The Orissa Kendu Leaves (Control of Trade) Act 1961.
- The Wild Life (Protection) Act 1972.
- The Forest Conservation Act 1980.
- The Orissa Forest Produce (Control of Trade) Act 1981.
- The Wild Life (Protection) Rules 1974.
- The Schedule of Rate of Forest Produce in Orissa Rules 1977
- The Orissa Timber and other Forest Produce Transit Rules 1980.
- The Orissa Forest Grazing of Cattle Rules 1980
- The Orissa Village Forest Rules 1985.

45 per cent of the forests are Reserved Forest (RF), which are under the control of the Forest Department and nearly 54 per cent of the forests are Protected Forests (PF) both demarcated and undemarcated. The PF is being managed by the Forest Department but the land is still under the control of the Revenue Department. Village forests accounted for a negligible 0.04%. Woodlots raised under social forestry projects in some villages were later declared as Village forests. Inadequate efforts have been made by the government to legally notify existing Protected Forests under Orissa Forest Act of 1972 and develop Operational Rules to manage the Protected Forests. Till execution of the Forest (Conservation) Act, 1980 most of these forests were in a confused state of management leading to encroachments and deforestations. Significant portion of the PF were diverted for non-forestry purposes without knowledge of the forest dept. The real status of the huge chunk of undemarcated PF is still unknown to the Forest Department.

The working plans are the important documents/guidelines for management of forest in each territory forest division of the state. In many divisions the tenure of working plans has been over and the new working plans once prepared could give the directions of the government for management of forest.

In the context of NTFP management the state has much clearer policy now than earlier to manage its NTFP. Following the prescriptions of PESA (Provisions of Panchayat – Extended to Scheduled Areas Act 1996) and state confirmatory acts on Panchayati Raj of 1997 the government has declared its NTFP policy in March 2000 to empower Gram Panchayats to own, control and manage NTFP in their own areas.

Structure and functions relating to Forest Management

The Principal Chief Conservator of Forests heads the field organisation in the state that is in charge of the general forest administration. Forest organisation in the field operates mainly through 5 wings or departments i.e. territorial, wildlife, kendu leaf, social forestry project, and OFDC.

The forest department in the state was re-organised on 1st October 2003 with a view to bring the administration closer to the people. The entire area is divided into 281 ranges in 50 divisions (comprising of 37 forest divisions and 13 wildlife divisions and Nandan Kanan Zoological Park), in 8 circles. Consequent to this reorganization, there are 3 wings in the Forest Department namely; Forest wing, Kendu leaf wing and wildlife wing. Preservation and protection of forests, management of natural forests and plantations, preparation of working plan, research and training are the responsibility of forest wing. The wildlife wing, headed by a Chief Wildlife Warden, is responsible for management of wildlife, maintenance and development of sanctuaries, national parks and mangrove forests. The Kendu leaf wing/division headed by a chief conservator of forests looks after protection, production, and processing of KL through 19 divisions under 3 circles.

The Orissa Forest Development Corporation Limited is the sole agent of the Government in the disposal of several nationalised produce and one of the key responsibility is marketing of Kenduleaf. Since then it has taken up a number of forestry activities aimed to remove middle men and contractors and adopt sound scientific forestry practices in the collection, exploitation and marketing of forest products.

Govt. of India has started the scheme titled National Afforestation Programme (NAP) during 10th Plan period by merging four 9th Plan centrally sponsored afforestation schemes of the Ministry of Environment & Forests, namely, Integrated Afforestation and Eco-Development Projects Scheme (IAEPS), Area Oriented Fuel wood and Fodder Projects Scheme (AOFFPS), Conservation and Development of Non-Timber Forest Produce including Medicinal Plants Scheme (NTFP) and Association of Scheduled Tribes and Rural Poor in Regeneration of

Degraded Forests (ASTRP), with a view to reducing multiplicity of schemes with similar objectives, ensuring uniformity in funding pattern and implementation mechanism, avoiding delays in availability of funds to the field level and institutionalizing peoples participation in project formulation and its implementation. The scheme is operated by the National Afforestation and Eco-Development Board, Ministry of Environment and Forests as a 100% Central Sector/ Centrally Sponsored Scheme. In the participatory mode, the scheme is being implemented by involving two-tier set up namely the Forest Development Agencies (FDA) and Joint Forest Management Committee (JFMC) named VSS.

Conceptual Understanding of Community Forest Management

Community-based forest management is part of the evolving art of forest management. In general, the term “forest management” covers all planning and controls over forest resource use. It involves a wide variety of stakeholders, for example local resource users, relevant government agencies, NGOs and commercial resource companies.

Historically, forest management has been an activity of the State and its various agencies, established through constitutions, legislation and regulations that largely rejected local claims to forest resources. Professionals and bureaucrats lead these activities, deriving options for use based on economic, scientific and planning criteria. Decision-makers then determined use and management strategies through negotiations with the most influential parties in a wider political arena. The gradual globalization of the world economy has, in many areas, reinforced State claims to forest resources. In such instances, this has further facilitated the exploitation of forests by national and trans-national companies, to the disadvantage of local forest users.

In this process, management decisions sometimes excluded the involvement of communities that continue to be the users and de facto managers of forest areas and whose livelihoods depend on those resources. Too often, in the past, local stakeholders heard about planning arrangements and new management regulations only after those decisions had begun to affect their lives directly.

Over the past two and half decades, fundamental perceptions regarding the role, rights and responsibilities of communities in forest management have begun to change. Joint Forest management and Community-based forest management has consciously shifted decision-making away from centralized government towards local authorities and resource-user groups. The objective is to empower communities and resource users who have been marginalized from decision-making, so that they develop and manage their resources. This community-based forest management has been supported and driven, in many ways, by current global trends of democratization and devolution of authority. These trends are fuelled by growing recognition of:

- the limits to existing centralized decision-making systems;
- the necessary link between the provision of basic human rights and all sectors of development.

According to K.F. Wiersum, forest management should be considered to involve not only silvicultural practices, but all conscious human activities directed at maintaining its production capacity. It can best be defined as the process of making and implementing decisions about the use and maintenance of forest resources and the organization of the related activities. It refers to the total set of technical and social arrangements involved in the protection and maintenance of forest resources for specific purposes, and the harvesting and distribution of forest products.

This definition includes forest-use systems with a rather low degree of human manipulation, even practices without silvicultural management at all. Some see forest management with the conscious manipulation of vegetation to promote the maintenance and/or productivity of forest resources, (i.e. with silvicultural practices). In general understanding forest management would mean deliberately regulating rates of extraction of forest products in order to maintain a forest's productivity. Even hunters and gatherers, collecting wild flora and fauna in a regulated way, are not only users but managers of forests. Similarly, a sacred grove where the extraction of forest products is prohibited for the sake of forest-dwelling spirits can be considered a managed forest patch.

Forest protecting communities in Orissa, over the years, have exhibited a criteria of sustainability with one aim 'to protect and maintain forest resources for specific purposes' as against "reap and run" strategies. These communities do not generally try to create a homogenous stock of trees and hence manage forests in order to maintain a high degree of biodiversity. Doing so, they have tried to ensure steady supply of forest resources which are considered important for fulfilling their needs. These needs are often of material nature, but cultural and religious needs are also involved.

In their processes, controlled use and/or manipulation of forests for specific purposes without endangering the supply of the required forest resources is most remarkable. This is necessary features of forest management system. However, the degree of control and manipulation; the nature of purposes and needs; the 'total set of technical and social arrangements' involved; and the system for the distribution of forest products vary widely. There are instances that forests have enriched in biodiversity by human manipulation and degraded. Forests have expanded in size and have been reduced also. Manipulation results in change, but the nature and direction of change is manifold.

Community based forest management systems in Orissa show various degrees of manipulation and controlled extraction of forest resources.

1. By protecting selected trees, plants and animals, and/or by reducing competitors, the stock of wild species is manipulated. Such manipulation is largely based on material needs to promote the flow of required forest products (e.g. NTFP) and also to maintain religious and cultural beliefs. By controlling rate of extraction by clearly defined user groups, the quantity and timing of resource extraction has been regulated.
2. Protecting certain forest patches as a whole is another technique found in many areas to manipulate forests. In such cases, access to certain forest patches is highly restricted as in sacred forests. However, not every sacred forest is untouched and there are examples of high level manipulation in such areas.
3. The conversion of a forest into cultivable land as in case of shifting cultivation may be considered a high level of manipulation. During a clearing, usually selected tree species are not felled at all. However the original vegetation changes its composition in the area under cultivation during fallow periods and another type of forest replaces the original one.

Dominant practices of forest department exhibits that they tend to operate more on the medium and high level of manipulation, changing natural forests considerably. In contrast community based forest management systems operate on the first and second level of manipulation and only in rare cases on the third level, with the exception of communities practicing shifting cultivation.

The use of forest resources in forest-protecting communities is embedded in an economic system which is still partially oriented towards subsistence. Many forest resources are used directly for maintaining the livelihood of the people. However, there is a trend away from using forest products for self-consumption to selling forest resources. Pressure on local communities to earn some monetary income is growing and local communities may also be dependent on forest resources for cash income, from local markets. In any case, there is a direct dependence by local communities on their forest resources.

Community based management systems in most cases require a different type of decision-making based on different patterns of livelihood and other constraints. Open forests allowing good grazing for cattle may be preferred by pastoralists to dense closed forests with good timber. Artisans like potters will be mainly interested in a forest yielding enough fuelwood for their kilns, whereas farmers dependent on irrigated agriculture may be mainly interested in water retention capacity of forest vegetation. An additional degree of complexity at the community level is that there are different user groups or interest groups as in a multi-caste village of artisans, farmers, and cattle herders. In a specific local context a patchwork of different management systems handled by different social groups creates a dynamic process of socio-economic change.

Contemporary Forest Management Issues

Cases indicate that poor management of public forest lands is often tied to conflicts over resource rights and utilization that lead to unsustainable exploitation. Management systems are needed which can minimize social conflicts, utilize natural forests on a sustainable basis to maximize the flow of important products to communities, and generate income and employment opportunities.

In India, management problems frequently arise over resources that are in high demand and under increasing use pressures. In order to reorient forest management strategies to become more locally responsive and ecologically sustainable, certain generic problems and demands in forest areas will need to be addressed. Some of the most common forest management issues that lead to social conflict and unsustainable use are outlined below.

Fuelwood Headloading

In many forest communities in India, commercial fuelwood headloading represents an important source of cash for low income families. In addition, commercial headloading is a major cause of forest disturbance. Collectors tend to overexploit, not just because of their numbers, but also due to their methods of cutting and collection. Where headloaders have no usufruct security or incentives to harvest sustainably, fuelwood tends to be gathered intensively at the nearest open access site, over utilizing those resources until they are exhausted.



A complete ban on commercial fuelwood headloading would be nearly impossible to enforce, and would displace millions while causing major market shortages. Forest ecosystems can generate fuelwood sustainably, but varying production levels under different natural succession and silvicultural management conditions must be understood first. Community-based regulatory mechanisms also need to be established to control access and ensure that exploitation does not exceed sustainable levels.

Bamboo Basket Making

Increasingly in India, rural artisans face difficulties in obtaining a sufficient, high quality supply of forest produce and fair prices for their products. Of the total bamboo harvested each year in India, as much as one



third are used by hundreds of thousands of villagers engaged in bamboo cottage industries. Yet, production, supply, processing and marketing systems are often constrained by poor management, leading to lower quality goods, low productivity and low wage rates for collectors and producers. Participatory management systems are particularly tailored to address the needs of such forest-dependent user groups who require a stable and continuous supply of quality raw materials based on a sustainable harvesting system.

Livestock management

India possesses the world's biggest livestock population. Since 1950's non forest common property has decreased over 30%, placing additional pressure for fodder and grazing on forest lands. Overgrazing of livestock and excessive burning to promote grass growth are commonly seen as two of the major causes of disturbance to Indian forest. Grazing, however, does not always damage tree saplings, especially if they have reached a certain age and height. Controlled grazing may actually stimulate grass growth and increase the effective nutrient yield. Fire can also increase grass productivity, and in some cases, facilitate the germination of tree seeds.

The timing, location and intensity of grazing pressure on forest lands depends upon many factors, including the role of livestock in the agrarian economy and the availability of alternative sources of fodder and pasturage. One solution to forest and pasture land over-exploitation is to completely stop open grazing and shift to stall feeding. However, this strategy depends upon human labour to cut and carry fodder, and requires a strong community will to establish controls through fencing or patrolling, fines, and rules. In some parts of India, pastoral nomads migrate vast distances to traditional grazing areas and their practices and needs should also be considered in developing improved management systems.

In terms of fodder supply, successful forest regeneration may have the negative effect of reducing grass growth due to closure of the tree canopy. Hence, which grazing regime is best suited for a particular site will need to be determined by the interplay of ecological and socio-economic factors, local traditional and scientific knowledge, and the capacity of the community protection group to enforce a particular strategy for fodder production and controlled forest access.

Leaf Harvesting

Forests provide mulch and green manure for agriculture. If these nutrients were replaced with chemical fertilizers, it would cost crores of rupees and still not provide the organic materials so important for healthy soil composition. The use of green manures is especially important in hilly regions of Peninsular India as well as the Himalayas, where lopped leaves or leaf litter are often used as bedding for cattle and then converted into manure for use on the farm. Lopping leaves and branches to provide fodder to livestock during winter is also a common practice. The leaves of dozen of tree species are also collected for bidi making, leaf

plates, medicinals, and human consumption. In India each year, the Nation's rural communities collect millions of tones of forest leaves annually.

When nutrients and organic matter are continuously removed from the forest floor, at a certain threshold the forest becomes adversely affected. While heavy lopping may retard tree and shrub growth, some pruning may actually accelerate increases in stem size, foliage, and fruit and seed productivity. Ultimately, Forest departments and communities will need to improve their understanding regarding optimal harvesting and management techniques for sustaining valuable leaf production.

Commercial Timber

Over the past centuries, India's forest lands have generated a steady stream of timber profits, primarily to government, contractors and local elites. As the nation's forest lands have diminished in area and quality through growing use and development pressures, national planners and senior forest foresters have attempted to slow exploitation, culminating with the national logging ban of 1986. There is some agreement that the nation's natural forests will not be able to play the same primary role of timber and pulp supplier that they have historically, and that the source of these products must increasingly shift to private woodlots. At the same time under effective management regimes a sustainable yield of timber, poles and pulpwood is possible, especially to meet local needs.

While many forest areas possess working plans, they tend to be based on outdated or inaccurate data and often assume the goal of maximizing timber productivity and revenue generation. In areas where the FD has earlier established Forest Labour Cooperative Societies (FLCS), village members have lost employment opportunities as a result of logging ban, or are finding ways to continue their activities, causing further damage to the forest. FD staff need to work with community members involved in the timber extraction industry to reach an agreement on the structure of an effective management system. Sustainable timber management systems, however, will not be established until foresters and communities have better information regarding the viability of current extraction levels and its impact on forest regeneration, as well as timber supply and demand for both local and commercial needs. Since, current institutional management mechanisms frequently fail to ensure sustainable yields, new organizational arrangements need to be designed through participatory research with concerned parties.



Rational for Community Forestry

In many parts of India local communities have been managing forests around their habitation and settlements for several of their needs. The techno-economic pursuits of livelihood earning of certain communities, say tribals and forest dependent communities, in itself disseminate sound resource management practices. Many studies conducted on forest dwelling communities consider their forest management practices as a part of their socio-economic and cultural life, which are also scientific systematic and practical in many ways. In the changing conditions these community based forest management need to be more formalized better management of their livelihood and environmental resources, forests in this case, towards sustainability. The rationale for community forest management may be reflected thus:

- Rural people must have access to forest products to survive and earn livelihood
- The government is not able to manage all of the country's forests effectively
- Given the opportunity, people who use local forests can also manage the forest

Communities have acquired skills in certain fields and interests to protect and sustainably manage forests for future, and what they need is guidance and capacity building inputs in order to be enabling kind in community forestry. But before planning forestry for the communities, their understanding of their locality and resources should be thoroughly probed. The answers and explanations to the following questions may provide useful tips and leads for planning community forestry.

- What are the reasons for forest degradation?
- Who and what are responsible for this?
- Why the community became serious about conserving forests?
- Who benefits most from community forestry?
- Who is best suited to manage national and community forests? Why?
- What is main purpose of community forestry?

The community responses towards these may provide ample information to create ethno-history of forest situation in the locality, as well, the need and aspiration, perception and worldview, causes of forest degradation and concern of the community.

Local communities have been protecting and managing forests on their own accord. Before introduction of participatory forest management in India (for reference JFM) local communities at many places formed institutions at village level and developed constitutions in consideration to their village situations. But in most cases the institutions and their constitution emphasize upon protection activities for conservation of forests. The usual practice followed at many places is to appoint watchmen to safeguard forests from damages by neighbouring villagers or the such, limiting or restricting entry of villagers to forests, and sometime close the forest particularly in rainy season to facilitate regeneration. The practice of forest management in true sense has remained limited to protection only. While scientific

forest management is the need of hour, communities are often caught in a deficient situation to implement scientific forestry. What the communities need is a handy guideline for community forestry so that communities can plan and implement forest development activities in their area.

