

Community Based Conservation in South Asia *A Series of Case Studies and Theme Papers*

Across the world, a powerful new trend in the conservation and management of natural resources is where local communities are empowered to manage their surrounds. This could be a self-initiated process by the community, or triggered by an NGO, government agency, or donor. It could be exclusively handled by the community, or be some form of collaborative or joint management with outside agencies and individuals. The motivation could be biodiversity conservation, livelihood security, water harvesting, or others. But whatever the origin and nature and motivation behind the initiative, the trend towards community-based conservation and management is clear.

South Asia is fast emerging as a pioneer in this new trend. Communities are digging deep into their past and reviving powerful traditions of communal decision-making, as also adjusting to new circumstances and challenges. NGOs and government agencies and donors are learning that working "with" rather than "against" or even "for" communities, is a much surer way of achieving goals. At hundreds of sites across the region, community based strategies are reviving and protecting natural ecosystems, reviving threatened wildlife populations, and achieving higher levels of livelihood security. But there are also challenges: gender and class/caste inequities within communities, powerful commercial and industrial forces undermining conservation. On the positive side, each of the region's countries is revamping its planning and policy framework, to facilitate community based conservation (CBC).

This series of case studies and theme papers documents a number of CBC sites or themes in the region. This attempt follows a broad overview of the status of CBC in South Asia, which has been published in early 2000 by Kalpavriksh and IIED as *Where Communities Care: Community Based Conservation of Wildlife and Ecosystems in South Asia* (see pp. 119-120 for details). Each study describes the initiative in detail, and analyses it to learn lessons for the future and for other sites in the region. The case studies and the theme papers are:

(Continued on inside back cover)

Tribal Self-Rule and Natural Resource Management Community Based Conservation at Mendha-Lekha, Maharashtra, India



Neema Pathak and Vivek Gour-Broome

Community Based Conservation
in South Asia: Theme Paper No. 9

Kalpavriksh
and

International Institute of Environment and Development

**Tribal Self-Rule and Natural
Resource Management**

Community Based Conservation at
Mendha-Lekha, Maharashtra, India

Neema Pathak and Vivek Gour-Broome

Community Based Conservation
in South Asia: No. 9

Kalpavriksh
and
International Institute of Environment and Development

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About the Study

This case study is part of a regional and global process of understanding and documenting community based conservation of natural resources and biodiversity. The global project, called Evaluating Eden, is sponsored and coordinated by the *International Institute of Environment and Development*, London. The South Asia Regional Review of Community Involvement in Conservation, which was part of this global project, was coordinated by a group of individuals associated with the environmental action group *Kalpavriksh*: Ashish Kothari, Neema Pathak and Farhad Vania.

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About Kalpavriksh

Kalpavriksh (KV) is a 21-year old voluntary group in India, working on environmental education, research, campaigns and direct action. KV believes that a country can develop meaningfully only if ecological sustainability and social equity are guaranteed. To this end its activities are directed to ensuring conservation of biological diversity, challenging the current destructive path of 'development', helping in the search for alternative forms of livelihoods and development, assisting local people in empowering themselves to manage their surrounds, and reviving a sense of oneness with nature. Over the last few years it has increasingly focused on community based conservation and management of natural resources. Among various other activities the members of KV are involved with, the formation of an information exchange and action network of conservationists and social activists (the Conservation and Livelihoods Network), coordination of India's National Biodiversity Strategy and Action Plan, and compilation of the Directory of Community Conserved Areas in India.

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Neema Pathak
Vivek Gour-Broome

List of abbreviations

AC	Annual Census Report
AG	Abhyas Gat
approx./app.	Approximately
BDO	Block Development Officer/Officer
BG	Bachat Gat
CP	Central Provinces
CWR	Coppice with Reservation
cm.	Centimetre
CBC	Community Based Conservation
DFO	Divisional Forest Officer
E	East
FD	Forest Department
FPC	Forest Protection Committee
FSO	Forest Settlement Officer
FV	Field Visit
GBH	Girth at Breast Height
GNVP	Gram Niyojan aur Vikas Parishad
GoM	Government of Maharashtra
GS	Gram Sabha
ha.	Hectares
ITDP	Integrated Tribal Development Plan
JFM	Joint Forest Management
km.	Kilometre
KV	Kalpavriksh
LSE	Landscape Element
m.	Metre
MM	Mahila Mandal
msl	Mean sea level
N	North
n.d.	Undated
NGI	Non-government Individual
NGO	Non-government Organisation
no.	Number
NTFP	Non Timber Forest Produce
Pers. comm.	Personal Communication
PF	Protected Forests
pop.	Population
PSC	Pitta Study circle
RF	Reserved Forests
RFO	Range Forest Officer
Rs.	Rupees
SF	State of Forest Report
Sp.	Species
TCM	Trench-cum-Mound
TDC	Tribal Development Corporation
tp	Toposheet
VF	Village Forests
VSS	Van Suraksha Samiti
WP/Wp	Working Plan

Glossary

<i>Abhiyas Gat/Mandal</i>	Study circle
<i>Aiu</i>	<i>Terminalia alata</i>
<i>Ahiwakh</i>	Non-violent
<i>Akadi</i>	July
<i>Amli</i>	<i>Euclea officinalis</i>
<i>Audahan</i>	Mass movement
<i>Angan Badi</i>	Pre-school
<i>Anjan</i>	<i>Terminalia arjuna</i>
<i>Bachat Gat</i>	A savings scheme through a local bank
<i>Ban</i>	Rope
<i>Begari</i>	Labour without payment
<i>Belula</i>	<i>Terminalia bellerica</i>
<i>Bidi</i>	A country cigarette wrapped in <i>Tendu</i> leaves
<i>Bija</i>	<i>Pennisetum purpureum</i>
<i>Bodol</i>	Wild Buffalo
<i>Bori</i>	<i>Zizyphus jujuba</i>
<i>Burdie</i>	Bullock-cart
<i>Burbadi</i>	May
<i>Chana</i>	A kind of a pulse <i>Cicer arietinum</i>
<i>Charcha</i>	Discussion
<i>Charoli</i>	<i>Brehanmia hirta</i>
<i>Changul</i>	Village square
<i>Chikki</i>	Bird lime
<i>Chinch</i>	<i>Tamarindus indica</i>
<i>Dal</i>	Pulses
<i>Darsara</i>	October, month named after the festival by the same name
<i>Diansara</i>	Yam
<i>Diuah</i>	November, month named after the festival by the same name
<i>Dham kosh</i>	Grain store
<i>Dhamada</i>	<i>Anogeissus latifolia</i>
<i>Dhamar</i>	Fishing community
<i>Donger</i>	Mountain
<i>Gaita</i>	The village priest
<i>Garadi</i>	<i>Christanthus collinus</i> , fruits of this tree are traditionally used for poisoning fish
<i>Gatta</i>	Seeds of <i>Madhuca indica</i>
<i>Gobar</i>	Cow-dung
<i>Ghoti/Gotiya</i>	<i>Zizyphus xyloperum</i>
<i>Ghotul</i>	A traditional structure in the village where unmarried youth lived and learnt the ways of life
<i>Gitti</i>	Metal for road construction
<i>Gotham</i>	Abandoned shifting cultivation sites
<i>Gram Niyojan aur Vikas Parishad</i>	Village Management and Development Organisation
<i>Gram sabha</i>	Village Assembly
<i>Gram sevak</i>	Village level personnel appointed by the government to carry village needs and complaints to the government
<i>Gudra</i>	Lower hillocks

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<i>Hudga</i>	A kind of a pulse <i>Dolichos biflorus</i>
<i>Inakei</i>	Flowers of <i>Madhuca indica</i>
<i>Inpi</i>	<i>Madhuca indica</i>
<i>am or anbel</i>	A nutritious drink made of slightly fermented rice flour
<i>Jawar</i>	A kind of millet, <i>Sorgum</i> sp.
<i>Jungle Abhiyas Gat</i>	Forest Study circle
<i>Kanyar</i>	A mythical animal popular among the Gonds
<i>Katunji</i>	<i>Bauhinia arnabivaca</i>
<i>Karkut</i>	<i>Olex</i> sp., leaves of this plant are traditionally used as fish poison
<i>Kuri</i>	<i>Gmelina arborea</i>
<i>Kusali</i>	A kind of grass
<i>Madhumakhi</i>	Honey bee
<i>Mahar</i>	February
<i>Mahila Mandal</i>	Women's Council
<i>Mahul</i>	<i>Bauhinia variegata</i>
<i>Mandap</i>	A temporary structure for weddings and other functions
<i>Manan</i>	Cultivation areas where the conditions are suitable for growing vegetables
<i>Mate/Maver</i>	My
<i>Mav</i>	<i>Sesbania (Crotalaria retusa)</i>
<i>Metta</i>	Higher peaks
<i>Mirdal Puthela</i>	Community hunting for hare
<i>Nallah</i>	A small stream
<i>Nate</i>	Village
<i>Naxalite</i>	Leftist militant group, active in Central and Eastern India
<i>Natar</i>	Customary rights of local people over natural resources
<i>Natar Petak</i>	Recorded statement of customary rights on forest resources for bona fide personal consumption of the villagers
<i>Nara</i>	September
<i>Narka</i>	A kind of grass
<i>Padra</i>	Burning wood to generate ash for vegetable fields
<i>Pakshi</i>	Birds
<i>Panchayat</i>	Village executive
<i>Pandi</i>	December
<i>Patel/Patil</i>	The headman
<i>Patta</i>	Leaf
<i>Pattal</i>	Plate made out of leaves
<i>Patwari</i>	Land record officer at the taluk level
<i>Pawaki</i>	Leaves of <i>Bauhinia variegata</i>
<i>Phara</i>	Snare used for hunting
<i>Pokhar</i>	Remnant small pools of water in a dry river
<i>Pola</i>	August
<i>Polo</i>	Rest day or a day assigned for prayers and celebrations when only essential personal or household work is done
<i>Poojan</i>	Priest
<i>Pover juppi</i>	<i>Bauhinia variegata</i>
<i>Puca</i>	Cemented
<i>Pumina</i>	Full moon night
<i>Pusi</i>	January

Rab	Agricultural practice of burning leaves and branches and spreading the ash on the fields before sowing
Ragi	Lesser millet, <i>Eleusine coracina</i>
Rim	A traditional system of sharing the kill after a hunt among the Gonds
Sanads	Agreements
Sarkar	Government
Sarkari	Belonging to the government
Sarpanch	Head of the <i>panchayat</i>
Setak	April
Shingra	March
Shirham	<i>Dalbergia latifolia</i>
Shimadai	Voluntary labour
Tahsil	Lowest administrative unit of the government in a State, formed by a cluster of many villages
Tahsildar	Chief government officer at the Tahsil
Teej	June
Tekad	Hilly, rocky area with scant soil
Tendu	<i>Diospyros melanoxylon</i>
Tikri	A traditional Gond system of sharing the kill after a hunt
Tola	Hamlet
Van Samaksha Samiti	Forest protection committee
Van talav	Forest water tank
Vela/Vedhar	Bamboo
Waghmunadi	Bull killed by a tiger
Wazir-ul-arz	Government document specifying the land-use in the area under the control of revenue authorities
Zamindar	Landlord

Summary

Gadchiroli District of Maharashtra State, along with areas in the surrounding district and states, is a region famous for both its biological and cultural diversity. In the late 1970s the government proposed two dams in Gadchiroli region: Bhopalpattanam on River Godavari and Inchampalli on River Indravati. For the economically poor tribals of the region, the project not only meant displacement from their traditional homes and possible social disruption but also destruction of large stretches of forests on which their livelihood and culture heavily depended. Thus this project faced strong tribal opposition and was finally shelved by the government. However, this struggle sowed the seeds of a very strong movement towards tribal self-rule in Gadchiroli region. Mendha-Lekha was one of the villages where the process towards self-rule gained momentum and is today very successful. The village is inhabited exclusively by Gond tribals and comprises of about seventy households. People depend on subsistence agriculture, daily wage employment and forest produce.