Rational for the new approach

The changed national forest policy and the principles underlying the government order on participatory forest management (joint Forest management and Community Forest Management included) necessitates a new approach to forest management. This, in some states like Kerala, is called client-focussed approach. The principle of client focus is that management activities concentrate on a partnership between the Forest Department (FD) and identified clients who are immediate, local users (otherwise called primary stakeholders), and that these clients are involved in the planning and management of forest. There should be a convergence of interest between the FD and the local community that will both protect the forest and ensure benefits for the community. This contrasts with a command driven or target focused approach, where management activities concentrate on giving instructions and meeting targets imposed 'top down' by decisions and procedures that are often distant from and out of step with the clients.

The need for an alternative to the traditional forest management and planning systems has been recognized by government forestry institutions worldwide as a response to changes in civic society and new forest management priorities. Means of bringing people more closely

Top – down approach in CF	Bottom-up approach in CF
<ul style="list-style-type: none"> • Facilitator defines the problems and select solutions • Facilitator’s contact with the villagers is limited to village leaders and household heads, mainly males • Facilitator introduces new ideas and teaches new skills to progressive villagers • In reality, benefits are gained by a few people which widens the gap between progressive community members and other interest groups. 	<ul style="list-style-type: none"> • Villagers define problems and possible solutions, facilitators only facilitate • Suggestions are taken from all sections of the community and solutions consider all men, women and interest groups. • Poor and other disadvantaged members of the community are consulted during planning process. • Villagers examine their own situations, problems and needs with assistance from the facilitator. • Facilitator facilitates discussion among villagers to help them identify possible course of action • Villagers get more informed choices most suited to their situations • Facilitator provides technical knowledge and skills to help villagers implement this action.

into the processes of managing government forests are being sought and developed considering local conditions and international trends.

What the manual intends

- The manual intends to develop a guiding framework for community forest management that can be used as a handbook primarily by village communities for effective management of local forests integrating conservation of biodiversity of forests and local livelihood towards sustainability.
- The manual would guide the community members as regards to their role playing and responsibility sharing in planning and management of community forests in an environmentally sensitive and socially equitable manner, including: developing and implementing an operational plan, and, reforestation, tending, protecting and harvesting their community forest according to the rules of their operational plan.
- The manual would be a step by step process book for ensuring rights of all forest products from local community forests; electing a committee to oversee day to day operations; monitor and evaluate activities and finances; modify operational plan as per requirement; fulfilling the obligations entrusted to the committee by the community; record keeping; accountability and transparency.

Village inputs for planning management procedures

Inputs from villagers are very instrumental in planning community forestry. Adequate information on the following are necessary to augment local peoples dependency on the forests, their participation in local forest management and how better they maintain balance between exploitation of forests by people and natural productivity of the forest.

- Who uses forests? When? For what?
- Conflicts over access
- Other problems
- Type of management mechanism required (e.g. forest user groups, committees)
- Who has authority for what
- Roles of FD, nurseries and community
- Forest protection and silviculture
- Community planting
- Harvesting, product pricing, marketing and distribution
- Sanctions and rules and Other matters

On the basis of information gathered from the local people on their dependency and interaction with forests, community participation and institutional management, future thrusts on forests integrating ecological and economic objectives, forest management objectives can be better spelt out.

Setting Management Objectives

Setting management objectives and goal is the most important task in strengthening community forest management. This in a way builds the perspective of forest management in the local context. Basing on the existing condition of the forest, the type and level of dependency on the forests by the local community, the kind and level of need driven manipulation of forests and above all the ecological needs management goal and objectives must be set.

In simple terms, this describes the broad purpose for which forest management activities are being carried out. It is possible to have several forest management objectives for one forest area depending upon the condition of the forest, economic and ecological requirements of the community. Management objective may be short or medium term addressing specific immediate needs of local communities or long term covering wider issues and themes relevant to the community as well as national requirements.

Long term objective

- To meet the basic needs of people for fuelwood, timber, fodder and other forest products on a sustained basis.
- To contribute to food production through an effective interaction between forestry and farming practices
- To protect the land against degradation by soil erosion, floods, landslides, desertification, and other effects of ecological disturbances
- To contribute to the growth of local and national economies by managing forest resources, developing forest based industries, and creating opportunities for income generation and employment

Medium term objectives

- To promote peoples' participation in forest resource development, management and conservation
- To develop the legal framework needed to enhance the contribution of individuals, communities, and institutions to forest resource development, management and conservation
- To strengthen the organisational framework and develop the institutions of the forestry sector to enable them to carry out their missions

The above points give a mention of how the community forestry practices and processes should be guided. The process should look back to the set goal and objectives to be successful without which there is every possibility of losing the track. Setting goals will enable the community to monitor and evaluate progress towards these goals once management has been implemented. Hence at the community level it is important for the institutions to set their management goal and objectives.

Goal setting can be stimulated by exercises in which the community is asked questions such as:

- What would we like to see as an ideal future for our community and our forests?
- What are the main elements of this vision?
- How do we rank these elements in terms of their importance?

How to decide management goal and objectives:

- Construct a historical account of the local forest, especially to understand what species and varieties the forest fostered
- Explore what sort of man-plant-animal interaction was there
- What was the pattern of dependency on such forests
- If there was any system at the village level governing resource use and conservation
- How the forest was degraded
- What problems have come up and what challenges it has posed
- Basing on such an enquiry of the past compare the present situation

Then decide

- What forest resources we need regularly and how much we extract
- Whether the present condition of the forest is able to provide to the need
- Whether the forest can continue to provide the needful if the resource extraction continues as is today
- Whether we need to conserve selected species in the forest or the biodiversity in its entirety
- Whether to form an institution and formulate legislation to control extractions and conserve the forest for future
- What are the most crucial needs and what mechanisms may be developed to meet the same
- The level and purpose of manipulation in the forest in consideration to meeting the demand of different interest groups in the community.
- How to equate the ecological and economic gains from the forest

The time factor

- Fix your management goal and objectives over a time duration
- If it is difficult at your level then consult a facilitator knowledgeable in forestry



Planning for Community Forestry

Community Forestry may be planned systematically in phases. The planning process depends upon the variety of information available on the local forests and the sort of interaction people have with forests. Motivation of people towards forest management and their participation in planning and decision making processes are crucial determinants of the effectiveness of an operational plan initially and the management plan finally. However, before planning the phases it is important to create a good database of the forest in relation to the demographic scenario and local economy. This is possible to be created through certain steps with good participation of the community and cross sections of the community such as interest groups, occupational groups, women and elites.

What is Resource

The term and concept of ‘resource’ emphasize that nature or, the environment are only significant if they consider human needs. Management of natural resources, in this context, is defined as the elaboration and organisation of measures related to protection, conservation, development and exploitation of community forests as well as the distribution of its benefits according to clearly formulated objectives.

The entire planning has to be focussed on two important aspects such as institutions and resources. Hence planning must give due emphasis on institutional management at the first point and then institution can take over the task of managing the resources at hand. All villages may or may not have formal institutions at their village level. In certain villages there are traditional informal institutions that are active in managing local forests. Whether there are formal or informal institutions active in the forest protection, motivation of the groups seem to be very important determinant of management practice. It is the village institutions and their motivation in a definite direction that can motivate the villagers to actively participate in the management of forests and other common property resources. Essentially, a planning process must start from motivation of the community.

What is Institution

The term institution generally points towards persistent structures which are ordering relations between people, thus gaining an evolutionary advantage. At the individual level institutions lead to certain expectations in human behaviour. Due to their relative persistence they are in a position to provide people with a feeling of security with regard to common pattern of meaning and social action.

Steps for planning

Motivation for planning

Community motivation is a pre requisite to planning process. This is the first step to community forestry planning. Local communities often depend upon external facilitators like forest department staff or NGO functionaries or the similar. It is a phenomena that the facilitator is often seen as the icebreaker who initiates a process.



- Find out a good motivator from the same community. It could be a village leader, a teacher, a social worker working with the community or a forest department personnel.
- The motivator should start with motivating a small group of potential motivators involving people from various sub groups.
- Points for motivation: existing state of local forests, the present crises, future potentials for development, setting the vision and agreeing to management objectives.
- Find out areas for concern and enlist major concerns for further motivation within the community and seek their participation in planning for forest management.

Considering the level of awareness, needs and aspirations of the community, the facilitator has to play the key role in motivating the community. This may require long interaction with various sections of the community in terms of their degree of dependency on forest resources, perceptions and attitudes towards management of forests for sustainability and long term use.

After generating motivation among the community the phase wise planning process should be initiated. The planning process can be divided in four phases. The first two are related to the formation of institutions and the last two are to strengthen institutions.

Investigation Phase

Information planning in community forestry is very important, for without adequate information the planning process may not cover all aspects. Collection of social and technical information, identification of users and community forest area by involving community members should be done in this phase. A motivator may facilitate the process.

Why investigation

- To gather social and physical resource information including the use of and need for forest products
- To identify the forest users and interest groups
- To record information on the systems of indigenous forest management
- To inform forest users of their rights and of government policies regarding community forestry
- To establish a strong partnership between the facilitators and the forest users

What to investigate?

Collect a variety of social and physical information to ensure that the correct forest users have been identified and the appropriate issues considered. The physical resource information required includes:

- The location, name, area, type, tenure and current condition of forests and plantation sites
- The potential of these forests to meet the needs of local people (all interest groups included) for forest products
- How the present condition of the forest, or the current availability of products, compares with the situation, say 5, 10 or 20 years ago. If there have been changes, what reasons are given by local people for the changes?

Collect the following social information:

- The nature of the community: age structure; ethnic and religious groupings; gender ratio; occupation; literacy; what are their interests and needs; who are the village leaders and elites and who are disadvantaged;
- For each forest or patch of forest, who uses that forest;
- Where the forest users live and whether they are members of a forest user group (whether formal or informal);
- The views and concerns of any specific (interest) groups within the forest users regarding forest management, land use and the control of resources;
- The nature of any disputes that might impact on community forestry (such as dispute over land tenure or resource use);
- The demand and preferences for forest products;
- The contributions that the forest users are making, or are willing to make towards community forestry; and

For each forest in consideration gather the following information

- What products are obtained, when and from where?
- Who collects each product, when and why (for example, are there gender, age or wealth differences)?
- Who is entitled to use the products from forest?
- What products flow to which settlements and households from each forest area under investigation, and when are they collected?
- Are there any shortages or other problems in obtaining these products?
- Do people get a fair share and if not, why?
- Are there any problems or disputes in obtaining products and how are they resolved?
- What are the local perceptions about ownership of the forest? Do they differ from the legal tenure?
- Are there local forest management systems or use practices operating? If so, what are they?
- Do these systems work well, and if not, why not?

The phase has the following objectives

- To build trust between village and external facilitator
- To collect social and technical information on the needs of forest products, forest use and forest condition
- To identify interest groups, primary and secondary users
- To learn about existing indigenous forest management system if any
- To make the users aware of government policy on community forestry, forest use and the user's rights

To fulfil these objectives, the investigation phase can be divided into the following activities

Discussion about community forestry with the local community: Main objective of this is to build solidarity among community members and undertake preliminary

Discussion on CF with local community

- Consult local leaders, social worker for their views on CF policy of government, forest management and the possibility of initiating CF in the area.
- Discuss with the community on government policy, role of users, their rights and duties and seek users' views on their need for forest products and management
- Identify the existing forest area, area of plantations and areas suitable for CF
- Prepare a rough sketch map showing the village and forest area
- Identify the priorities of the users with regard to establishment of CF and assistance required for it
- Discussion on private forest development and policies on nurseries and seedlings

investigation. The community can learn about the existing policies, about composition of the local community and identify appropriate area for community forestry.

Identification of forest area and user households: The objective here is to designate the users of a given community forest area. The community should identify the households that actually obtain forest products from that area and therefore provide protection to the

Identification of forest area and user Households

- Discuss about forest use with local people; identify who needs which forest produce; compile a name list of the forest users
- Verify the name list asking the local people and going around the area
- Finalise the list in a meeting. If dispute arise discussion and investigation should be started all over again
- Identification of existing community management systems

area. It is essential that no one is excluded from decision making or benefit sharing. If the users are not properly identified before the operational plan is formed and approved then the resulting conflicts may be difficult to resolve.

Identification of existing community forest management systems: It is easier to launch community forestry development activities in areas with existing local forest management systems. The existence of such system indicates the awareness of the local

Discuss with people other systems of community cooperation

- Discuss the existing forest management systems if any. Include the following topics
- Forest boundary
- Who are the users
- How is the forest protected?
- What is the decision making process for forest management
- Existence of committees if any?
- Identify the problems of the existing forest management system. Find if any user is unhappy with the system

people about the importance of forest management and their interest to participate in Community Forestry. Instances of cooperative activities such as SHGs, water user groups are also indicative of useful basic organisational skills necessary for managing community forests. Such local cooperative set up greatly help organising the forest users to manage community forests.

Ascertain user requirements: Here the objective is to ascertain different requirements of user group and to provide a forum for discussion. Members of the user community do not

Ascertain users' requirements

- Organise small meetings to understand the views of users on forest use and requirement for forest produce
- Identify groups with similar interests such as Women; Ethnic/ occupational groups; Poor/ landless households; Households with sizeable livestock; Fuelwood sellers
- Encourage the users to express their views on forest management, forest product requirement, forest management systems followed by other user groups
- Discuss with the users on issues in intervals
- Convene regular meetings to build confidence and consensus
- Encourage discussion on ways and means of resolving conflicts

have same status, requirements or viewpoints. Therefore, it is important to understand the viewpoints of different user groups within the same user group in order to prepare an operational plan that considers everybody's requirements. Meeting of different interest groups should be made to understand the extent of consensus.

Assessment of the community forest area: The objective here is to assess the condition of existing forest area and discuss with the user community about possible management interventions. Once the social issues of the user community is understood, it would be

Assessment of the community forest area

- Walk around the forest area with the users
- Draw a rough sketch map showing forest boundaries, roads, tracks, rivers, hills, etc
- Survey the forest area and calculate total area
- Study the condition of forest, density of trees, natural regeneration, species composition and the suitability of the area for plantation
- Discuss silvicultural options that could be followed to produce different forest products
- Solicit peoples participation for new plantation
- Inspect the proposed nursery site and water source

possible to discuss with them different silvicultural options that can be applied o fulfil the needs of different forest products. The following topics should be considered: present condition of the forest; need for plantation; enrichment planning; harvesting, etc. If new plantation is proposed, it should be made sure that there is a consensus view on this.

Investigation for forest management – field exercise guide

This guide includes:

- A list of information to be collected during field visit
- A list of information which can be collected by participatory mapping

- The standard components to include on the final version of sketch or participatory map
- A list of materials for participatory mapping
- A list of materials for making forest profile by rapid assessment
- A community profile form; and
- A forest profile by rapid assessment form.

Information to be collected during the field visit

Information	Collection method	Recording method
Forest name and location (including administrative area)	Participatory mapping	Participatory map
Forest area, type and condition	Forest profile by rapid assessment, direct observation and participatory mapping	Field notebook and participatory map
Social information: ethnic and religious groupings; gender ratio; occupations; elites and disadvantaged; literacy; interests and needs; key informants; and interest groups	Semi structured interviews, participatory mapping and interest group meetings	Community profile form, participatory map and field notebook
Whether the community has rules about management of the forest or not (an indigenous management system)	Semi-structured interviews and direct observation	Field notebook
Details of collection of forest products	Participatory mapping and semi-structured interviews	Participatory map and field notebook
Approximate number of households	Participatory mapping	Participatory map and field notebook
Level of interest of forest users in taking responsibility for forest management	Semi-structured interviews	Field notebook
Current status of community forestry planning process	Semi-structured interviews	Field notebook

These activities would be more effective if NGOs are involved

Check if you have done this

- Discussed community forestry within the community and with FD functionaries or any support agency (eg. NGO) workers for awareness and motivation of the community
- Identified and verified the general users and occupational users (cross section of the community) of the forest area and the different kinds of uses
- Assessed the existing management system and discussed the limitations and opportunities
- Assessed interest group needs and concerns
- Identified special needs of women and other disadvantaged groups
- Outlined the area under protection and management, the vegetation type and various land use practices

Negotiation Phase

Basing on the resultant output from investigation phase the negotiation phase is to be planned. Group formation, and discussion and resolution of forest management issues are important outputs of this phase.

The following are specific developments in this phase. The specific objectives of this phase are

- To ascertain the users' requirements, problems and their solution
- To obtain the approval of users for community forest management
- To form user group committee and frame constitution and get the same approved by the community
- To formulate and obtain approval of the operation plan
- To hand over the responsibility of managing the community forest to the committee

Issues for forest users to negotiate

- Membership of forest user group
- Objectives of management
- Prescriptions for protection and harvesting
- Responsibility for protection
- Responsibility for harvesting
- Equitable distribution of forest products
- Responsibility for finances
- Responsibility for technical advice
- Record maintenance



NEGOTIATION FOR FOREST MANAGEMENT

The negotiation phase involves forming a forest user group and user group committee and developing an operational plan. Forest users must negotiate amongst themselves to develop a plan which is acceptable to all the forest users and to the forest officers. PRA tools such as semi-structured interviews, ranking and participatory mapping are designed to gather information and help forest users analyse their situation. Small group meetings and user assemblies are to help forest users plan a course of action and negotiate with each other so that the proposed action is acceptable to the whole community.

The process of negotiation is a time consuming exercise. Negotiation should be done in small group meetings as in large group meetings elites dominate where women and other disadvantaged groups feel uncomfortable about speaking out in a larger group.

It is therefore important during the process of negotiation, for the facilitator to hold smaller meetings with interest groups and other groups of forest users. The aim is to develop a thorough understanding about the different issues that forest users would like to see included in the operational plan. The information collected at these small group meetings can form part of the agenda to be discussed at the user group assembly. Consideration of the issues raised by different interest groups will highlight potential areas of conflict. These conflicts must be solved to arrive at a consensus and have an operational plan that will work in the long term.

Once aspects of the operational plan have been negotiated through small group meetings, it is appropriate to hold forest user group assemblies to make decisions for the whole user group and to settle disputes. In the process of making decisions it is necessary to concentrate on building consensus. Although sometimes difficult to establish, consensus is highly desirable for community forest management. If consensus is not obtained those who disagree may simply ignore the decisions. However, consensus does not necessarily mean that everyone will cooperate. Some rules and sanctions might also be needed.

Negotiations and decision making may take months or only a few meetings. It is complete when all major disagreements have been resolved. It is the village themselves who must ultimately decide on how they will manage their forest.

To fulfill these objectives, divide the negotiation phase into the following stages:

Formation of forest user group committee:

The main objective of forming forest user group committee is to inform the users about their rights, duties and opportunities provided by community forestry. This stage starts after

- Call men, women and all class of users to the meeting. If the attendance is not sufficient postpone the meeting. But record the attendance and the decisions made
- Discuss the management of pasture land, thick forest land and the role and rights of forest users
- Verify actual members of forest user community. If dispute arise allow it to be resolved by the users
- Elect members to forest users committee and the office bearers. The community should decide the number of members in the committee.
- Encourage women to be members of the committee.
- At this stage election of the committee may not be necessary but problem may appear later if the committee is decided in a hurry
- Women are generally hesitant to speak out in a meeting. Encourage them for their opinion

identifying and finalizing general members and sub groups of the committee through discussions and meetings. Now the task is to formally constitute the committee. To do this convene a general meeting of the forest users and discuss forest management options with them. All the members may not be able to spare a whole day for the meeting. Hence select certain important issues and discuss each issue one by one when the majority of users are present.

Identification of users' requirements, problems and their solutions:

Main objective here is to develop consensus among users about forest management problems and their solutions. This activity is the foremost and most important in the process of operation plan formulation. The user group should reach a consensus on the requirement of forest products. Although different interest groups can do this separately, it should be discussed

- The forest committee should convene the users meeting in order to discuss forest produce requirements and problems
- The committee should see if the number of participants is enough to run the meeting
- If the answer is no, then the meeting should be organised at a later date.
- Encourage all participants, especially women, poor people and backward caste people to speak.
- Discuss the problems and solutions identified by the interest groups towards reaching a consensus
- If the socially backward groups are not able to express their views, a moderator may be selected to bring up such views for discussion
- A member of the committee or the user group community should record the proceedings of the meeting

in the general meeting. The issue decided by consensus in the user group general meeting becomes the programs and rules for the operational plan. Some user group may reach consensus after an hour's discussion while others may need to meet several times to do so. It is important to make sure that the consensus is reached.

Preparation of the Operational Plan:

The main objective here is to prepare the operational plan for obtaining the approval of user group community. The user community itself should prepare the operational plan. If they feel deficient they must try to find a facilitator who would also help them in technical

- Convene a meeting at a time when majority of users representing all sections of the user community can attend. If the attendance is not up to the mark postpone the meeting
- Prepare an agenda enlisting topics that need to be covered in an operational plan. Prepare a checklist including all the necessary topics. The checklist should contain indicative questions as to how, why, when, etc. of different topics. This could ease the decision making process of the users.
- Record the decisions made by the users
- Read out the decisions made at the end of the meeting for everybody's approval
- Include rights, responsibilities, duties of users, user committee and forest department

aspects like calculation forest area, preparation of map, etc. The plan should be simple and flexible enough for all kind of users to understand and implement without difficulty.

Review the composition of Forest Committee:

The objective here is to decide the final composition of forest committee, its role and responsibilities. After preparing the operational plan develop a friendly understanding between the user group and the forest committee with regard to forest management. The user group must decide on the necessity of forest committee and its role. The forest committee is to implement the operational plan. The committee is also responsible for account keeping. The users group can give additional responsibility to the committee. If a facilitator is available he should make the user group itself to define the role of forest committee.

- If possible request a forest department worker or officer to be present in the meeting
- Find out nine to eleven members from the user group who would represent the forest committee
- Democratically chose the top office bearers of the committee such as chairman, vice-chairman, secretary, treasurer and other members to executive committee
- Make sure at least one third active women members are elected to the committee as members and office bearers

- Create a situation for oath taking of members and office bearers that they would discharge their responsibilities with honesty and integrity. Village temple or a sacred place nearby would be better for oath taking.
- Record the proceedings of the meeting
- Discuss the operational plan prepared earlier and entrust the committee to work according to it further
- Send a report of the committee formation to the local forest department authority and the DFO

Issues to discuss with interest groups during negotiation

An interest group is a group of people who share a particular set of interests. Discussing aspects of an operational plan with interest groups is an important part of the negotiation process. It is also useful to negotiate aspects of operational plan with small groups of forest users who are not necessarily an interest group. Negotiating in small groups gives people, who might be too shy to speak at user group assemblies, a chance to put their points forward. Negotiating with small groups of people who have different interests can also help identify conflicts and find solutions. If potential areas of conflicts are identified during discussions with interest groups, the facilitator should try to get the different groups to meet and seek a solution before the user group assembly.

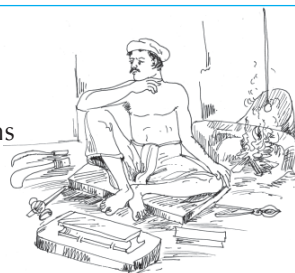
The list of issues below provides only a starting point for initiating discussions with small groups or interest groups. Semi-structured interviews should be used to undertake more detailed investigations of issues that seem to be important to different groups. The information generated about these issues helps form the basis of management strategies for the forest.

Issues

- Area of the forest
- History of the forest, its use and existing management systems
- Boundary and any conflicts over boundary
- Internal boundaries dividing different forest types
- Species and their distribution
- Size of the products to be distributed
- Impacts such as grazing and fire
- Spacing and stocking
- Possible silvicultural systems and options
- Silvicultural treatments such as singling, pruning and thinning
- Financial accounting
- Penalties for illegal activities

Finally check if you have done this

- Deciding the forest user group
- Developing constitution
- Identification of solutions to their needs and problems
- Preparation of operational plan
- Formation of forest committee at community level
- Community entrust the committee for management



Checklist for negotiating community forest management

- 1.0 Description
 - Name of forest
 - Location, boundaries, size and land tenure of forest
 - Type, species and condition of forest
 - Management objectives
 - Description of forest user group
- 2.0 Prescriptions
 - 2.1. Harvesting and distribution of forest products
 - Grass and fallen leaf-material
 - Dry and green fuel wood
 - Timber for handles, ploughs and other small implements
 - Other timber
 - Other products (such as bamboo and medicinal plants)
 - Charcoal production
 - 2.2. Disaster, hardship, relief and social works
 - Guidelines for distribution of forest products for special needs
 - 2.3. Protection arrangements and sanctions
 - Protection system
 - Fire protection
 - Grazing
 - Unauthorized harvesting and fire lighting
 - Hunting
 - Encroachment
 - Other rules

- 2.4. Other developments
 - Enrichment planting
 - Others

- 3.0 Authority, Responsibilities and Accountability (including cost sharing arrangements)
 - The user group
 - The executive committee of the user group
 - Facilitators and Forest department officers

Annexes

- Sketch maps
- Silvicultural advice
- Schedule of fines and prices for forest products
- User group membership
- Executive committee members

Implementation Phase

Implementation refers to the practical implementation of the operational plan by the forest users. Operational plans or agreements are not ends in themselves. Rather, they are the beginning of practice of community forestry. It is during the implementation phase that the concept of community forestry and the Government's commitment to devolve authority to forest users is actually realised.

During this phase the forest user group carries out management activities as prescribed in the plan with the advice and assistance of their promoter. Regular monitoring of all the activities should be ensured.

Implementation of an operational plan by forest users often requires continuous support from facilitator or promoter, particularly during the first few months after preparation and approval of the operational plan and when initial harvesting is undertaken.

Thus the objectives of implementation phase are

- To encourage the user group to protect, develop and utilize community forest in a sustainable manner
- To implement the approved forest management programmes
- To keep the accounts of the user group up to date
- To monitor the effectiveness of the forest management done by the users
- To make the user group self-sufficient

User groups differ from one another. Likewise their operational plans are different. Therefore, each plan needs to be implemented in its own manner. The facilitator should build consensus among the users while implementing operational plan. It is the duty of the facilitators and promoters to advise and assist the users in implementing the operational plan.

How to help forest users to write an operational plan

To write an operational plan during a forest user group meeting the facilitator should:

- Make sure that all forest users are invited and informed in time about the purpose, day, time and place of the assembly
- Remember that everyone will not necessarily turn up to the meeting place on time. Don't become impatient and force the start of the meeting unless you are sure there is satisfactory representation of all forest users;
- Initiate discussions by giving reasons for calling the meeting and explain what is intended to be achieved at the meeting. Remember that the task is to facilitate the process of discussion amongst the villagers themselves and to help them arrive at decision by raising issues that may have come up at small or interest group meetings. Ask questions using who, what, why, when and how probes for each of the items described in the 'checklist for negotiating community forest management'.
- Note down the decisions made at the meeting. These decisions will eventually form part of the operational plan. Flip charts can be very useful on such occasions, as they help people to see what has been written. Place the flip-chart in a location where everybody can see it.
- After having noted down all the decisions, read them top the assembly seeking conformation that each is acceptable as you progress (remember that some people can not read, so it is important to read things out clearly and to allow questions for clarification)
- Not take on the role of chairperson, secretary, treasurer or any other office bearer of the executive committee when it is formed;
- Remember that negotiations often take a long time and it is easy for some people at the meeting, particularly women and others who have many demands on their time, to become impatient. They may gradually start to leave the assembly. The field worker should be aware of this and try to keep them from leaving. Sometimes it may be best to see if the assembly will agree to close the meeting at that point and set a new day to continue. Indeed, it is often very useful to have a break of a day or so during negotiation to allow those present at the meeting to think about the decisions and to discuss the issues with their family and friends. This is particularly important for allowing male user group members to discuss the issues with the female members of their family who may not be present at the user group assembly or may be present but do not speak up about important issues. Before the meeting breaks up the facilitator should make sure that the day, time and place for the next meeting is fixed and agreed to by all;

- Bring the flip charts back to the office, copy them or get them typed in a logical manner as the draft operational plan;
- Keep conducting small group meetings between the user group assemblies to judge whether the discussions and decisions at the assembly represent a workable consensus;
- Take any significant issues or problems that require significant change to the draft operational plan back to the full assembly for ratification; and
- Ensure that the final draft of the operational plan is discussed in small groups and then taken to a user group assembly before being executed or sent for approval to the relevant authority.

The phase can be subdivided into four main activities

Assist the user group in implementing the operational plan:

The main objective here is to implement the approved operational plan. It is here that the community requires the facilitator's help. This includes activities like

- Training the users
- Tree marking
- Seedling distribution
- Guiding the harvest operation
- Training the nursery worker
- Help in releasing approved funds and materials
- Extension activities
- Participating in forest user group meetings

Activities

- Inform the facilitator about the operational plan and the problems He could aid the forest users in solving their problems and answering their queries.
- While planning their own programs, the facilitator should also incorporate the activities of the user group
- Seek the assistance of the facilitator in implementing the activities of user groups and be assured of the technical, moral and in appropriate cases, financial as well as physical support
- Encourage the forest user committee to meet regularly
- Design and get a seal made for the committee

Monitoring the implementation of operational plan:

The main objective here is to monitor the management of community forest and effectiveness of the user group as well as to provide information to the Forest Department. It is necessary

to monitor the implementation of the operational plan. It is also responsibility of the committee to collect information from the forest user group and share the same with the promoters if there are any.

Activities

- The forest user committee must keep records of all financial transactions
- Collect and maintain records of information on harvest of forest products and their sale, benefit sharing, bank balance, expenditure etc.
- Committee must check if activities are going on as targeted and if they are done timely.
- Committee must monitor what conflicts of interests arise while implementing the operational plan
- Committee must keep the facilitators and forest department apprised about development in implementation of operational plans

Strengthening Forest user Group:

The main objective here is to enhance the capability of user groups to run the community forestry development activities in an effective manner. The newly organised user group may lack the technical skills and self-confidence for an effective implementation of operational plan. This is usually the case where there is no past experience of local forest management systems. Without proper guidance and training the user group may face difficulty in forest product harvesting and conflict resolution. This may in turn, reduce the users’ trust in community forestry development. Therefore training programs should be conducted at the district and range level. For this the forest user committee should take initiative to contact local forest officers and the promoters like NGOs for such training and capacity building of the forest users. The success of community forestry depends on the success of forest user groups and their committee.

Activities

- The committee must try to find simple solutions for any conflict of interest among users and if required should consult the forest department or the promoter
- The Committee should arrange for training of the users and committee members in forestry development, financial management and methods of user group strengthening
- Facilitate organising interaction among user groups

Revision of operational plan:

The main objective is to make necessary revisions in the approved operational plan. During the course of implementing operational plan, the users group may feel that some revision is needed. The user group can do so in consultation with the committee and promoter, or even with forest department officers.

Activities

- Enquire from the users if the operational plan needs revision
- Organise a meeting to discuss on the revision of operational plan
- The users committee should seriously think over the suggestions for revision
- Revise the operational plan with approval of the users



Check if the following are done properly

- Starting activities as envisaged in operational plan
- Monitor operational plan
- Strengthen the forest user group with technical advice

Review Phase

During this phase the forest user group does review, revision and renegotiation of an operational plan either on request or upon expiry of the plan. The main objectives of this phase are to

- Renew the operational plan after its expiry
- Discuss if the user group requests major changes in the operational plan

There is no fixed rule about how long an operational plan can be implemented before its review. Nursery construction or plantation programs can be planned for a certain number of years. However management of natural forests may take many years.

If the operation plan cannot fulfil the forest products need of the users or a major modification is necessary, the user group should request the committee for review. The committee may seek the help of facilitators or forest department for the same.

The review phase can be divided into three main activities such as

Evaluation of the ongoing operational plan:

The main objective here is to assess the effectiveness of the ongoing operational plan and to identify problems if any. For this the user group may need to consult the promoter or the forest department staff or any external expert. First the link between the social and technical aspects of the plan needs to be established. It is necessary to know how effectively the user group is implementing the plan and to what extent programs of the plan have been completed.

Activities

- Study the financial transaction of the user group
- Informal talks with different interest groups equity, benefits, protection and achievements of committee
- Visit the forest to study plantations, harvesting operation and condition of forest

Discussion on revision of new operational plan:

The main objective here is to prepare a revised or a new operational plan. The same methodology followed in preparing the previous operational plan should be followed for the new one. The

Activities

- Convene the user group meeting to discuss present forest management plan and future changes in the plan
- Record the decisions made by the assembly on the revision of the operational plan
- Allow the members of the user group to review the condition of user group and committee.

necessary revision in the context of future requirements should be discussed and decided in user group meeting. If the present operational plan needs revision, the views of all users should be taken into account.

Approval of the revised or new operational plan

Main objective here is to get the new or revised operational plan approved by the committee and if required by the forest department

- Follow the steps taken for getting approval of the previous operational plan

Record keeping and monitoring

The main objective of monitoring and record keeping is to provide information to the management of state, district and range levels of forest department. To be effective there should be monitoring at all levels.

The forest user group should monitor the forestry activities at the user group level. This involves collection of data and information as well as record keeping.

Monitoring and record keeping should be done at different levels. At the community level monitoring by committee and user group is very important.

Forest User Group Level

- Information on personal contribution and benefit sharing
- News on field activities
- Information and sharing of views on community forestry meetings, trainings, study tours and exposure visits
- Information on income and expenditure

Record keeping

The main objective here is to keep records of the implementation of operational plan, plantation area, natural forests and utilization of funds. To do this properly

- Maintain a register on forest resources
- Record the information necessary for Range Post Level Planning (Beat Level Planning)
- Records on each Forest User Groups which includes the decisions taken by the user group.
- Maintain a register on operational plans; collect and record information on appropriate monitoring forms.