These forests were largely under the management of the local landlords till 1950s. The use and management of the resources was left to the local villagers. After India gained independence these forests came under the management of the Forest Department (FD). Subsequently, the focus of the forest management shifted from meeting local needs to meeting urban and other national needs. Commercial exploitation of timber and other forest produce started, contracts for such extractions were given out to the contractors from outside the region. Parts of the forests were also leased out to a paper mill. In addition, the government started the process of converting these forests to Reserved Forests, which is a much stricter legal category and restricts the access of people to the forest resources.

After the movement against the dam, called the "save for-

ests save humanity movement", the villagers from Mendha-Lekha, being dissatisfied with the above developments, decided to take *de facto* charge of the forests. Subsequently, the village organised itself into a stronger unit and took some important decisions, including:

1. All domestic requirements of the village would be met from the surrounding forests without accepting any outside restrictions. This, however, would be accompanied by a set of rules for sustainable extraction, including strict prohibition of any commercial use of timber.
2. No outsider, government or private, would be allowed to carry out any programmes in the village or the adjoining forests without the permission of the village organisation.

In order to carry out the above and other similar decisions, the village united itself into a body called the *gram sabha* (village assembly). The *gram sabha* (GS) is the main decision-making body in the village and is represented by at least two people (a male and a female) from each family in the village. Decisions are taken unanimously (not on the basis of majority) and implemented through unwritten but strong social rules. All outsiders (government officials, researchers, NGOs), who intend to carry out any activities in the village or the adjoining forests have to present their plan in the GS and seek its permission to carry it out. The GS meets once a month for discussions and decision making, except in case of an emergency when instant meetings are held. Subsequently, the village formed various other institutions to handle different responsibilities. For example the *Van Samiksha Samiti* (VSS) or Forest Protection Committee; the *Mahila Mandal* (MM) or the women's organisation; *Abhyas Gats* (Study circles), which act as a forum for frank and in-depth discussions on various issues ranging from immediate village problems and their solutions, to wildlife conservation. Often researchers, activists, government officials, students and others participate in these discussions. This interaction and exchange of information helps villagers take informed decisions during the GS and VSS meetings.

Through these institutional structures, the villagers have been able to achieve the following:

Positive Impacts on the Community

- The villagers have realised that they can assert their rights to natural resources or developmental processes only if they have the capacity to take the responsibility for managing these resources and processes. This capacity to take on responsibility can only be gained by overcoming their weaknesses and acquiring impartial knowledge.
- The villagers have struggled and achieved the capacity and confidence to assert their rights and have reached a stage where the village is respected even in official circles. Today people from all government and non-government organisations come to the village (if they need to), instead of calling the villagers to their offices. They sit and converse with them on equal grounds and often in villagers' language.
- A democratic and transparent process of decision making, implementation and conflict resolution has been initiated. This leaves little space for misunderstandings and fragmentation.
- Almost equal status for women in the decision making process has been achieved.
- Through a non-violent strategy the village has established strong and good relationships with many government officials, who in turn help them on many crucial occasions.
- The village has set a good example for the surrounding villages which have low economic status and whose forests are in the last stages of degradation. Mendha-Lekha's self reliance and improved quality of life has sent a positive message to these villages and many villages now wish to work towards the same. Some have even begun to do so.
- Villagers now manage financial transactions with confidence. The *gram sabha* has its own bank account and manages it well.
- Livelihood security has been ensured to all villagers, be it

through access to forest resources or employment opportunities. This also includes livelihood opportunities through forest based industry like honey collection.

Positive Impacts on Forests and Wildlife

- The villagers have realised the importance of forests in their lives and the need to protect and conserve them.
- Water and soil conservation efforts have been made to arrest excessive run off and soil erosion from the forest areas.
- A decision has been taken that the forests will not be set on fire and that the villagers will help in fire extinguishing to whatever extent possible.
- Fixed rules about resource extraction from the forests have been established along with penalties for the offenders.
- Villagers keep vigilance on the forests against illegal activities.
- Forests are protected from commercial activities, such as extraction of bamboo by paper mills.
- Villagers have managed to control encroachments in the surrounding forest.
- The village has also managed to get into a Joint Forest Management (JFM) arrangement, convincing the FD to include, for the first time in the state, standing natural forests in such a scheme. Through the scheme they have been able to impress upon the department their preference for a more diverse forest as against forests dominated by commercially valuable species.

Constraints and steps for future

- While conservation of plants is now well understood in the village, wild animals continue to be feared and hunted by the villagers. Impact of this hunting needs to be assessed. Certain animals like the Giant Squirrel are highly threatened and one contributing factor could be hunting.
- Although villagers have *de facto* control on the ecological and developmental processes in the village, this is not yet recognised by the law, except as part of the JFM programme. There are possibilities of giving legal recognition to the

village efforts through many existing and proposed laws and policies, which need to be seriously explored.

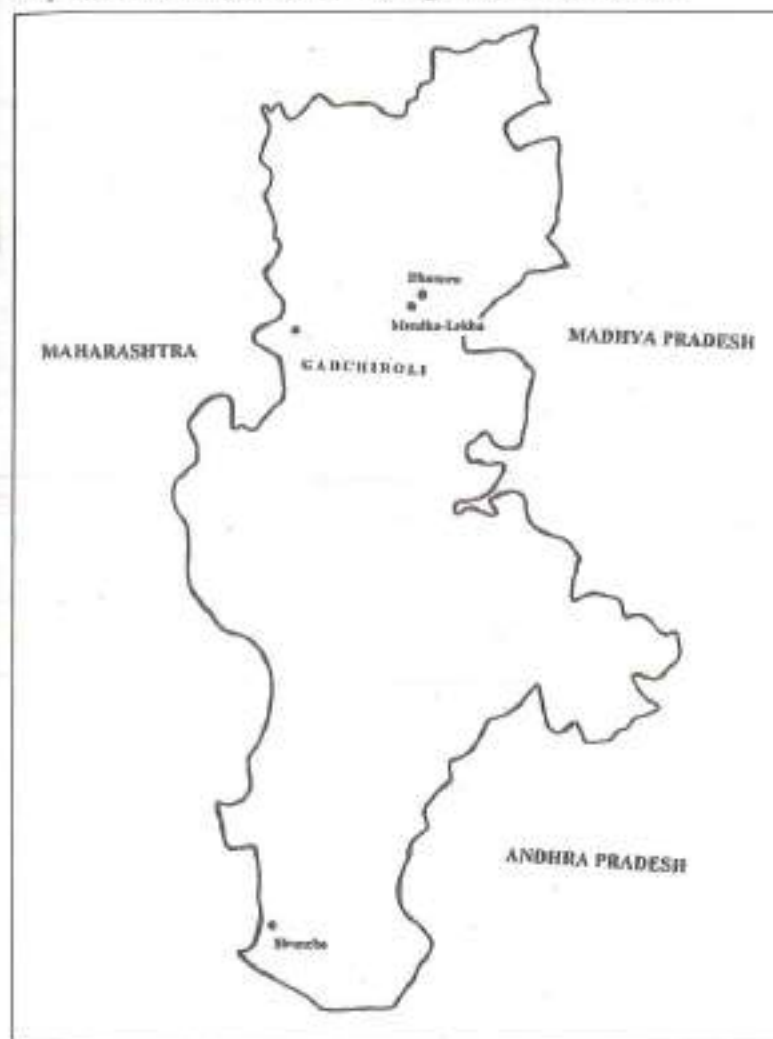
- In the absence of statutory recognition, the sustainability of the initiative depends very heavily upon various informal support structures, such as, outside individuals, sympathetic officers and dedicated village members. Major changes in any of these could affect the character of the initiative.
- Considering that a large part of the villagers' time must go into earning their livelihood, it is sometimes difficult to sustain the fervour for forest protection activities, especially if there are no immediate threats facing the village. A proactive outside agency, with the correct attitude, especially a state agency, could play an important extension role to keep up the momentum.

Map 1: Location and forest cover of Maharashtra state in India



Source: Forest Survey of India. State of Forest Report 1997. Forest Research Institute, Dehradun.

Map 2: Location of Mendha-Lekha village in Gadchiroli District



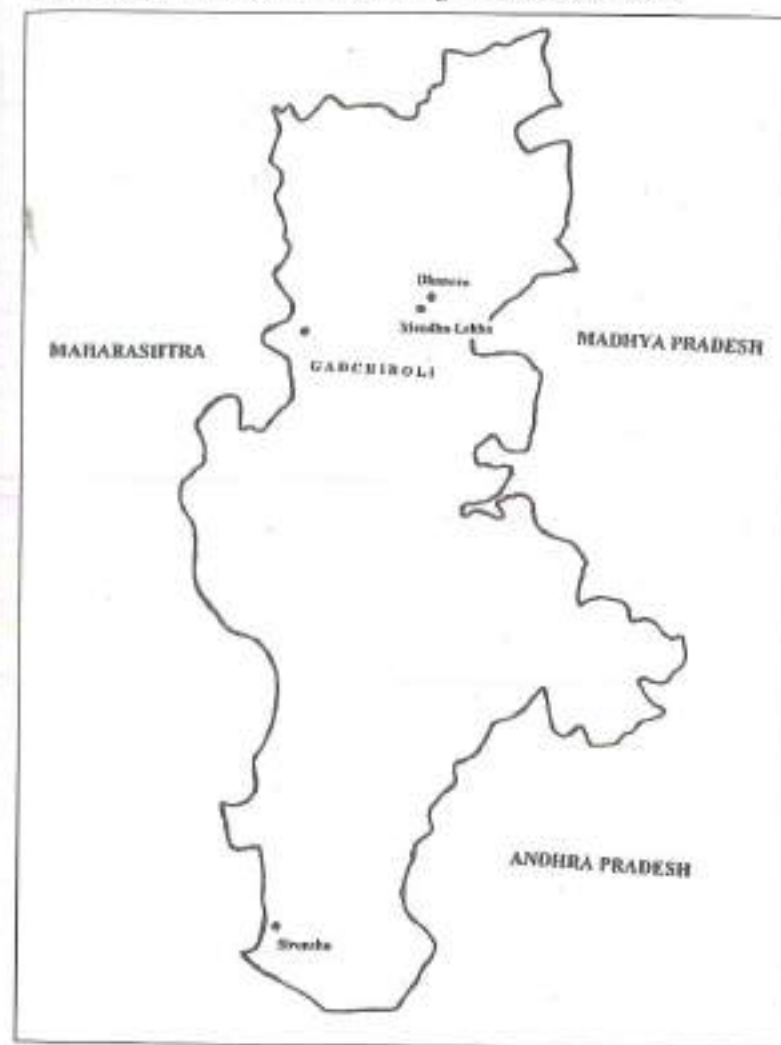
Source: P.S. Patel, 1998. *Maharashtra Road Atlas*. Deluxe edition. Ananda Sahitya Prakashan Gyan Vigyan Prakashan, Ahmedabad.

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Source: P.S. Patel, 1998. Maharashtra Road Atlas, Deluxe edition. Ananda Sahitya Prakashan Gyan Vigyan Prakashan, Ahmedabad.

the local people these are a source of fish and water in times of scarcity. Other sources of water include numerous small irrigation tanks in the agricultural fields, one small reservoir (*van talav*) on the edge of the forest, numerous seasonal streams and some perennial pools in the forest.

Table 1: Land-use information of the village (JFM 1996)

Total area	1929.07 ha.
Dense natural forest	1806.47 ha.
Scrub forest	23.80 ha.
Water bodies	2.64 ha.
Mountains and rocky areas	1.01 ha.
Area under agriculture	78.85 ha.
Area under human settlement	2.67 ha.
Roads and paths	5.28 ha.