Records should be kept of

- Information gathered during the investigation phase
- The negotiation process
- The progress of implementing the operational plan, particularly:
- Condition of the forest resource
- What community contribute and how they benefit
- Changes to the operational plan and reasons for the changes

These records are necessary for community monitoring and also for planning and decision-making

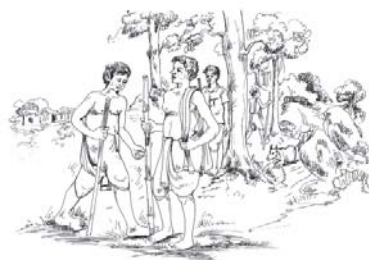


Community Forestry Approach

Participation and Empowerment

There are two approaches like Participatory Rural Appraisal (PRA) and Rapid Rural Appraisal (RRA). This is adopted from Participatory Techniques for Community Forestry – A field manual, By Bill Jackson and Andrew Ingles (1995)

Community forestry involves groups of local people managing forests to support their farms and households. These groups are referred to as forest user groups. The promotion and support of community forestry is a major element of Government's policy for the forestry sector.



While implementing community forestry certain techniques need to be used:

- Promote the participation of local people in forest management
- Increase the capacity of forest users to manage their own development, and
- Provide reliable information that can be used to plan, monitor and evaluate community forestry activities

The promoter or forest department sometimes has difficulties promoting the participation of local people in forest management. Often this is because of the term 'participation' means different things in different situations. For example, when local people contribute free labour for forest plantation program they are participants even though they may have been coerced. In contrast, when local people willingly assume responsibility for planning and implementing management of local forests they are also participants, but at a very different level than the first group. To promote the participation of local people in community forestry

- Local people may be consulted about community forestry issues
- Collaboration between forest users and government be encouraged
- Local people be empowered with the rights to manage a community forest in a manner consistent with local interests and the objectives of community forestry.

Information needs

Variety of information is required for planning community forestry, whether for developing a Range post work plan or negotiating collaborative agreements with forest user groups. Mainly two types of information are required for the purpose; physical resource information and social information as described above.

Physical resource information	Social/institutional information
<ul style="list-style-type: none"> • Location of villages and forests 	<ul style="list-style-type: none"> • Nature of rural communities and forest users
<ul style="list-style-type: none"> • Area and condition of forests, shrublands and grasslands 	<ul style="list-style-type: none"> • Their interests, needs and preferences
<ul style="list-style-type: none"> • The potential of the forests to meet the forest product needs of local people 	<ul style="list-style-type: none"> • Any disputes which might impact on community forestry
<ul style="list-style-type: none"> • Location and quality of tracks and roads 	<ul style="list-style-type: none"> • The contribution that the villagers are prepared to make towards community forestry
	<ul style="list-style-type: none"> • The existing arrangements for utilizing and protecting forests

Profiling Forests

Conventional methods of gathering information in rural settings, such as questionnaire surveys and formal forest inventories, commonly fail to provide timely, reliable, cost-effective and useful information for implementing community forestry. Such highly formal methods are unnecessary and inappropriate at the first stage of community forestry development. Forest user groups do not usually need highly technical information to manage community forests. While formal forest inventories provide accurate information, they are often time consuming and extensive. Rapid assessment techniques provide a cost-effective approach to collecting reliable and useful information for implementing community forestry programs. Rapid collection of information with involvement of the community more time can be allocated for investigating social issues and undertaking forest extension, both of which are crucial to the success of community forestry.

Approaches and tools that involve local people as participants in collecting and using information provide better alternatives to conventional surveys and inventories. Two approaches that do this are Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA). RRA and PRA are simply labels for approaches that emphasize the importance of learning directly from and with local people. RRA and PRA are specific techniques that can be used to collect information and facilitate peoples' participation.

Forest Profile By Rapid Assessment

Rapid Rural Appraisal (RRA) refers to a set of approaches that emphasize the importance of learning rapidly from local people directly. RRA involves tapping local knowledge and gaining information and insight from local people using a range of interactive tools and methods. RRA approach is participatory in the sense that the promoter consults with local

- Highly formal and conventional methods of gathering information commonly fail to provide timely, reliable and cost-effective information for development planning
- Brief, unstructured field surveys can give rise to biases that undermine the usefulness of information collected during such visits
- Local people need not be interviewed formally to obtain useful information. This can be done by using informal tools such as conversation, direct observations and mapping
- There is great value in undertaking unhurried observations and conversations with local people
- Attitude and behaviour of local people and promoter are important factors in the quantity and reliability of information that can be obtained.
- Local knowledge has great validity and usefulness for community forestry and such knowledge can be obtained by using PRA approach

people while collecting data. RRA is extractive in that information is gathered and used according to the needs and agenda of community forestry development plan.

Inspecting the forest with a group of fellow villagers is a useful way of gathering information about the physical characteristics of a forest and how they are used. This is called a forest profile by rapid assessment. The objective is to gather information on the location, tenure and condition of a forest. This information is required for soliciting sound technical advice from experts so as to empower the community members to develop and implement forest management plans.



This information is required for soliciting sound technical advice from experts so as to empower the community members to develop and implement forest management plans.

To undertake a forest profile by rapid assessment information about the forest is collected rapidly by asking questions to users, looking at the forests to estimate forest characteristics (ocular estimates), and preparing a participatory map. Ocular estimates (estimates by eye) used for forest profiles must be calibrated from time to time in order to obtain reliable information from rapid assessment. This can be done by measuring a few small randomly located temporary plots and comparing the results with ocular estimates.

Forest profiles by rapid assessment provide a useful first hand glance at the condition of the shrubland or forest but they do not provide enough detail for establishing a baseline description of the condition and biodiversity of the forest as an ecosystem. The resulting information is more useful to villagers than formal survey information.

Forest profile by rapid assessment

Stepwise process

- Select a time convenient to the villagers
- Locate key informants who can visit the forest and who will provide a wide cross section of information and opinions
- Explain the general aim of the exercise
- Explore the issues that arise out of conversation or through direct observation.
- Record details of the whole forest and then divide forest into blocks of similar forest types
- Record the name, location and tenure of the forest and the date that the information was collected
- Record the area of the selected forest, based on the opinions of the group and ocular estimate
- Divide the forest into blocks of similar forest types and make a sketch or participatory map
- Give each block a number

For each forest block

- Record the number of the forest block
- Record the vegetation type and estimate the three most common species
- Record basic management information
- If planted, record year of planting and estimate the stocking of shrubs and trees
- Estimate the soil cover
- Estimate the crown cover of the forest
- Estimate the density of regeneration
- Estimate the density of seed trees
- Record the presence of locally preferred species
- Note down ideas for different harvesting and silvicultural treatments

Why do we need to assess forests?

- To obtain forest resource information for Community Forestry planning and monitoring
- To determine problems, opportunities and priorities for community forestry
- To assess need for silvicultural advice and extension
- To ensure that forest use is ecologically sustainable

Information to collect for a forest profile by rapid assessment

FOR WHOLE FOREST

Location	:	Administrative address, location on a map relative to villages, other forests and infrastructure
Name of Forest	:	The name of the forest as is known to local people
Tenure	:	The tenure of the forest if any
Size	:	An estimate of the size of forest in hectares
Forest variability	:	The variation can be seen by making a sketch map of the forest blocks showing their main vegetation type and condition. The variation in forest type and condition over the area is important for providing advice about harvesting and silvicultural treatments and monitoring the impact of forest management by users.

FOR EACH BLOCK

Name of forest	:	The name of forest of which this block is a part
Block Number	:	The blocks should be marked on a sketch map and numbered so that they can be identified within the larger forest area
Date	:	The date when the forest block was assessed
Area	:	The area of block in hectares
Forest management	:	Basic management information about the block such as date of planting (if relevant), presence of local management systems and whether it has been handed over as a community forest
Forest type	:	The basic vegetation type and names of the three dominant species
Forest condition	:	A simple classification of the forest based on soil cover, crown cover, regeneration and seed trees
Presence of locally preferred species	:	In addition to the forest profile information, the presence of species preferred by local users should be recorded
Opportunities for silvicultural treatment and harvesting	:	For each forest block, there will be different opportunities for applying harvesting and silvicultural treatments. Ideas opportunities about these should be noted in the field.

Information gathered by RRA can be used for

- Setting priorities for the efficient use of Forest Department resources
- Collecting detailed information from people about the size and condition of local forests and the nature of communities who use those forests
- Identifying who has the right to use a forest, and
- Collecting detailed information about community forests, forest user groups, nurseries and plantations for the purpose of monitoring and evaluating community forestry development.

Participatory Rural Appraisal (PRA)

PRA approaches involves the facilitator or promoter help local people conduct their own

PRA is 'a family of approaches and methods to enable local people to share, enhance, and analyse their knowledge of life and conditions, to plan and to act' ... Robert Chambers (1992)

analyses, plan and take action. The ultimate aim of PRA is to empower local people with the capacity to plan and take action towards improving their own conditions. PRA is based on the following principles

- Local people are creative and capable and can do their own investigations, analyses and planning
- Field worker have a role as facilitator of rural development; and
- Local people should be empowered to solve their own problems themselves.

The basic difference between RRA and PRA approaches is that RRA seeks to obtain reliable and useful information from local people for use by the field worker through a participatory approach, while PRA seeks to facilitate learning, planning and action by and for local people.

Characteristics of good RRA and PRA

- Building rapport with men and women, rich and poor, young and old people in different ethnic or social groupings
- Being aware of potential suspicions and taking actions to dispel them
- Being friendly, interested, culturally sensitive, relaxed and open
- Avoiding placing people in situations in which they feel uncomfortable
- Listening and probing and leaving space in conversations for additional comments
- Avoiding using RRA and PRA tools in a mechanical way by selecting tools to suit local circumstances
- Taking advantage of local events and activities rather than staging events and activities
- Engaging in conversations that have a two way exchange of information

- Being patient but proceeding at a moderate pace
- Seeking the views of weaker, less powerful people or groups
- Sharing information
- Giving people time to communicate and consider ideas
- Being self-aware and self-critical, using your own judgment, concealing personal biases
- Learning from people, not lecturing
- Checking and rechecking the validity of information using different sources
- Frequently reflecting on what information has been gained and where the gaps are
- Identifying the testing assumptions
- Embracing and learning from error
- Trying to ensure that peoples' expectations are not raised too early
- Asking questions that invite explanations or viewpoints rather than yes or no answers
- Scheduling RRA and PRA activities so that they fit in as far as possible with seasonal and daily routines of local people.



Potential dangers associated with adopting PRA and RRA approaches

- Misused through superficial adoption of tools in the absence of complete understanding and adequate training
- Rushed if they are seen as providing shortcuts, thus yielding unreliable information
- Disruptive to social routines in the village
- Biased towards local people who have time and motivation to talk to facilitators
- Time consuming if done properly
- Biased towards those people who appear to have knowledge
- Either facilitated in a highly formalized way, or applied too rigidly and repeatedly which reduces their potential effectiveness

Using RRA and PRA in community forestry

RRA and PRA require a flexible approach. RRA and PRA tools and the sequence in which they are used should not be highly prescribed. Using RRA and PRA tools as a blueprint for action suppresses innovation. Such innovation is essential to learning from and with local people.

A great deal of care is needed when using PRA to ensure that shortcuts are not taken. The field worker may sometimes find it easier to deal with people who have the time and interest to participate in the PRA exercises. The facilitator needs to be sensitive to the dangers of empowering only one section of a local community. Good PRA often takes a long time and demands patience and commitment.

PRA and RRA tools	
Building rapport	Participatory mapping
Cross checking	Participatory analysis of photographs
Key informants	Ranking
Interest groups	Time charts (seasonal charts)
Semi-structured interview	Semi-structured walks
Secondary sources (RRA only)	Short, simple questionnaire (RRA only)
Direct observation	Forest profile by rapid assessment
Sketch mapping (RRA only)	Workshops and group meetings

Sketch and participatory mapping

The objective of sketch mapping is to use a simple hand-drawn map to record information about local physical resources and social conditions that does not usually appear on published maps. Sketch mapping of the forest needs a facilitator and is better done with participation of the community and specialized groups within the community. These maps are useful for more effective when implementing operational plan. A sketch map can be used to record the location of administrative boundaries; topography and hydrology; location and names of facilities; location of each village and the number of households and type of people that live there; type and location of farm lands; and location, names and condition of forests used by people. Occasionally, published maps of suitable scale exists, but they rarely have the information appropriate to community forestry.

Participatory mapping, however, needs collaboration of the villagers to prepare a simple but informative map, or set of maps, that record a variety of information about local physical resources and social conditions. Participatory map should be first drawn on the ground by villagers and then transferred to the record book. It not only produces valuable information but also promote partnership between villagers and the FD or any other support agency, and to empower villagers with the responsibility for managing community forests.

Sketch mapping

- Select a location with a good view of the area
- Mark the standard map components on the sketch
- Sketch the major features of the landscape (ridges, rivers, roads) in plan view
- Add other easily recognizable features such as cliffs, temples, landslides or bridges
- Do not portray nearby objects as large and distant objects as small
- Fill in the details required, making their positions as accurate as possible
- Write in names of prominent features, villages, roads, and forests that may assist when relocating the map with the site or transferring information onto a more conventional map

Standard map components: every map should show

- A map title including address of the area
- An arrow to show magnetic or true North; usually oriented up the page
- The map itself using lines, symbols, words and sometimes shading or colours to show the features of interest
- A legend describing the meaning of symbols
- The name of the map maker
- The date

A detailed participatory map can be used to record the type and condition of forest including the planted trees; location of particular resources, such as water sources, non timber forest products and fuelwood and timber sources; and type, importance, seasonal use and source of forest products.

Steps to prepare a participatory map

Decide on the scale of the map to be prepared. This will depend on whether the map is to record general information (may be for a group of forests) or specific information (may be for a single patch of forest)

Information to be collected by participatory mapping:

- Topography and hydrology;
- Infrastructure such as roads;
- Administrative and other boundaries;
- Location and number of households (approximately by ethnic grouping);
- Location and names of facilities (such as schools and water sources);
- General indication of land use;
- Location of forest user groups (or forest users);
- Forest name, location and type (such as natural Sal forest or pine plantation); and
- Collection patterns of forest products (who uses which forest for what products and when)

- Schedule participatory mapping exercises so that they fit in as far as possible with seasonal and daily routine of villagers
- Choose physical surroundings where interruptions and distractions will be minimized, the ground is reasonably level and there is a view of the area of interest
- Gather a group of key informants, preferably made up of both men and women. This is important because women and men can have different understandings of forest use patterns, and who has rights to use a forest
- Try to keep the mapping group small and limit the number of outsiders
- Start by describing purpose of the map, and then mark on the ground to represent a prominent feature of the landscape (a stream, ridge, path or road). Ask villagers to name this feature, write the name onto a slip of paper and place the paper on the ground beside the mark that represent the feature
- Ask the villagers to add features such as streams, ridges, roads, settlements, forests and forest boundaries. Each patch of forest or different farming areas can be represented by a handful of grass or weeds, or small pieces of trees and shrubs
- When map is finished, encourage villagers to make a sketch on paper to keep as a record and to mark the location name (map title), a north axis, a legend, who helped make the map and the date it was made

Materials for participatory mapping:

- Collection of small stones for markers;
- Bags of coloured powders for making different features;
- Collection of local leaves and grasses to use as markers;
- Paper to tear into labels for writing the names of features;
- Large sheet of paper for making a copy of the map and field notebook for recording notes, and pens

Standard components to be included on the final version of a participatory map:

- A map title which should include the locality name or details for the area;
- An indicator to show which direction is North (north is usually at the top of the page);
- The map itself using lines, symbols, words and sometimes shadings or colours to show the features of interest;
- A legend describing the meaning of symbols;
- The name of the map maker (or for a participatory map, the names of people who participated in making the map); and
- The date the map was prepared

To improve the accuracy of the participatory map, repeat the exercise at other sites using different key informants. After each mapping exercise the map is adjusted by adding new information and discarding information that appears to be inaccurate.



Guideline for Organizing a Meeting and Conflict Resolution

Organising Meeting

Usually, in most of the cases the executive body members of the committee meet during emergency and take a quick decision on some event. In the general body meeting also the participation of the members is sometimes poor. Women participation in decision-making process is often very poor in village level meetings. Further, most of the participants in the meeting are mere listeners and they don't play any role or contribute to the decision making process. Participation of all sections of the community covering all the interest groups is a crucial determinant of successful meetings and decision making process. Meeting is therefore the most important instrument of community forestry planning. The following sections are some of the possible options for organizing and making a meeting fruitful.

Before the meeting

Step-1

Clearly before 7 days a notice should be circulated by the person in charge of the committee or the protection group. After duly signed by the members it should be placed in the notice board. If formal notice giving is not possible for some reason then the folk media may be used to inform all members in the community about the meeting. If notice is served then it should be stuck at an important place where everybody has got access.