This region experiences a long dry summer between the end of February and June. The days are very hot with temperatures occasionally rising up to 48°C. Winter is cold and lasts from November to February. The rainy season is from June to September with an average rainfall of 1400-1600 mm per annum (Hiralal and Tare n.d.).

1.2 Objectives of the Study

As part of the South Asia Regional Review of Community Involvement in Conservation eight detailed case studies were taken up in different parts of South Asia. Efforts were made to cover as many ecosystems as possible and as many kinds of initiatives as possible. This included dry deciduous forests, Himalayan ecosystem, and marine ecosystem, among others. Mendha-Lekha was one of the cases taken under the study representing dry deciduous forests and a self-initiated community effort. The objective of these detailed studies was to understand the dynamics of Community Based-Conservation in South Asia.

There were three main objectives of the study:

1. To understand and document the development of the process of self-rule and natural resource conservation in village

Mendha-Lekha, and judge its impact on the biodiversity of the surrounding forests. Specifically, this involves understanding:

- The history of administration, land-use and resource use in the area.
 - The process of community self-empowerment and people's role as decision-makers, implementers, researchers and evaluators.
 - The reasons, motivations and impetus for peoples' initiative towards self-rule and natural resource management.
 - The structure and functioning of the village level institutions developed in the village to achieve the above.
 - The community's stakes in and benefits from Community Based Conservation (CBC).
 - The social, financial, institutional, and ecological sustainability of the community initiative.
 - The role of an outside agency (government/non-government) as a facilitator in the process of community initiative.
 - The dynamics of the ecosystem, and impacts of CBC on the status of flora and fauna.
2. To understand the social, economic, political, policy and legal constraints and opportunities of the initiative and suggest possible solutions and steps forward.
 3. To draw out possible lessons for a more participatory natural resource management regime in India.

A special request from the village was that the results of the current study should be made available to them in a language that they can understand, a decision that the researchers had in any case taken at the planning stage. This booklet, therefore, is also translated into Marathi, for local use.

1.3. Methodology

The study was carried out during the period of December 1997 to 1998 which involved field visits and secondary literature surveys. The report that was produced during this period was con-

tinuously updated in 1999 and 2000 through conversations with persons involved with the village initiative. The team's previous familiarity with the NGOs in the area helped build a quick rapport with the villagers. Subsequently, contacts were also established with the local level government officials.

A bibliography was prepared of all secondary literature available for the area. Preliminary historical and basic information about the region was obtained from these secondary sources. Prior to the commencement of fieldwork an outline report was prepared identifying gaps in information. This report was subsequently updated during and after every visit to the village.

An initial meeting was held with the *gram sabha* to seek permission for the research and discuss details of the villagers' participation in it. A joint decision was taken to translate the final report into Marathi, a language that the local people can also understand and to hold a workshop with the villagers at the end of the research to discuss the emerging issues.

Regular discussions were held on the findings of the research (especially the ecological aspects) with other researchers, including on the Internet. Specific issues were discussed with the villagers throughout the study. Participation in the *gram sabha* and Study circle meetings was an important source of information. Many questions were answered through listening to oral histories, attending late night meetings, social and ecological transects and participation in day to day village activities.

Specific methods were employed for ecological assessment of the village initiative (for detailed methodology, see section 7.1.a.)

1.4 Limitations

1. Unfamiliarity with the local language (Gondi) was a major limitation, which may have resulted in missing the subtler aspects of many of the conversations held with villagers. The views of many villagers could only be obtained with the help of translators while many others, especially women, felt hesitant to talk. Thus the report cannot claim to have included the views of the entire village.

2. Due to inhibitions and shyness on their part, it was difficult to interact closely with the youth in the village, especially those between the age of 15 and 25 years. Thus their views are largely not reflected in the report.
3. Not enough ecological transects could be carried out during the specified time of the study as often it was very difficult for the villagers to accompany us to the forest. This is because through most of the year villagers are extremely busy in their livelihood activities.

2. Socio-Economic Profile

2.1 Social/Ethnic Profile

The region formed by Gadchiroli and Chandrapur districts in Maharashtra, Bastar district in Madhya Pradesh and some adjoining areas of Orissa and Andhra Pradesh is historically known as "Dandakaranya". The area is named after a mythological king called Danda. According to a legend his entire empire was turned into thick inaccessible forest after the curse of an ascetic. This region has traditionally been mainly inhabited by the Gond tribe and has a history of the presence of strong Gond kingdoms. Over different periods in the last few centuries Muslim and Maratha rulers have also invaded and ruled this area (see chapter 5) (GoM 1973). The last few centuries have also seen the entry of many non-tribal communities into the region. Many of these non-tribals have largely come to the region during the late nineteenth century and early twentieth century as traders or government officials. Gadchiroli district, which was once predominantly tribal, today has about 62% non-tribals among its population (Government of Maharashtra 1994). Village Mendha-Lekha, however, has a homogeneous community comprising only of Gonds. The village comprises of two *talas* (hamlets) situated about 200 m apart.

2.2 Culture

Depending on the extent of their cultural integration with the mainstream cultures, the Gonds can be divided into various groups. The Madia Gonds, inhabiting mainly the hilly forested tracts are the most remote; Raj Gonds have been historically famous for being the ruler class; Gaita Gonds are believed to have started settled agriculture earlier than other groups of the tribe. The Gaita Gonds were also famous for maintaining many aspects of their cultural identity. All the above groups of Gonds

are also divided into exogamous groups, which bear traces of mostly-forgotten totemism. For example, the four-god Gonds have the tortoise and crocodile as their totems; five-god Gonds have the monitor lizard; six-god Gonds have the tiger; and seven-god Gonds have the porcupine as totems.