Step-2

The agendas to be discussed in the meeting should be clearly stated in the notice so that the members could think over the same to raise issues. The place of the meeting should be ideally fixed in such a place that the women members should feel comfortable to participate. The date and time of the meeting should be clearly mentioned in the notice. (*For formal process of conducting meetings refer to Gram Sabha Manual*).

During the meeting

Step-1

The meeting must be presided over either by the president or by the secretary. The minutes of the previous meetings should be shortly discussed before coming to the main agenda. After the discussion the agenda of the meeting should be placed before the assembly for suggestions on changes if any. Views and suggestions from all quarters should be accepted and discussed for consensus. The president should give equal opportunity to all to place their views that would also ensure better participation in future.

Step-2

The members should be allowed to discuss among themselves for a few minutes so that they could add certain things in the agenda what they feel. The process of adding agendas in the main frame of the agenda should be encouraged and practiced in each meeting. The final agenda of the meeting should be finalized in a participatory process.

Step-3

Then it should be decided who will speak on which agenda. If people are nervous about speaking, one or two of them can be encouraged to present their position.



Step-4

The major issues relating to forest management should be highlighted in the meeting. The issues should be raised by the president of the committee. The participants should give their opinion on the issues.

Conflict Resolution

In community-based forest management it erupts:

- within and among communities;
- between communities and governments;
- with other community-based organizations, NGOs, commercial interests and other external players.

Conflict in community forestry is not simply the outcome of centralized decision-making or changes to more decentralized forms of governance. It is an inevitable situation in which people have differently defined interests and goals in the use and management of forest resources. Conflicts commonly arise over disagreements of tenure, access, control and distribution of forest lands or products. Even the smallest, most remote communities gaining access to and managing forests under their own tenure and authority are subject to conflict, requiring their members to address disputes in one way or another. Conflict – whether public or private – is a pervasive aspect of forest use and management.

Nature of conflicts

- Conflict can change significantly in form and intensity.
- Conflicts are often complex.
- Conflicts over forest use commonly affect a wide range of individuals, groups and subgroups.
- Conflict management requires addressing differences among stakeholders.
- Seeking to manage conflict may be a more realistic response than seeking to achieve resolution.
- Conflict can arise from most parts of the process of community- Based forest management.

<p>Nature of conflict- examples within forest user group/ community</p> <ul style="list-style-type: none"> • Identification of users • Sharing of benefits • Use of group fund • Collection of funds to pay watcher • Encroachment onto community forest land by people who own land next to the boundaries • Participation • Leadership 	<p>Nature of conflict- other examples</p> <p>Between forest user groups</p> <ul style="list-style-type: none"> • Location of forest boundary • Provision of seedlings from joint nursery <p><i>Between forest user group and others</i></p> <ul style="list-style-type: none"> • Deviation from operational plan • Deviation from the objectives of community forestry <p><i>Between others</i></p> <ul style="list-style-type: none"> • Conflicts over policy <p>Conflicts over working area</p>
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On close examination, a conflict can have many layers and change continually. It can involve and affect diverse groups of the community and wider political and economic institutions. Conflict is inherently variable, unstable and complex. Before acting on conflict, it is useful to consider its basic dimensions.

Dealing with conflicts – people must know that

- Conflict is rarely just one event or one dispute between two parties.
- The origins of a conflict are often complex and multiple. They are embedded in local cultural systems but are also connected to the wider political economy of which communities are a part.
- A conflict is often a sequence of cause and effect events that involve people, resources and decisions.

Some examples of conflicts in community forestry

- Conflict over forest use rights caused by confusion over boundaries (between neighbouring villages, between institutions such as JFM and CFM)
- Needs of women overlooked: for example an operational plan is developed without sufficient inputs from women, so it does not meet their needs and they do not comply with the rules (forest users vs. forest users)

- Problems with leadership: a dominating chairperson may deal directly with the DFO or support agency without calling community meetings, or even listening to the village forest committee members (chairperson vs. forest users).
- Problems with politics between forest user group members: If members belong to different political parties, they may bring politics to the village community meetings and cause disruptions (forest users vs. forest users)
- Problem over landuse decision: Closure of a forest area for grazing or fuel wood collection may block access for some people who continue such practices regularly



TYPES OF CONFLICT

Within forest user groups/community		between different interest groups between rich and poor within different interest groups
Between forest user groups		
Between forest user groups and others		forest user group and forest department/ government forest user group and NGO forest user group and entrepreneur
Between others		government and NGO and NGO government and industry different government agencies

Approaches to conflict resolution

Many rural and tribal communities have their own methods for resolving conflicts. There are traditional methods of conflict resolution by the village head or by a council of five respected village members. However the authorities of these traditional councils vary from area to area and among different ethnic groups. In the context of community forestry, these traditional

What mediators can do to help resolve conflicts

- Bring conflicting parties together
- Establish an atmosphere for recognition
- Help with personality problems
- Help to set agendas
- Help to clarify the interests and priorities of the parties as opposed to their 'positions'
- Help to clarify issues to be addressed in the negotiation
- Help parties obtain information they need to make decisions
- Help parties explore ideas for creative solutions
- Identify overlapping interests or areas of potential joint gain
- Help parties agree on criteria to evaluate solutions
- Record agreements as they develop
- Help with implementation and future conflicts

councils are still important players in conflict resolution, whether or not formal institutions like forest protection committees exist. However, traditional methods may not be able to deal with some of the new types of conflict arising; there may be conflicts of interest between traditional decision makers or mediators (those who would normally resolve conflict) and some community forest issues; and traditional methods may not be very effective at protecting the rights of the more disadvantaged in the community.

Negotiation

Bring people together, through the use of a third party, to find a mutually beneficial way forward. The assumption is that stakeholders have agreed to participate in interest-based negotiations.

The objectives of a negotiation process are to:

- Develop agreements that are beneficial to all parties;
- Nurture a collaborative, mutually supportive relationship for ongoing problem solving;
- focus on interests over positions in the approach and activities;
- Find ways to meet the specific interests and underlying needs of all stakeholders in the dispute;
- Obtain commitment from the constituents of the groups;
- Decide on how to monitor the agreements.

The parties pursue these objectives through a process of negotiation that may require one or more meetings and that uses a variety of possible fora.

The process is characterized by three main stages marked by specific activities and milestones. The resolution of disputes that involve only a single issue or two parties may require only a single meeting and a few hours. People from a common background may also move more quickly through the issues.

Stage and main activity	Milestones
1. Clarify and increase understanding of each group's interests.	Identify and agree on one or more shared interests on which to build collaboration.
2. Expand options that might provide mutual gain.	Develop a list of options to explore for feasibility.
3. Prioritize options and build consensus on acceptable options for managing critical issues.	Confirm a final agreement and plan for implementation and monitoring.

More complex issues involving multiple stakeholders may require a series of meetings. It may take many months to address all the issues. If complex value differences, relationship issues or underlying interests are involved, collecting additional information or reaching consensus may require more time and be less predictable.

The following is a list of questions that can be helpful as stakeholders assess how best to address a conflict. These questions are not presented in any particular order of importance:

- What is the conflict?
- How long has the conflict been going on?
- How have the stakeholders tried to address the conflict in the past (if at all)?
- How many groups of stakeholders are involved? Who is involved?
- How will the stakeholders be represented?
- Are any stakeholders not represented who should be? (If so, how should they be integrated into the negotiations?)
- How far can people travel? (At what cost?)
- How much time do people have to attend meetings?
- Is an appropriate meeting place available?
- Are there any time limitations that may affect when the meetings are held (for example, farming or harvesting schedules, religious or other kinds of holidays, political or official deadlines)?
- Will private meetings, task committees, field trips and/or community meetings be needed?

- How do the different stakeholders want to present their differences?
- Can visual documentation (such as photos, drawings and pictorial maps) be made to aid stakeholders with lower literacy levels and to counterbalance formal information (such as printed maps and published materials)?
- What materials (if any) does the facilitator require?
- Will people need time between meetings to debrief the other members of their groups?

conflict management practices (Table below). This checklist can assist the facilitator and stakeholders in determining the appropriate type of negotiation, the status of the facilitator, the meeting format, the process of dialogue and procedures for reaching agreement.

The questions and choices listed ask stakeholders to assess frequency of use, familiarity, cultural appropriateness and local acceptability. It may also be used as a tool for assessing and adapting the local system, for example, in identifying possible ways to make resolution processes more equitable or effective.

Checklist for assessing and adapting existing negotiation practices		
Attribute	Key Questions	Possible choices
1. Type of negotiation	a) Direct person to person?	<ul style="list-style-type: none"> • Stakeholder representatives • All interested stakeholders
	b) Third party?	<ul style="list-style-type: none"> • Legal representative • Government representative or officer • Forest management committee • Respected community member • Council of elders • Elected leaders • Kinship-based leaders
2. Preferred status of facilitators	a) Neutral or impartial	<ul style="list-style-type: none"> • Insider • Outsider
	b) Partial	<ul style="list-style-type: none"> • Insider • Outsider
3. Meeting Format	a) Individual negotiations with conflicting stakeholder groups?	

Attribute	Key Questions	Possible choices
	b) Individual negotiation followed by joint negotiations?	
	c) Joint negotiations involving conflicting stakeholders?	
4. Process of dialogue	a) Eligibility?	<ul style="list-style-type: none"> • Prioritized by status • All eligible
	b) Structure?	<ul style="list-style-type: none"> • One person at a time • Overlapping speakers • Multiple small discussions
	c) Communication style?	<ul style="list-style-type: none"> • Direct and confrontational • Indirect and non-confrontational
	d) Participation of stakeholders not involved in conflict?	<ul style="list-style-type: none"> • None • Observers • Advisers • Process recorders • Implementation monitors • Implementation evaluators
5. Reaching agreement	a) Process?	<ul style="list-style-type: none"> • Judgement • Consensus • Arbitration • Panel of peers
	b) Decision format?	<ul style="list-style-type: none"> • Verbal • Third party verification • Legally binding • Written(e.g. Memorandum of Understanding [MoU])
	c) Enforcement?	<ul style="list-style-type: none"> • Legal enforcement • MOU enforceable under contract law • Constitutional fines and punishments • Peer/social pressure

Adapted from Warner, 2001 (Warner, M. 2001. *Complex problems, negotiated solutions: tools to reduce conflict in community development*. London, ITDG Publishing)

Three step conflict resolution process

But often expensive and time consuming. The three main processes recognized for resolving conflict are:

- *Negotiation*, where the parties meet face-to-face to reach a resolution which is mutually acceptable;
- *Mediation*, where a neutral party helps in the negotiation process; and
- *Conciliation*, where a neutral party communicates separately with disputing parties to try to reduce tensions and agree on a process for resolving the dispute

Resolving conflict through law

Developing laws and policies that clarify the situation

- Ideal but long term

Taking conflicts to court

- Can result in clarification of the law and provide precedents which can help resolve
- future conflicts

Negotiation is 'back and forth' communication designed to reach an agreement

Ideas for effective, negotiation-based conflict resolution:

- Establish clearly what the nature of problem is and who the stakeholders are.
- Concentrate on the problem itself, not the personality of people involved
- Ask the people involved to focus on their **interest** in the problem, not on what their **position** is. For example:
 - A forest user group has adopted the position that except for fuelwood for household use, no wood should be removed from the forest. This means that to get the wood they need to produce charcoal for their trade, the Blacksmiths have to break the operational plan rules. This is probably due to a problem in the investigation phase of forest user group planning which resulted in the needs of one of the interest groups (in this case, the Blacksmiths) being overlooked. There is a conflict between the Blacksmiths' **position** that they need wood from the forest and the **position** of the rest of the forest user group that no extra wood should be collected. All the forest users need access to a blacksmith for making and sharpening their tools however, so it is actually in their **interest** for the blacksmiths to be able to get the wood they need for charcoal making. If the two parties look at their **interests**; the forest users group members' needs for Blacksmith services, and the Blacksmiths' need for charcoal to provide that service, they are more likely to work out mutually acceptable forest management rules, than if they just stick blindly to their positions.
 - To focus on their **interests**, the conflicting parties should try to analyse the situation using 'why' questions.
- Think of a variety of options for resolving the conflict and the positive and negative aspects of each option.
- Repeat this exercise from the point of view of the other party. That is, think of what options might suit them.

- Thinking about options from the other party's point of view may lead you to think of some new solutions to suit both sides. If it does not offer a new solution, it will at least give you some more ideas about how the other party might be thinking.
- Consider what you can do if no agreement is reached
- Working out what the best alternative would be to an agreement will help you work out how hard you are prepared to bargain.
- Find out as much as you can about the issue from both parties
- A neutral person can be useful for this fact finding.
- Have a meeting with the other party
- Consider inviting a neutral party to help run the meeting (a mediator).
- Conciliation: If the parties are too angry with each other to have a useful meeting, a neutral party can be asked to meet with each party separately with the aim of reducing tensions and agreeing on a process to resolve the conflict.
- To ensure a lasting resolution, make sure that **all** stakeholders (both powerful and weak) are meaningfully involved in the conflict resolution process.



What happens when the opposing parties have unequal power?

In some conflicts, one party has much less power than the other, however, there are some unrecognised sources of power, which the weaker group might be able to use to their advantage.

Other sources of power include:

- Better information about the local situation;
- A good idea about how to resolve the conflict;
- Good negotiation skills;
- The ability to mobilise the people to implement the solutions; and
- Political legitimacy before the local or regional community (for example, the rights of disadvantaged groups are being increasingly recognised and protected by law).



Supporting Forest Protecting Groups to Implement Community Forestry

Identifying support needs

To date most work to establish community forestry has concentrated on setting up of forest user groups and facilitating protection activities around the forests on which the community claim a stake. It is important that established forest user groups also get the support they need to implement their operational plans.

Implementation refers to putting into practice what has been decided and agreed upon during negotiations. Making agreements through negotiations and writing operational plans are not ends in themselves. Investigation and negotiation are useful steps in community forestry only if operational plans are implemented to improve management of the forests by forest users. It is during implementations that the aim of transferring authority from the forest department to the forest users is realised.

It is important that decisions made while negotiating the operational plan are put into practice as soon as possible. It can sometimes take weeks or even months to get an operational plan approved for implementation.

There are skills involved in operating as a forest user group which many villagers will never have had the chance to learn. In addition, new forest management skills may be necessary as the forest becomes more productive. Recent studies have shown that many well managed community forests can sustainably produce forest products in excess of subsistence needs, provided that appropriate forest management systems for both timber and non-timber forest products are implemented. The income generated from this excess can be used by the forest user groups for community development activities. To do this, forest users will need to develop skills in forest harvesting and regeneration as well as in such activities as processing and marketing forest products and managing their new income for community development.

The viability of community forestry depends on forest user groups eventually becoming self-reliant, but they need to be empowered through access to training and support for this to happen. Unfortunately, at present once a forest user group assumes the responsibility for a local community forest, only limited support is available to them.

With the help of a facilitator they need to be able to identify what support the forest user group needs.

Problem	Support needs		
	What	Who	How

While planning the support needs the forest user committee should examine

- Are the real problems being addressed?
- Are the most urgent needs getting support, or just the ones that are easiest to support?
- Are the priorities of forest users and the Forest Department being considered?

In collaboration with a facilitator the forest user committee need to;

- Identify the problem (use PRA tools to encourage forest user group to work out what problems they are having and consider the requirements of forest department or the facilitating agency. For example, a forest user group may not feel that recording minutes of meetings is very important, but the FD or facilitator will need to be able to check the minutes to get an idea of the financial, social and bio-physical aspects of forest user group activities. It should also be looked in that the forest user group report the forest department annually. So if minutes are not kept, there is a problem, even if the forest user group does not identify it as a problem)
- Analyse the cause of the problem (consider the problem carefully to see what the real causes are. For example, a problem over finances might be due to lack of financial skill or it might be due to poor communication or record keeping. Some problems might be due to lack of resources than training)
- Identify the solutions (work out solutions to problems, including **how** the solution can be implemented; solutions may include training, providing necessary forms, opening a bank account or attending a meeting; consider what is needed in terms of time, finances, and resources; if the resources are not available from forest Department, consider whether they are available from other sources such as within the village community or from NGOs)



- Prioritise implementation of solutions (it will not be possible to address all the support needs at once, so the facilitator should do some ranking exercise with the forest users to establish their priorities for support)

Forest users training needs

List of training needs : Example

Training needs	What	Who	How*
Financial management of committee			Committee organisation and management
Agroforestry technique			Training by relevant agency
Setting up an enterprise (cooperative)			Training from an NGO or a relevant agency who already has experience in this
More training on RRA/PRA			An NGO having expertise in this field
Measuring sustainability of resource use			Monitoring the condition and biodiversity of community forests

Ranking training solutions

Training solution (from <i>how</i> column)	Votes	Total	Rank
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Demonstrations

Consider a case that in some forests, immature trees have been felled; branches have been pruned to the top of trees; and new seedlings have been cut, while mature dead and dry trees have been left behind. In contrast, other forests are dense, well developed and under-utilized. The way a forest is treated determines, to a large extent, its productivity and biodiversity. The application of simple techniques for properly selecting and harvesting branches, multiple stems and trees can both provide forest products for people to use and help to improve the long term productivity of the forests. These techniques should be imparted to the users by demonstrating a result, demonstrating a method and exposure visits.

Demonstrating a result can show forest users what to expect after a particular forestry practice has been in use for a certain period of time. An essential feature of this is making comparisons between practices. The main objective of such demonstrations is to generate interest and encourage people to learn more about various practices.

Demonstrating a method can show how to do specific jobs such as: sowing seeds, preparing grafts and cuttings, pruning branches, singling multi-stems and selecting trees for thinning.

Both kinds of demonstrations can be arranged in the forest user group's own forest or the forest of other user group.

Guidelines for a good demonstration

- 1) Determine:
 - What is to be demonstrated
 - Who is to attend the demonstration
 - Where is the best location
 - Who will demonstrate
 - How much it will cost and who will pay
 - How participants will be advised
- 2) Obtain approval from the user group to conduct demonstration in their forest
- 3) Arrange for participants to be advised
- 4) Obtain the necessary equipments for demonstration
- 5) Arrive early at the demonstration site

Guideline for a good exposure

- 1) Determine:
 - What is to be shown
 - Who is to attend the field excursion
 - Where the best location is for field visits
 - Who is to be contacted
 - How participants will travel
 - How much it will cost and who will pay
 - How participants will be contacted and assembled
- 2) Make arrangements for transportation, food and lodging (if staying overnight)
- 3) Obtain confirmation from the host users
- 4) Determine the date and time of travel
- 5) Obtain a letter of introduction or other credentials

Some of the techniques which should be demonstrated

Demonstrations	Exposure
Pruning	Silviculture
Singling	Management
Thinning	Community meetings
Plotting	Nursery arrangement
Planting	Agroforestry
Weeding	Distribution of products
Record keeping	

Forest user group organisation and management

There are a number of administrative systems needed for the smooth running of a forest user group. As many forest user groups do not have skills in administration, the establishment or improvement of such systems may require significant input from the field.

Administrative system which are needed:

- Organising effective meetings
- Explaining to forest users what the prescriptions in the operational plan mean and how to carry out the prescriptions
- Managing protection and management systems
- Arranging fair elections
- Managing finance of forest user group
- Record keeping
- Seeking external support when required
- Establishing decision making processes for the equitable use of forest user group resources or for the resolution of conflicts

Forest user group may not be familiar with election processes, the opening of bank accounts where forest user group revenue will be deposited, the running of open and productive meetings or assemblies, or the process of determining appropriate areas of rural development on which to the revenue.

Determining administrative support needs for forest user groups

Basic administrative skills	Do committee members have experience in this area	Are committee members' skill for this adequate?	How can a facilitator support committee members to develop the necessary skills?	How to see if committee members' skills are adequate
Committee elections				<ul style="list-style-type: none"> - Semi-structured interview-Check if make up of committee is equitable - Survey extent of voter participation

Opening and managing bank accounts				<ul style="list-style-type: none"> - Semi-structured interview - Discussion with individual account holders
Organising and running effective meetings				<ul style="list-style-type: none"> - Check meeting records-Semi-structured interviews with interest groups
Budgeting and prioritising spending				<ul style="list-style-type: none"> - Check if priorities are built into operational plan-Check if needs are determined equitably-Check if proposals match priority needs



Vegetation Monitoring

Parameters of Vegetation Monitoring

A number of parameters help in estimating the tree diversity and productivity in a given area. Some parameters such as height and girth of trees, or species richness and density are relatively simpler to measure, than, others such as standing biomass and productivity in any ecosystem. The simpler measures are used to estimate these more complex and crucial parameters. It is necessary to study these parameters to understand the dynamics of tree biomass in any ecosystem.

All plants that have a girth at breast height (GBH) more than or equal to 30 cms (diameter at breast height – DBH of 10 cm) can be considered as trees while those with smaller girth sizes may be regarded as saplings.

Tree parameters to be measured include the following

1. Tree species richness and abundance
2. GBH or DBH
3. Height
4. Extent of canopy cover
5. Total yield of non-woody products of trees (fruits, leaves, gums, etc.)

Using the first four measures mentioned above, the following parameters can be estimated

- Species density and diversity index are determined from species richness and abundance
- Basal area, standing biomass and productivity can be estimated using GBH or DBH, height and tree density
- Important value index (IVI) of the different tree species can be estimated using species diversity, abundance and basal area of the respective species
- The tree profile can be assessed with the help of basal area, height and canopy cover.

Site Selection

Select a site where vegetation would be monitored. Different sites may represent different stages of protection. Accordingly there would be visible changes in forest structure and composition of vegetation. It may be useful to select sites at different distances from the

settlement. Plots closer to the settlement are likely to be more degraded than plots farther away. Generally, vegetation exploitation advances in concentric rings around the settlement.

Site selection may be based on whether the plots have been subjected to management inputs and protection or not. For example, the difference in vegetation regeneration can be clearly observed and measured between a plot where free grazing is practiced. The size of the plot depends on the purpose of the study and the condition, heterogeneity in vegetation, and size of the forest areas.

Techniques of vegetation analysis by quadrat method

The most common method employed for vegetative analysis is a quadrat technique. A quadrat is typically a square plot, however rectangular or circular quadrates. In the quadrat method, a specific size quadrat and its replications are marked in the field and vegetation data is recorded for flora falling inside quadrats. It is far easier to estimate crucial parameters such as basal area per ha., species diversity per ha., and standing biomass per ha., using equations through the quadrat method than other methods. After selecting the site and locating the quadrats, the next step is to record relevant observations. In the pre-selected locations, mark the four corners of the quadrat for the defined dimensions, attaching strings or ropes to mark the perimeter of the quadrat. Data to be recorded will vary for trees, shrubs and herbs. Observations should be recorded for all plants lying within the quadrats.

How to decide sample plots

The following guideline may be followed for the purpose of vegetation monitoring.

- Locate the forest or site where vegetation monitoring is to be done. See where the forest stands – on the hills, on the plains, contiguous or continuous with hills and plains, small hills, valleys etc.
- Make an ocular estimation of the hill forests. If the hill is too high, divide the hill into three transverse sections (foothill, middle, top). If the hill is not very high then take two transverse sections. From these sections the sample plots will be selected.
- Take 5% of total forest area as a standard sample for vegetation monitoring. On the basis of that decide number of sample plots (For example if the forest area measures 100 hectares, 5% of it will be 5 ha. Convert this 5 ha. into plots measuring 100 mts X 40 mts (one acre). Thus there will be 13 plots as samples)
- Generally, vegetation exploitation advances in concentric rings around the settlement. Leave about 20 meters from the foothill towards the hill forest and take the first section (100m X 40m). That means a fringe area of 20 meters around the forest is ignored from the survey.
- After deciding number of sample plots, consider how many plots from each transverse section shall be surveyed for vegetation. (For a high hill forest one may consider to survey 4 plots from foothill, 4 plots from middle hill, 4 plots from top hill, and 1 plot from plantation or stand or village forest. Similarly in case of a small hill take

6 plots from foot hill, 6 plots from hill top and one plot for plantation or village forest or such)

- Convert each section of 100 mts X 40 mts size into 10 plots (quadrates) of 20 mts X 20 mts.
- Give codes to sections such as A, B, C, etc and number plots under each section as 1,2,3.... Thus there will be 10 plots under each section. (Plot references may be quoted as A/1, A/2,... A/10)
- Find a reference such as a huge tree, pillar mark of forest department, huge rock or the kind for each section of the hill where sample plots are to be surveyed. Start the survey from reference marks.
- If there are trees in croplands, or if croplands are part of forest, plots may be laid during non-cropping season only.

- Rope (20m x 2)
- Measuring tape (for GBH)
- White powder (lime) or ash
- Wood chalk
- Square frame (to measure 90° angle)
- Knife, small axe for bush cleaning along plot lines
- Paper, pencil, eraser, ruler/ printed format
- Clipboard

Organising the surveyors

- Make a team of five active people for the survey. One of the team members should be having good knowledge of identifying species in local names. At least one or two members of the team should be competent in standard arithmetic calculation and writing
- First measure a sample plot. Then divide the sample plot into 10 plots of 20 X 20 size. Use lime for marking the plot boundaries
- Study the trees, seedlings, shrubs and herbs found inside the 20X20 boundary
- Keep two persons engaged in counting and marking trees and taking Girth at Breast Height (GBH). Keep two persons engaged in regeneration count. The fifth person may assist others in identifying species or any spot requirements. Note the readings carefully.

Note: *Girth (circumference) of a tree at a height of 1.37m from the ground is considered as the standard breast height.*

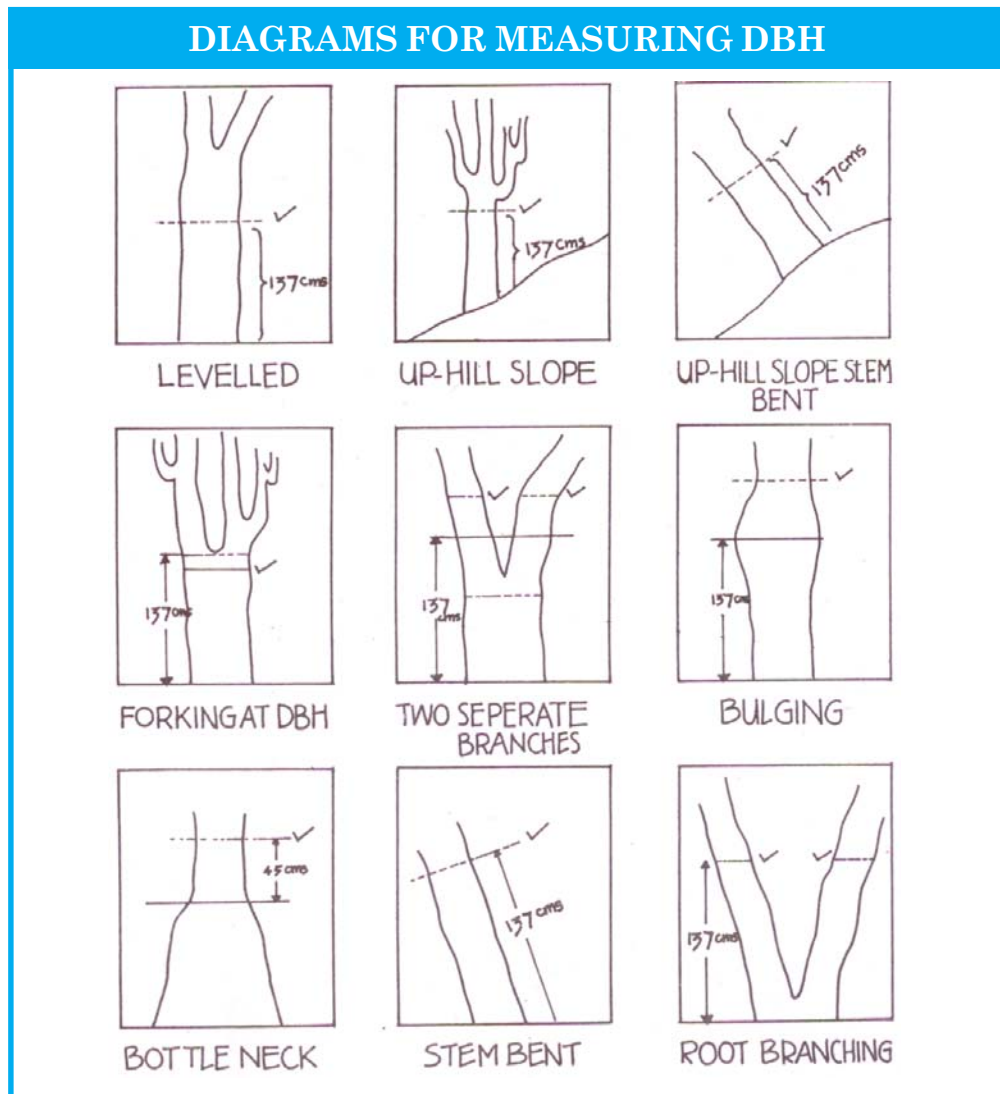
- Make an approximate estimation of height of the tallest trees found in each small plot.
- Carefully record the species and number of species

Species density

Density is the number of individuals of a species in a unit area. Density is also an indicator of abundance of the species. It helps to identify the dominant and rare species. It is also an indicator of standing biomass and productivity in a region.

Density estimation for a sample data from plot study method:

- the total number of each species in each of the plots are determined
- total area (in hectares) of all the plots sampled is known
- density of a tree species in the land type per hectare



$$\text{Density of trees per hectare} = \frac{\text{Total number of trees in the sample}}{\text{Total area of the land type sampled}}$$

Example: Say, there are a total of 500 species in a sample of 100 meter x 40 meter (one acre) plot. One hectare is about 2.5 acres. Hence the calculation will be $500 \times 2.5 = 1250$ trees per hectare.

Height of Trees

It provides information on the vegetation, growth rate and length of the bole (main stem or trunk). It may also be another important measure to estimate the standing biomass of the trees. Two easy methods may be tried to estimate height of trees.

1. Take a long pole or bamboo. Mark the units of length (meters) on the pole. Keep the pole near the tree and find the height. But this method may not be useful when the trees are very tall.
2. By eye estimation. This can be followed when the tree population is thick, as in a forest or a plantation, where movement and use of any instrument becomes difficult, as other trees may come in the way of viewing treetops. In such cases, the trees can be classified based **on** rough eye estimations into few height classes. For example, less than 5m, 5 to 10m, 10 to 15 m and greater than 15m.

Basal Area Estimation

It is the area occupied by the base of a tree. Basal area is a useful measure of the condition of different forest area. For plantations, it can also be used to compare stands of the same species, age and height. In undisturbed natural forest, basal area is a good measure of site potential, and in disturbed forest, an indication of the level of degradation.

Basal area is most useful when combined with other measures of forest condition especially stocking and canopy density. It can be easily measured at the same time as these other measurements are made.

It is considered as a good indicator of the size, volume, or weight of a tree. The GBH or DBH measures are used to calculate the basal area. It has importance, for it provides information on the proportion or dominance of larger and smaller trees in an ecosystem.

Also, it is one of the most important parameters in estimating the standing biomass in a given area, which in turn, is used as a measure of productivity. It is an indicator of the status of the standing biomass i.e. whether it is degrading or improving.

Calculating basal area from the measured girth or diameter of the trees

The girth or circumference of the tree is equal to $2\pi r$; where, π is 3.14 and r is the radius. The radius (r) can be calculated from the girth (GBH) of the tree as follows:

$$GBH = 2\pi r, r = GBH/2\pi$$

If the diameter (DBH) is known, $r = DBH/2$

The basal area (πr^2) can now be calculated thus:

$$\text{Area} = \frac{(GBH)^2}{4\pi} \text{ or } \frac{\pi(DBH)^2}{4}$$

Calculate total basal area of different tree species

After the basal area of the sample trees are calculated, the mean value and the total basal area of all species can be determined by adding these values.

Measuring Canopy Density

Canopy cover is defined by the extent of ground area covered by the spread of tree branches and leaves. It indicates the openness of the ground to sunlight, and suggests the gaps available for natural regeneration or grass growth. Good canopy cover suppresses grass and herb plant growth. Thus canopy cover data is important for decisions on vegetation manipulation (pollarding, pruning, removal) to encourage grass productivity or shrub growth as well as to identify shade loving plants.

Canopy density is a good, quick method of assessing forest condition especially in degraded forest areas. It tells you how much of the area in the forest is actually covered by tree crowns. What percentage (or proportion) of the forest area is covered by tree crowns can be known from canopy density. It can be measured visually or using a spherical densimeter.

Canopy density and forest condition

Condition	Good	Moderate				Poor			Open	
Density	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
Percentage	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%

Limitations

- Canopy density gives no indication of the age/size of the trees. For example, a forest with 0.9 (90%) density could consist of either many young pole stage trees, or fewer large spreading trees.
- Measurement of canopy density is affected by season (i.e. whether deciduous trees have their leaves or not) and weather (i.e. whether it is sunny or cloudy)
- Measured on its own, canopy density gives no indication of abundance of regeneration, therefore a forest with good canopy density may have no regeneration
- Ocular measurements of canopy density tend to be fairly inaccurate and suffer from observer bias.