The families with a particular totem never kill or eat their own totem animal. Marriages within these groups are also not allowed. The highest god of the Gonds is Persa Pen, represented by an iron nail and chain embedded in bamboo. Verrier Elvin, the famous anthropologist, described Gonds as "people who want little beyond what the jungle and the compound around their house will provide, salt, liquor, some grain, tobacco, minimum of clothing, iron for his axe, gaudy beads and 'run of the jungle'" (as quoted in GoM 1973). Over many centuries the Hindu religion has substantially influenced the tribals in Gadchiroli as in other parts of the country. This has manifested in some Hinduisation of tribal festivals and customs. Among the non-tribals very often the ethnic identity of these tribals is not recognised. In addition, the tribals are often referred to as "junglee" or wild indicating a connotation of backwardness. In recent years, among the tribal communities there has been a desire to revive the tribal cultural identity and dignity. In many areas this has led to tribal mass movements. In Mendha-Lekha too, this revived sense of identity has played an important role in the movement towards self-rule and forest protection.

2.3 Population

The village had 70 households with a total population of about 324 in 1998 (AC 1998). In 1973 the population of the village was about 191 persons belonging to 31 households (GoM 1973). Of the total current population, 163 are men and 161 women. Only 97 out of the total population in the village have had formal education (JFM 1996). Family planning is fairly common, many young men undergo vasectomy (but women prefer not to undertake any family planning measures) under the government sponsored family planning programmes. Marriages take place between the ages of 17 and 20 years. Child mortality is quite high.

Box 1: Tribal cultural disintegration and the struggle for cultural revival in Mendha-Lekha

One important aspect of Gond culture in the past was the system of *ghotul*. This was a kind of a hostel where the young and unmarried lived, interacted and learnt the ways of life till they decided to get married and establish a separate house. The group leaders from within the group led different male and female groups. There was an overall leader called the *Patal* who was selected from within the group. The *Patal* was finally answerable to the 'Chief Minister' who was usually a married member of the village. This arrangement helped resolve conflicts amongst the members of a *Ghotul*. *Ghotuls* lost their purpose and glory when the interaction with outside communities increased, as outsiders saw this custom as "low" and unethical.

After the movement towards self-rule gained momentum in the village, Mendha-Lekha villagers started discussing the revival of *ghotul*. In 1989 the village decided to reconstruct their *ghotul*. This decision played a very important role in uniting the people in their fight for self-rule in and around the village. Traditionally, *ghotuls* have always been made of teak (*Tectona grandis*) wood. Extraction of teak from the forests around the village had been officially prohibited. The villagers still decided to extract teak for the construction of *ghotul* because they were convinced that their act was not wrong. A wrong act for them meant extraction of timber for commercial purposes. Their main contention was that if the government could extract and export teak from the village forest, why should the villagers not be allowed to take a few logs to construct a *ghotul*? The Forest Department (FD) very strongly condemned this act and forcefully brought down the *ghotul* constructed by the villagers. The FD insisted that teak should be replaced with some other less commercially valuable wood. A large police contingent was called to discourage the villagers. The local politicians also did not support the villagers on this issue. However, the fact that a *Ghotul* had been demolished irked many villages in the nearby area and finally with the help of 32 other villages this battle was won. After this incident an official decision was taken to allow building of *Ghotuls* in all Gond villages (for which material is now provided by the government free of cost).

However, according to Devaji Topa (see section 6.5), even though in principle the *ghotuls* have been reconstructed in many villages, the old social spirit of the system has not been revived yet. The reason for this is the lack of knowledge and confidence to run the *ghotuls*.

Source: Devaji Topa, Devam Topa, and Shivam Daga, personal communications.

2.4 Health and Hygiene

The village surrounds are very clean. There is very little non-biodegradable garbage. Most waste is organic in nature and is eaten by the domestic animals. Houses and surrounding areas are cleaned every day. The insides of the house are swept many times a day. The houses are plastered with mud and cow dung twice a week. Defecation is usually in the surrounding forests. However, levels of personal hygiene are relatively low. Tobacco chewing is a habit among most inhabitants (though the trend appears to have decreased among the younger generation). Constant spitting, especially by the tobacco chewers, is very common.

Illness like stomach ailments and malaria are common just before, during and just after the monsoons. Chicken pox and tuberculosis are among other common diseases. Many people, especially women, complain of stomach aches. Villagers still have a strong belief in the village medicine man and his religious prayers for the treatment of diseases. There are special songs that are sung for the sick. Only in exceptional cases are the sick taken to a hospital, which is only 3 km away from the village. Being taken to the hospital is considered very inauspicious. This could be because invariably patients are taken to the hospital when there is little hope of their survival and rarely recover. There is a strong belief in magic and spirits among the villagers.

2.5 Food

The staple diet is rice, *dal* and fish. *Java* or *ambeel* (fermented rice/wheat boiled in water) is an essential part of any meal and is drunk hot or cold along with the main course. There is a substantial dependence on the forest for food such as honey, roots, fruits, mushrooms, bamboo shoots, fresh leaves and so on. Hunting for wild meat is also common. Most mammals and birds found in the forest are eaten, including bear, deer, fox, monkey, bat, hare, peacock, duck, stork and green pigeon among others (see section 2.7 below). Pigs, goats and poultry are also reared for meat.

Earlier, local fruits and crops such as *Mahua* (*Madhuca indica*) flowers, *ragi* (*Eleusine coracana*) flour, honey, various roots, etc. were important sources of nutrition in the tribal society. Dried *Mahua* flowers were eaten in the summer months of scarcity and provided essential nutrition. Lactating mothers were given *Mahua* items to eat. *Mahua* was also used for making many other food items. This trend however has significantly gone down today. Consumption of *Mahua* and *ragi* flour is now considered as a sign of low social status. White rice (hybrid and improved varieties of rice promulgated by the government through government fair price shops) is considered better than local varieties. However, in casual conversations people accept that the traditional varieties were better in terms of nutrition. Spices and oil, which were not used traditionally, are now considered a necessity. Food is now extremely hot and spicy.

Box 2: Beef eating and tribals

According to Devaji, beef was a part of the staple diet in earlier days, but under the influence of Hinduism it is now considered lowly to eat beef. According to Shivram, a bull being a bread earner, even the thought of eating it is a sin. The meat of a bull killed by a tiger however is considered to have special medicinal and invigorating properties and is highly sought after. Availability of this is reported to have gone down now, probably because of the reduced population of predators.