Silviculture and Harvesting

It is important to impart knowledge and technology with the forest user groups about how they should treat and harvest their forest to achieve the objectives of both users and the government. Sound advice must be based on the type and condition of the forest, the needs and preferences of forest users for different forest products, and silvicultural practices that ensure sustainable forest use. There is need to impart training on

- Silvicultural options for harvesting and treating different forest types;
- The effect of specific silvicultural treatments on forest structure, species composition and the capacity to regenerate
- Range of forest products, and the relative quantity of each product type that can be provided by each silvicultural option over time

Supporting forest user groups in silviculture and harvesting

Issues to consider

- The users need to know that the forest can be changed to suit their long term needs by using various silvicultural and harvesting treatments.
- The use of the forest must be sustainable.
- The condition of the forests and the preferences and needs of the users must be considered when giving silvicultural advice to the users.
- The forest user group must decide which sustainable harvesting and silvicultural option should be used
- Harvesting and silvicultural prescriptions in the operational plans must match the ability of the users to implement them with minimum training.
- The forest user group may require help in choosing and implementing harvesting and silvicultural prescriptions
- Monitoring will be necessary to ensure the selected strategy is being applied correctly and is satisfying the requirements of both the users and the government.

Information required to formulate silvicultural advice

- The type structure and species composition of the forest
- The risks posed by fire, grazing, pest or disease
- The management objective decided by the forest user group, including their needs and preferences for forest products

- Past and present harvesting systems and ideas suggested by the forest users
- The effects of specific silvicultural treatments on forest structure, species composition and capacity to regenerate
- Knowledge of silvicultural options for harvesting and treating different forest types
- The range of forest products, and the relative quantity of each product type, that can be provided by each silvicultural option over time.

Some silvicultural options

Silvicultural options depend on the current forest type and the condition and the long term aims of the forest user group. Forest type and condition are based on the vegetation type and condition class from the Forest profile by rapid assessment.

Forest Type and Condition	Long term product aims	Management objective	Initial treatment
Shrub land <ul style="list-style-type: none"> • Very degraded or degraded 	More fodder, leaf litter, bedding and small firewood available	Improve shrub land condition and encourage growth of standards	<ul style="list-style-type: none"> • Regeneration to encourage desired shrubland species • Coppicing Weeding • Coppice with standards
	More fodder, leaf litter, bedding and small firewood available plus timber, poles and large fore wood	Convert to forest	<ul style="list-style-type: none"> • Regeneration to encourage desired tree species • Coppicing • Singling and pruning • Weeding • Thinning
Shrub land <ul style="list-style-type: none"> • Medium or good 	Supply of fodder, leaf litter, bedding and small firewood on short rotation maintained and improved	Maintain or improve shrubland condition and encourage growth of standards	<ul style="list-style-type: none"> • Regeneration to encourage desired shrubland species • Weeding • Coppice with standards

	Supply of a range of products such as timber, poles, firewood and fodder maintained or increased	Broadleaf forest improvement	<ul style="list-style-type: none"> • Regeneration to encourage desired tree species • Coppicing • Singling • Pruning • Thinning • Weeding
Broadleaf <ul style="list-style-type: none"> • Very degraded or degraded 	Supply of a single product type such as fodder or leaf little increased	Covert to shrubland	<ul style="list-style-type: none"> • Regeneration to encourage desired shrubland species • Coppicing • Weeding • Coppice with standards
Broadleaf <ul style="list-style-type: none"> • Medium or good 	Supply of existing range of products maintained or increased	Broadleaf forest protection and management	<ul style="list-style-type: none"> • Regeneration • Thinning • Pruning and lopping • Singling • Harvesting

Agro Forestry and Private Forestry

Agroforestry is any land use system that combines trees with crops or animals, or both, on the same area of land, either alternately or at the same time. It is also a system that is independent of land tenure that is it can be practised on community or private land. Private forestry can include agroforestry as well as more traditional forestry, the distinguishing feature of private forestry is that it takes place on private land.

Agroforestry and private forestry go hand in hand with community forestry and can have an important role in relieving the pressure on community forests. This can make implementations of operational plans for community forests easier. By improving fodder production through

Definition of agroforestry

Agroforestry is any land use system in which woody perennials (trees, shrubs, palms, vines or bamboos) are deliberately integrated with crops or animals or both on the same piece of land. The integration can be in a spatial mixture (at the same time on the same area) or in a temporal sequence (one after the other on the same area).

There are normally both ecological and economic interactions between the woody and non-woody components of an agroforestry system.

agroforestry it is possible to reduce pressure on a community forest in the short term. The reduction in pressure gives the community forest time to recover. The rate of recovery can be improved through planting and careful silviculture. Once the community forest is restored to full productivity, the villagers will benefit from both private and community forestry.

Definition of private forestry

Private forestry can include agroforestry and can also mean more traditional forestry such as plantations. The distinguishing feature of private forestry is that it takes place on privately owned land.

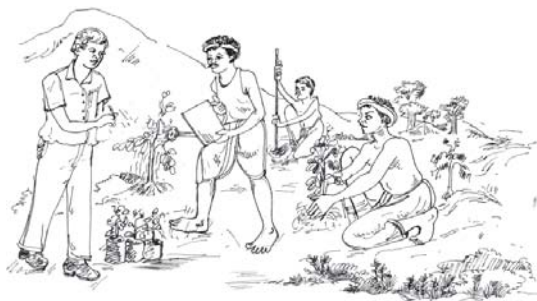
Some examples of Agro Forestry Systems

- Restoring degraded land using both trees and crops
- Growing trees, shrubs or bamboo along the boundaries of cropland or on terrace walls
- Combining trees and grazing through managing a forest to encourage annual fodder species (such as grass) as well as trees and also managing grazing animals in a forest to ensure that trees are not damaged
- Growing spices such as cardamom or ginger as an understorey of a planted or natural forest
- Managing vegetable gardens which integrate tree crops and annual vegetable crops
- Planting woody perennials as a wind break
- Integrating fruit trees and crops, for example a mango orchard with crops planted between the trees

Choice of woody perennials

While selecting woody perennials, consider the following characteristics

- size, growth, habit (shape of plant), rooting characteristics (deep rooted trees will have less impact on crops than shallow rooted trees), water use and shade (trees that do not create heavy shade are less likely to reduce crop yields).
- capacity for multiple use (combinations of use such as: fodder, firewood, fruit, medicinal use, timber).
- nitrogen fixing capacity for improving soil fertility.
- hardy trees have a better chance of survival.
- some trees produce substances that discourage other plants from growing and thus will not integrate well with other plants (allelopathy).



Options for Sustainable Harvesting of Forest Resources

Sustainable harvesting of firewood

It is observed during the survey that in most of the sites the community members use those species as fuelwood which have less timber value. In Dhenkanal *Karada* is being used as fuel wood. The remnants of the thinning and cleaning process are being used by the community members. There are specific rules and regulations developed by the committee for use of the fuel wood.

1. Any member who need to go forest to collect the fuelwood has to inform the president of the committee.
2. The president has to give the permission and a receipt of Rs 2/- to the member allowing to enter into the forest
3. In each day any member can collect a head load of fuel wood with a single receipt

Options for sustainable harvesting methods of fuel wood

Option-1

The committee has to calculate the requirement of fuel wood by the villagers. The process of estimating the fuel wood requirement by the villagers is mentioned in the box.

Estimate the total household in the village and the population and also the households fully and partially dependent on forest for fuel wood. Then estimate the number of days the households depend on forest for the fuel wood. Estimate the quantity of fuel wood required by the households in a year. Then estimate the total requirement of fuel wood required by the village in a year.

1. Total HHs:.....
2. Total population:
3. Number of HHs fully dependent on forest for fuel wood:
4. Number of HHs partially dependent on forest for fuel wood:
5. Other sources of fuel wood:
6. Quantity of fuel wood required by individual HHs in a year:
7. Total fuel wood requirement of the village in a year:
8. Species in the forest consumed as fuel wood:

Option –2

Estimate the quantity of fuel wood available in the forest. The following steps need to be considered for estimating the availability of fuel wood in the forest.

- 1:** Fuel efficient stoves and biogas for cooking could be fully explored. If every family in Motipipal hamlet shifts to efficient stoves, energy saving would approximate about 40%, reducing the annual requirement of firewood from 260 mt. per year to 156 mt per year, however limitations on such raw materials as dung, water and capital investment requirements may pose obstacles.
- 2:** Considering a theoretical standing biomass of 120 mt per ha, and a net primary productivity of woody biomass of 7 mt per ha. per year (assuming that 6% of standing biomass is the net primary productivity), the local community could harvest about 50-70% of the productivity for sustainability, or 3.5 mt per ha. per year.
- 3:** If option 2 requires travelling longer distance and extra human effort and if the community prefers clear-felling over selective harvesting, then replanting must be immediately undertaken with local species which profusely coppice. Valuable NTFP-yielding trees like mahua, karanj, and mango should be excluded from clear-felling.
- 4:** The community could divide the forest into 10 blocks and could rotationally harvest in cycles each year, allowing 10 years recovery to regenerate. The harvest in each block could also be done at various levels: 25% of standing biomass, 50% of standing biomass, or 75% of standing biomass.

Guideline for sustainable management of NTFP

The word sustainability means the ability to maintain something undiminished over some period of time (Lela and Norgaard, 1996). This word is used in many different contexts. Below are some precise meanings of the term as used in forest management, adopted here for NTFP management.

Sustainable NTFP yield- this was the main forestry paradigm in the mid –1900s when forest management emphasised the production of timber. Sustained yield of NTFP occurs when the yield or production of a NTFP is maintained as a constant rate over the long term.

Ecological goals

- Harvesting of NTFP resources is sustainable and has low impact on the forest ecosystem.
- Protected areas, delineated to encourage natural reproduction of NTFP resources, are maintained for long term.
- Natural forest structure and regeneration is maintained.
- Natural forest, agro forest and shifting agriculture fallow management systems all contribute to the maintenance of genetic and ecosystem diversity.
- Critical ecosystem functions (water, soil etc) are preserved

Social goals

- The community participates in and monitors all planning of NTFP management.
- The community based organizations caters to the diverse interests of all the different NTFP users and stakeholders
- Community tenure to forest lands and resources is secured for the long term and is clearly defined, known and respected
- Effective mechanisms for conflict resolution exist.
- The community has mechanisms for enforcing rules for NTFP harvesting and management.
- Appropriate methods exist for NTFP assessment and monitoring by community members.
- Local knowledge is respected and used in NTFP resource and forest ecosystem management, and is transmitted to younger generations
- Sites of special social, cultural, spiritual, historical or tourism significance are maintained.

Economic goals

- The role of NTFPs for community's health, diet and other subsistence needs is assured.
- NTFPs contribute to the economic wealth of all sectors of the community
- The community's capacity for commercialization of the NTFP is raised
- The community organizations distribute benefits from NTFP equitably

Political goals

- The community participates fully with other stakeholders in NTFP management.
- Agreement has been achieved with neighbouring communities on rights to forest areas and NTFP resources
- The community's land and resources tenure system is guaranteed by the state for the long term
- The community's management of NTFPs is compatible with state's goals for forest management and development.

The above mentioned goals may not be appropriate for a given community. Each community must carefully discuss and define their particular goals.

Existing Community based NTFP Management System

The existing community based NTFP management system covers almost all the goals that have been discussed above may be in a very informal way. A traditional and a contemporary NTFP management system based on community's approach have been mentioned in the next page.

In Bastar district of Chhattisgarh, the adivasi indigenous people use the mechanism of the recently revived festival of mangos to delay the harvest of mangos until a significant proportion of the fruit is ripe. In these communities, the festival, and hence the harvesting of mangos, can not begin until the elders have determined that the fruits are ready. This has the effect of increasing the capacity for regeneration of the mango trees (Ramnath, 2003). The Adivasi people also respect the traditional restrictions applied to sacred groves, where people are not allowed to climb or harvest wild mango trees. This setting aside of 'seed trees' that are not disturbed by people has the effect of enhancing regeneration of mango trees and providing for the needs of fruit- eating animals (Ramnath, pers.comm.,2003).

Some examples of sustainable harvesting practice

Amla (*Emblica officianalis* Gaertn)

Sustainable Harvesting Practices

Generally amla fruits are ready for harvesting in Deepawali i.e. in November. The nature of amla fruiting is as under:

1. Fruit collection starts after 4 years of plantation
2. New leaves- March to April
3. Flowering- March to May
4. Fruiting- September. Maturity attains by mid November.
5. Color of fruits needs to be harvested -green yellow to brick red.

How to Harvest

On deciding the purpose for which amla required one has to collect amla by two means 1) by shaking trees, thus makes the fruits falling in the ground and gather it 2) can be plucked using long poles with a hook. Cutting of trees should be avoided as fruit collected from the cut out trees. There is every possibility of loosing medicinal character and increase of tanning contents in the fruits collected from the cut out trees.

Harvesting time

Amla should be plucked from the tree before 10 AM morning. With increase of day temperature fruits can turn black and loose its quality. After collection these amla should be stored under shade till processing work begins.

Do's and don'ts

- Collect green yellow amla
- By shaking trees or by plucking
- Dispose green yellow amla within 48 hours

- Process amla within 48 hours of collection
- Sell dry amla within a year
- Pack in clean bags
- Don't mix damage black, immature, green amla
- Don't collect green amla
- Don't cut trees
- Don't store in cool and wet places

HARIDA (*Terminalia chebula*)

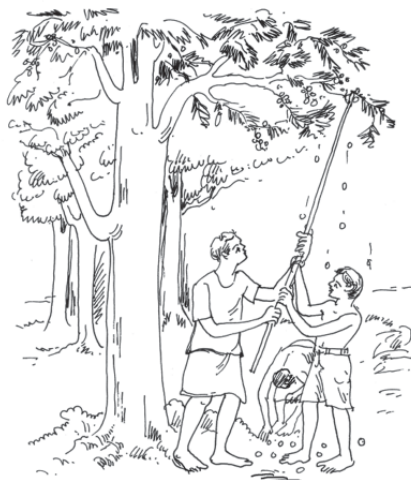
Harvesting Techniques

The fruits fall on the ground after ripening. In mid Dec to mid Jan the greenish yellow color of the harida should be collected by shaking trees. It is the best period for collection of harida. In case of greenish yellow harida it should be dried on a bamboo mat or in thorny dry place for a period of three or four days. It should not be dried on the earth directly otherwise there would be fungal infestation. The hollow decayed nut should be separated from the harida and good quality harida kept in clean bag.

BAHADA (*Terminalia bellirica* Roxb.)

Harvesting Techniques

The fruits fall on the ground after ripening. In mid Dec to mid Jan the greenish yellow colored bahada should be collected by shaking trees. It is the best period for collection of Bahada. In case of greenish yellow bahada it should be dried on a bamboo mat or in thoroughly dry place for a period of three or four days. It should not be dried on the ground to prevent fungal infestation. The hollow decayed nut should be separated and good quality fruits should be kept in a clean bag. Don't mix the drenched fruits with the dried ones otherwise there would be fungal infestation.



Do's and Don'ts:

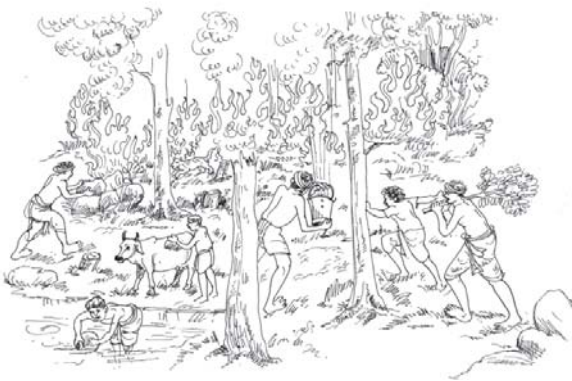
- Collect Bahda during the month of January
- Collect bahada by shaking the tree.
- Greenish and ash coloured Bahada has to be kept separately as these are of better quality.
- Crushed Bahada to be sun dried for 2 days before storing and it should be dried on a dry and ventilated place.

The group involved in the management of local forests should document their best practices which would help them deciding the harvesting protocol for certain items available in the locality. Once such documentation is made it would also help in sustainable management of NTFPs in the locality.

Step wise guide to sustainable NTFP management

Delineate the management zones in your protected forest

- Decide the No-harvest zones: where no harvesting of NTFPs is permitted. The No-harvest zones may be permanent zones, temporary zones that enable a degraded forest to recover, or rotating zones in which harvesting of NTFP is only allowed at periodic intervals.
- Decide management zones, in which other management practices besides harvesting are specified e.g. agro forests.
- Decide protection zones, where main aim is to preserve the forest eco-systems, function and bio-diversity e.g. areas of cultural, spiritual, importance.



Do test harvesting for available NTFPs:

Tests of harvesting helps a community to learn how best to harvest or otherwise manage NTFPs. Examine different procedures of harvesting and build a consensus for best practice.

Maintain harvest records used in NTFP management:

The communities should use harvest records to estimate the current harvesting level, or the amount of NTFPs that have been harvested in recent years from the management area. This will have determining whether the existing management system is sustainable and help monitoring the productivity.

Inventorise the available NTFPs in the area

This will help to delineate management zones, estimate the sustainable harvesting limit, examine population structure, examine population dynamics and help monitoring resource quantity and forest eco-system bio-diversity and functions.



Monitoring, Review and Revision of Community Forestry

Monitoring, review and revision of community forestry

Community forestry aims to conserve forests while providing for forest product needs of rural communities. To assess whether forest user groups are managing community forests in a way that achieves these aims, forest user group needs to monitor and review community forestry programs at the local level.