Source: Devaji Topa, Shivan Daga

The village has an interesting system of overcoming food scarcity. This traditional system is called the *dhan kosh* (grain store). The village collects food grains as contribution from each family after the harvest. This store is utilised in times of need or for any village functions. It is also used for the weddings of the poor in the community. The village also has a system of community cultivation, in which a landowner who is not able to cultivate his land gives the land to the village on a share crop basis. The villagers jointly sow and harvest it while the produce, over and above the share of the landowner, is kept in the *dhan kosh*.

2.6 Economic Status of People

Though there is substantial difference between the smallest and largest landholding (see section 2.7), the majority of the population falls in the average landholding category of about four to five acres. The difference in landholding or any traditional power status, however, does not reflect in the current power structure in the village. There appears to be equal participation in decision-making processes and people of all classes and genders express their views and are heard in the village meetings. For the last few years the village has succeeded in providing equal employment opportunities to all the villagers, further supported by the employment guarantee schemes of the state government. Due to all these efforts there does not appear to be much difference between the economic status of people in the village.

Sometimes there appears to be some dissatisfaction among the traditional power holders like the Police Patil or the Poojari of the village about their reduced importance as compared to people like Devaji (who once belonged to a landless family), who are now more active in the village organisation activities. This dissatisfaction has so far had no major visible consequences.

2.7 Major Sources of Livelihood

Subsistence agriculture

Officially there are eleven landless families in the village. Actually, however, there are none. The landless are "landless" only because they do not have *pattas* (official registration) for the land under their possession. Those who had no land or had to sell it for some reason, encroach upon the government land (which is not officially recorded). Almost everyone in the village has some encroached land. Most of these encroachments are several years old. Land holding ranges from 1 acre to 16 acres. Average land holding is about 5 acres. This includes the encroached land. After many demands from the villagers the District Collector has agreed to regularise the land for those who owned less than an acre (see section 5.3).

The main crop in the village is paddy, which is largely monsoon dependent. Heavy dependence on monsoons for irriga-

tion only permits one crop per year. Traditionally many varieties of rice were grown, which in recent years have been replaced by a few high yielding varieties developed by the government. Traditional crops like *ragi* are also not grown anymore. According to the villagers this is because the extent of crop damage by wild or domestic pigs for these crops is very high. For irrigation there are small tanks in the fields where water is available till the end of December. Vegetables are cultivated both for personal consumption and for sale. The water for these vegetables is pumped up either from river Kathani or from the wells adjoining the fields.

Government Sponsored Employment Guarantee Scheme

The Government of Maharashtra has a scheme under which all citizens have a right to employment, and within 15 days of their applying, the government is required to provide employment. Under this scheme various employment generation programmes such as mount and trench construction, plantations, etc. are carried out in the village. Daily wages from these programmes are an important source of income for the villagers.

Employment Opportunities Generated by the Village

The village, on its own or with the help of outside agencies, has developed certain employment generating activities. For instance, the village now owns a tractor for which they take transport orders from within the village as well as outside. Villagers mine stones from certain authorised sites and sell these in the market. With the help of an NGO based in Gadchiroli, the women in the village have started making incense sticks. The raw material for this is supplied by the NGO. The village also has a Self-Help Scheme started with the help of a local bank (see section 6.2).

Forest-based Employment and Livelihood Opportunities

1. Under the Joint Forest Management agreement with the Forest Department (see section 6.1), the villagers have the first right to any daily wage employment for forestry works

in the surrounding forests. These activities include bamboo extraction and plantation of forest species.

2. Members of the Honey Bee Study circle (see section 6.2) extract honey and market it as *ahimsak* (non-violent) honey with the help of an NGO, Dharamitra based in Wardha.
3. The members of the Forest Study Group (see section 6.2) were paid for three years as local researchers in a participatory research project assessing the impact of NTFP collection on the target species.
4. A couple of people from the village have been helped in reviving and developing their skills in traditional medicines from local plants through training at Kurkheda (a training centre for revival of traditional medicines and medicinal practices run by Dr Satish Gogulwar).

Apart from generating employment, forests are the most important source for meeting other livelihood requirements for the people.

1. **Fuelwood:** Fuelwood requirement is entirely met from the forests. On an average, the annual requirement of a family of 6-10 persons is about 10 *bundies* (cartloads). Permission from the VSS is required for each *bundie*. As per the village rules collection of only dry wood is allowed. However, if enough dry logs of adequate size or species are not available then green branches are also lopped and left to dry in the forest. This collection is mainly done by menfolk just before the monsoons and winters. In addition, women collect headloads as and when required. The headloads are only of dried twigs collected sometimes on the way home from the forest or from the fields. Initially a system of paying of a token amount for the collection of fuelwood was followed but subsequently it was dropped as villagers found it difficult to collect this amount. Species mainly used for fuelwood are *ganadi*, *ain*, *Mahua*, *dhawada*, *amla*, *tendu*, *ghoti*, *anjan*, *bor*, *kojab*, *behda*, *chinch* and others (Hiralal and Tare n.d.) (also see Annexure A). Currently, biogas plants are being constructed in the village with the objective of reducing the

dependence on firewood. Villagers, however, believe that since most of the wood is required for keeping warm and heating water (both these needs cannot be met by a biogas plant) this will not significantly reduce the amount of firewood consumed.

2. **Timber and bamboo:** for household needs (e.g. house building, agricultural implements, etc.) are collected from the surrounding forests as *Nistar* (usufruct rights). On an average about one hundred boles of bamboo are required every year by each household. Bamboo is among the most important commodities in the lives of the villagers. It provides them with a house to live in and keep domestic animals, mats to sit on, fishing baskets to catch fish, shoots to eat, and is used in many more life sustaining activities.