It should be remembered that monitoring is not a one off process, it needs to be repeated at intervals to be useful. Secondly, monitoring should be participatory as both forest user groups and facilitators have legitimate interests in management of community forests. Developing monitoring system that involves the active participation of forest user groups will help foster partnership between forest user groups and forest department. Although monitoring needs may vary between the forest user group and the facilitators, in many cases they will be similar.



To be effective, monitoring should provide accurate, relevant and timely information. There are a number of types of monitoring used in community forestry, generally they can be classified as:

- Monitoring the physical condition of forest
- Monitoring social and financial issues

What should be monitored for community forestry

Forest condition:

- how many trees and shrubs are in a forest patch compared with before
- how dense is the trees or shrub cover
- what is the average height of the tree layer
- what are the dominant species
- what regeneration of trees, shrubs and other non-timber forest product plant is present

- Biodiversity (how many different species of plants and animals are present and are they natural or introduced)
- Silvicultural treatment (what is done, when is it done, what is the result)
- Forest product availability (does availability change over time)
- Institutional arrangements (what forest user groups and committees have been formed)
- Forest user group meetings or assemblies (effectiveness, equity)
- Distribution of forest products
- Cost sharing for development
- Financial records
- Conflicts or disputes
- Income generating activities
- Others suggested by participants



Tools and methods for monitoring Community Forestry

- Field visits and direct observation
- Forest profile by rapid assessment
- Semi-structured interviews with forest users
- Semi-structured interviews with forest user group committee members
- Ranking tools repeated over time with exploration of the reasons for any change in ranking
- Secondary sources (such as meeting minutes or financial records)
- Participatory mapping
- Cross-checking on implementation practices
- Keeping records of social and financial aspects
- Simple forest and shrubland inventories

Monitoring Social and Financial Aspects

The social and financial aspect of forest user groups should be monitored so that effect of community forestry on self-reliance of forest users and the equity of forest use can be assessed.

Self-reliance and equity can be assessed by reviewing membership of the forest user group, cost and benefit sharing arrangements, financial management arrangements, and conflict resolution and decision making processes. Forest user groups that need little or no external support can be regarded as more self-reliant than those who need continual support. Groups that are self-reliant are more likely to be sustainable in the long term.

The way in which forest products are harvested and distributed can provide insights into equity issues, particularly whether subsistence needs are fulfilled. Similarly, information on the collection and use of forest user group funds can allow forest user group members to consider the equity of financial management.

The monitoring of forest user groups should involve the active participation of the members of the concerned forest user group. Information collected while monitoring social and financial issues can be used by the facilitator to raise awareness amongst forest users. It can also be used to design awareness raising and training programs to improve problem situations.

Some information is needed for the purposes of Forest Department. This information is used at the range, District and National level to assess the overall performance of community forestry.

Factors affecting the self-reliance and equity of forest user groups

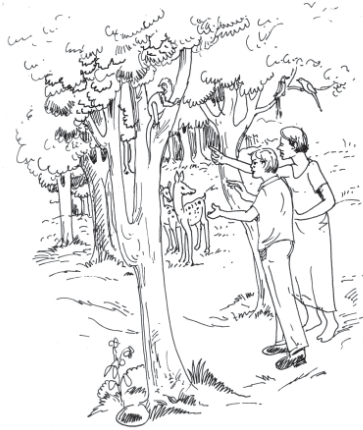
Assessing the sustainability of community forestry involves investigating the self-reliance and equity of forest user groups. Problems with forest user groups often arise because of one or more of the following factors

- The forest user group has been incorrectly identified. Either some legitimate users have been omitted from the group or some non-legitimate users have been included, or both;
- The forest users are unable or unwilling to make decisions concerning the management of their forest or affairs of the group without assistance from outside the group
- Conflicts arise over the distribution of benefits from the forest or the group. For example, the use of forest user group funds on local development activities are often concentrated in only one part of the forest user group area
- Conflicts arise within the group or between the group and outsiders about the use of the forest, the group's funds or the affairs of the group
- Decisions and actions of the forest user group committee are not made public to all forest users and suspicions arise as to the actions of committee members
- Decisions or actions of the forest user group result in some or all of the users being disadvantaged.

Monitoring the condition and biodiversity of community forests

Community forests should be managed in an ecologically sustainable manner. To monitor this information on forest condition and biodiversity is required so as to evaluate changes over time. Periodic measurement of ecological criteria on permanent plots may not be always possible. However, sketch mapping, measuring a limited number of ecological criteria within temporary plots and discussing changes in the forest with forest users would promise better results.

Forest profile by rapid assessment provides a useful estimate of forest condition but they are not very useful for establishing a baseline description of the condition and biodiversity of forest as an ecosystem. To do this requires a methodology that describes forest condition in more detail and the diversity of species present. A simple inventory method may be used for collecting information on the condition and biodiversity of the forests.



The condition of a forest can vary considerably over a short distance and an inventory should be able to account for as much of this variation as possible. This is achieved by first sub-dividing the forest into blocks based on major difference in forest type (this is usually done as part of operational plan). These blocks are the basic units of monitoring. Within each block variation is reduced by measuring 2% of the block's area in simple, temporary plots distributed across the block on a grid. Measurements are taken in each plot and then summarized for the block. The original plot data can be used to calculate the mean and standard deviation if required.

To be a useful monitoring tool, information needs to be collected for the same forest every three to five years. After each monitoring exercise the new information can be compared with the old information to give an indication of the biophysical changes that may have occurred. This information is useful for the forest user groups as it allows them to review their management practices and it is also useful for the forest department to monitor the condition and biodiversity of community forests over time.

Why monitor the condition of forests

Forests are important because they:

- Provide many useful products
- Provide habitat for many plant and animal species
- Help maintain clean water and air

Human being derive great benefits from forests, but they can also damage and destroy them. Monitoring forest condition can show if human activities are damaging a forest.

- To develop an understanding of forest conditions and natural changes over time (seasonal and long term)
- To develop an understanding of the effects of management practices (such as pruning, harvesting and burning) on the forest over time
- To see if and how forest use activities are changing the forest
- To see if management activities are improving forest condition as planned

Monitoring and review are an integral part of the planning process and of learning by doing

Why is biodiversity important

- Biological diversity refers to a variety of life forms in an area
- One simple measure of biodiversity is to count the number of different species present
- Biodiversity also includes diversity within species (for example: provenance, varieties, individuals)
- Plant, animal and human species depend on each other in complex ways
- Diverse ecosystems are better able to adapt and cope with human impact and environmental changes
- We do not know when a particular species or individual of a species may be important to our survival, for example:
 - a plant from a small area of forest in one country may be able to cure diseases in people all over the world
 - disease can destroy food crops, but breeding a wild variety with a cultivated variety may produce disease resistance
- By destroying species, we compromise the opportunities available to ourselves and to future generations
- Humans have already caused the extinction of many species

What part can community forestry play in conserving biodiversity

- In many places, the remaining forests are the ecosystems which have been least modified by humans – this makes them important reserves of biodiversity
- Many forests can not be conserved by being put into reserves because they are scattered and too many people depend on them
- Community management of forests can improve forest condition and increase the area of forests and community forests are generally managed for a variety of purposes. From this it is assumed that community forests in good condition will have higher biodiversity than degraded forests or agricultural land
- Monitoring will show what the effects on biodiversity are

The challenge is to manage forests so that people can use them and at the same time, maintain their biodiversity

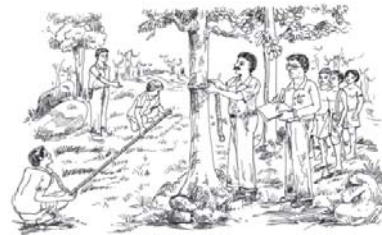
Basic measurements for monitoring the condition and biodiversity of forests

What	How to measure
Area of block	Ocular estimate Boundary survey
Forest structure	Dominance of tree species by basal area Dominance of shrub species by number Dominance of regeneration species by number Distribution of tree species by size class
Site occupancy	Stocking count of trees and shrubs Stocking count of trees and shrubs regeneration Basal area of trees
Biodiversity of trees and shrubs	Number of tree and shrub species observed

Simple forest inventory (SFI) and simple shrubland inventory (SSI) (Format-4)

What could be measured to monitor forest condition and biodiversity

- Soil fertility (mineral content and organic content)
- Structural diversity of plants – by age and growth form
- Biomass production
- Relative abundance of plant species
- Total biodiversity including animal species



Why use different methods for forests and shrublands

The forest inventory method is modified for shrubland because a different technique is used for measuring the site occupancy of shrubland. In forests, the diameter of stems at a standard height above the ground should be measured and total basal area calculated because this is easier to measure than crown cover or biomass. In shrublands, crown cover should be measured because it is easier than measuring diameters of stems, or undertaking destructive sampling of biomass to get a measure of the quantity of vegetation.

Basal area is the sectional area of a tree stem at breast height

Requirement for undertaking simple forest or shrubland inventories

- People: A measuring party of three to four persons required, consisting of a trained party leader and two or three assistants who can be relatively skilled.
- Equipment:
 - SFI and SSI plot form
 - Rope of different length (20m, 10m, 5m)



Definition, Meaning and Usage of Forest Management related terms

Agroforestry:

Agroforestry is any land use system in which woody perennials (trees, shrubs, palms, vines or bamboos) are deliberately integrated with crops or animals or both on the same piece of land. The integration can be in a spatial mixture (at the same time on the same area) or in a temporal sequence (one after the other on the same area).

There are normally both ecological and economic interactions between the woody and non-woody components of an agroforestry system.

Biodiversity:

The variety of species and habitats found in the forest. Not to be confused with biomass, this refers to the forest resources itself, and its productivity.

Broadleaf forest:

75% or more of the tree species present are hardwoods

Community:

The population of a village or an area, or any group of people, having some common interest (such as residence, kinship or religious affiliation).

Community Forestry:

The situation where rural people develop and manage forests as common property to support their farms and household economies. It aims to develop and manage forest resources with active participation of individuals and communities through the formation of village level forest committees, to meet their basic needs.

Conflict:

Differences of beliefs, ideas or interests between two or more people which are causing a problem

Conflict Resolution:

The means of solving the problems caused by differences of beliefs, ideas or interests.

Coppice:

new growth originating from existing stumps of shrubs or trees that have been previously cut or otherwise damaged near the ground. Some species also coppice from their roots

Coppicing:

Encouraging new growth from existing stems or stumps. Coppice can be left as multi-stemmed or singled to favour the most vigorous stem.

Coppice with standards:

Selecting some singled stems from an area of coppice to grow into mature emergent trees in a shrubland for the purposes of providing seed and ultimately, large sized forest products.

Crown cover:

The percentage of a given area of land which lies within the vertical projection of the edges of shrub or tree crowns which occupy the area

Demonstration:

To show by practical example

Development:

A process of social, economic, and technical change that provides the opportunity for economic betterment, greater human dignity, security, justice and equity.

Empowerment:

The process of obtaining power, access to resources and the opportunity to make decisions and take action on their own behalf, by people who previously lacked such power.

Forest users:

Forest users are those people who use forest resources and whose right to do so is recognized by one another in the community

Forest:

Vegetation dominated by woody plants more than 2 metres tall with a single stem or branches well above the base.

Forest management objective:

This describes the broad purpose for which forest management activities are being carried out. It is possible to have several forest management objectives for one forest area.

Forest Management Planning System:

The series of steps which need to be carried out to prepare a forest management plan. Different types of forest management plan require different forest management planning systems. Not to be confused with silvicultural system

Fully stocked:

A shrubland or forest is fully stocked if the shrubs or trees in a given area fully occupy the available area for growth and therefore achieve the maximum rates of production. For small shrubs, more than 10,000 plants per hectare may be necessary to fully stock a shrubland. For large, mature trees, as few as 300 trees per hectare may be required to fully stock a forest. Where canopy cover approaches 100% the site is fully stocked.

Gap creation:

Gap creation is a form of thinning where gaps are created in the forest to encourage the growth of understorey species. An example is the creation of gaps in a pine forest to encourage the growth of desirable broadleaf regeneration

Grassland:

Vegetation dominated by grass species with less than 10% of the area covered by tree or shrub crowns.

Harvesting:

Harvesting a mature tree, group of trees or area of shrubland specifically to obtain forest products

Interest group:

People within the forest user group with a particular need or concern related to forest management (example: livestock grazing group, wood seller group, women's forest group, blacksmith group).

Mixed Forest:

All other combination of tree species

Participation:

The process of involving people from all socio-economic groups – male, female, rich, poor in making decisions on community activities that relate to their own life and situation.

Participatory Forest Management:

Forest management which takes place as a result of a participatory planning process involving all stakeholders, and which is implemented by these stakeholders (often local people plus the government forest department).

Primary users:

Those households who depend on the forest for subsistence and who are recognized by other users as having the principal responsibility for forest management

Private forestry:

Private forestry can include agroforestry and can also mean more traditional forestry such as plantations. The distinguishing feature of private forestry is that it takes place on privately owned land.

Pruning:

Removing the lower branches of tree or shrub stems up to a specified height. The branches are usually cut off at, or close to, their junction with the stem

Range profile:

A document containing range level information which is used to guide field level planning activities, and to inform the divisional working plan.

Regeneration:

Small plants of shrub and tree species which are likely to develop and contribute to the crown cover of a shrubland or forest in the future.

Regenerating:

Increasing the number of shrubs or trees by: controlling grazing, grass cutting and fire which may otherwise damage plant regrowth; allowing existing trees to produce seed by preventing excessive lopping; encouraging the development of seedlings by creating gaps in the tree canopy; and by sowing seed or planting or transplanting seedlings or cuttings

Secondary users:

Those users who have limited rights to certain forest products (usually not green tree products), or who have limited management objectives (such as watershed protection), whose rights are recognized by their communities, but whose responsibility for management is limited.

Self Reliance:

A community is self-reliant when community activities are carried out using the community's own resources.

Seed trees:

Trees greater than 2 metres tall which have healthy, intact crowns capable of producing flowers and seeds within one growing season.

Shrubland:

vegetation dominated by wood plants that are multi-stemmed near the ground, or if single stemmed are less than 2 metres tall. An upper stratum of emergent trees may be present and compromise upto 5% of the total crown cover

Simple Shrubland Inventory (SSI):

Simple Forest Inventory (SFI):

Singling:

A treatment applied to a shrub or multiple-stemmed tree which first involves the selection of a single stem with the best form, vigour or size. The selected stem is retained while every non-selected stem is cut off near its base

Site:

An identifiable area of the forest (of variable size) which has a distinct set of site conditions, and a group of identifiable site clients

Site specific plan:

A plan for activities to be carried out on a particular site derived from a participatory planning process.

Soil Cover:

The percentage of area assessed which has the mineral soil surface totally covered by either live vegetation or a layer of other plant material

Standard:

A stem that has been selected to grow into a mature emergent tree in a shrubland for the purpose of providing seed and ultimately, large-sized forest products

Stocking:

The total number of shrubs or tree stems within a specified unit area.

Sustainability:

Any process or activity that can continue without any outside assistance and input after initial establishment, assistance and support.

Thinning:

Any treatment applied to a shrubland or forest that involves the selection of trees or shrubs to be removed from a given area, based on a set of specific criteria. The application of the selection criteria can favour the development of a preferred tree or singled shrub through the removal of adjacent, competing trees and can yield preferred products without adverse impact of forest productivity. Note that preferred trees can not always be the largest trees in the stand, and in some cases the largest trees may be thinned, especially where harvesting is done by hand.

Underdevelopment:

The opposite of development – a process of concentrating power, wealth, technology and knowledge in the hands of a few individuals who use these for their own benefit while neglecting the rest.

Understocked:

A shrubland or forest is understocked if the shrubs or trees in a given area do not fully occupy the area to achieve maximum production of shrub and tree biomass, and canopy cover is low.

Village Forest Committee:

A group of people selected by the community to be responsible to be responsible to the community for implementation of the operational plan.

Weeding:

Removing unwanted plants to encourage the development of preferred seedlings, shrubs or trees.



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About the Manual

In the context of Orissa, community management of forests is by and large limited to protection activities by strengthening watch and ward which is one aspect of forest management. Looking at forest management holistically it becomes clear that there should be appropriate social set up and technical know how with the people to manage forests to meet ecological and economic goals. That is the background of preparing the manual. This manual is basically designed as a practical guide for the communities of Orissa and it will help them in managing the forest in a sustainable way. The manual has covered certain important aspects of forest management suiting to the need and requirement of the groups involved in management of forests at community level.

What the Manual Intends

- The manual intends to develop a guiding framework for community forest management that can be used as a handbook primarily by village communities for effective management of local forests integrating conservation of biodiversity of forests and local livelihood towards sustainability.
- The manual would guide the community members as regards to their role playing and responsibility sharing in planning and management of community forests in an environmentally sensitive and socially equitable manner, including developing and implementing an operational plan.



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