The total fuelwood, timber and bamboo requirement of the entire village given by the Forest Department (FD) in the JFM plan (1996) is as follows:

Table 2: Villagers' requirements from the forests

Requirement of	Total human population	Total no. of households	Requirement	Total requirement of the village per year
Fuelwood	324	70	250 kg per capita per year	81000 kg
Timber for construction	324	70	25 boles per family per year	1750 boles
Bamboo	324	70	50 boles per family per year	3500 boles

When compared with the information obtained from the villagers, the above seems like an underestimation (fuelwood data can not be compared as the figures obtained from the villagers were in number of bullock carts and head loads per family whereas the forest departments information is in kilograms per person). The requirement of bamboo as stated by the villagers

is about 100 per family per year whereas the above data puts it as 50 per family per year.

3. **Livestock:** Each family owns about 5-6 heads of livestock on an average. The village has a total of 272 livestock, which includes 122 cows, 113 bulls, 9 buffaloes and 28 goats (JFM 1996). This number is in addition to pigs and poultry. Rearing of livestock is both for consumption and for sale. Cows are reared to produce bulls for agricultural purposes and for sale in times of need. A few people also keep one or two cows for milk but it is not a traditional or a widely accepted practice. Cattle depend entirely on the forests for fodder and are let loose twice in a day in non-agricultural seasons. Cattle dung, as manure for the fields, is an important added incentive to maintain livestock.
4. **NTFP:** Collection of NTFP for domestic consumption as well as for sale is an important source of livelihood. Major NTFP collected from the forest are *Mahua* flowers and fruits, *Tendu* leaves and fruits, *Amla* (*Emblica officinalis*), *Charoli* (*Buchanania lanzan*), and others.

Tendu patta (leaves) are collected in the month of May and June and make the largest contribution to the annual income of each family. The entire household is involved in the process of *Tendu patta* collection. These leaves are later sold to contractors assigned by the government.

Box 3: *Tendu patta* collection in Maharashtra

Till 1996, in Maharashtra, as in the rest of India, the tribals did not have the right to directly extract and sell 31 of the nationalised NTFP, which included *Tendu patta*, *Mahua*, bamboo and others. The tribals always had to extract and sell this NTFP through cooperatives established by the government or contractors as signed by the government. Under this system, even though the tribals put tremendous effort into the collection of this NTFP from the forests the monetary benefits that they received were abysmally low. After many demands from tribals across the country, a committee called the Bhuria Committee was appointed by the government to look into the matter. The committee suggested that considering the importance of NTFP in the lives of the collectors they should be conferred ownership rights over these. In

1996, the 73rd amendment to India's Constitution was made to help village communities achieve greater empowerment, and was extended to several tribal areas (or areas under the fifth schedule of the Indian Constitution). This amendment confers the ownership of NTFP on the local people in these areas, enabling them to directly extract NTFP and sell it in the open market. The amendment as adopted for the state of Maharashtra, however, confers ownership of all NTFP except *Tendu* and bamboo on the local tribals. Considering that these are among the two most important NTFP for tribals this has not changed the existing situation much. Collection of *Tendu patta*, one of the most important sources of revenue both for the government and the local communities, continues to be extracted and marketed either directly by the government or by the contractors under a license from the government.

The government contracts for *Tendu patta* collection are issued to the highest bidder. Thus the contractors are invariably rich outsiders. FD staff is only involved with monitoring the extraction and certifying the transport. Transport of *Tendu patta* is not permitted without this certification. A lot of scope for corruption exists in this system and thus, many officials prefer it.

A study conducted in 1988 revealed that the royalty earned by the government from *Tendu patta* contracts in some parts of Gadchiroli District was about Rs.80 million. The net profit of the contractors was about Rs.30 million. The amount spent in paying the daily wages to the collectors was only about Rs.20 million (Hiralal and Tare n.d.).

Each family in the village requires *Mahul* (*Bauhinia vahlii*) leaves for making plates, especially during festivals and functions. For a single function in the village about 2,000-3,000 leaves are required. These are collected by large groups of people who go into the forests. Mendha-Lekha villagers mostly go to the forests of other villages for these leaves because there are very few of *Mahul* climbers available in the forests in Mendha.

A seasonality chart prepared for the village further stresses the importance of forest in the life cycle of these villagers (see Table 3 on following page).

Table 3: Seasonality chart on livelihood

Months (with Gondi name)	Agricultural and Allied Activities	Forest Related Activities	Others
January (<i>Pusi</i>)	Watch on the <i>marian</i> (vegetable plots near the river) Paddy de-husking Catching fish	—	
February (<i>Mahe</i>)	<i>marian</i> watch Catching fish from the local streams, irrigation tanks and the river Daily wages with FD within or outside of the village	—	
March (<i>Shinga</i>)	Fishing in the community <i>Van talav</i> , and in the individual irrigation tanks Daily wages with FD within or outside of the village	Forestry operations by the FD, e.g. digging plantation pits, bamboo extraction, etc Hunting	Festival of Holi
April (<i>Setak</i>)	None	same as above	
May (<i>Burbadi</i>)	None	<i>Mahua</i> , <i>Tendu patta</i> , <i>Chenli</i> for sale Collection of fuelwood, bamboo, timber for house use Hunting Honey collection	Weddings and other community celebrations

Table 3 continued on following page

Table 3 (continued)

Months (with Gondi name)	Agricultural and Allied Activities	Forest Related Activities	Others
June (Teej)	House repairs, etc. Preparation of fields (depending upon the rains) for paddy	Collection of NTFP as above Collection of fuelwood, bamboo timber for house use Hunting Honey collection	Weddings and other community celebrations
July (Akadi)	Paddy plantation	None	Maximum agricultural work for the villagers
August (Pola)	Same	Collection of bamboo shoots	Same
September (Now)	Cultivation of dals e.g. Udid, Moong, and planting the <i>marian</i>	Collecting grass for rope making, underground roots and mushrooms from the forests	
October (Dasera)	The red chillies get ready for sale in the <i>marian</i> The paddy harvest	Collection of underground roots	Festival of Dussera
November (Dewali)	Looking after the other vegetables in the <i>marian</i> Paddy harvest	None, except perhaps occasional visits to the forest for underground roots, hunting, or collecting grass for rope making	Festival of Diwali
December (Pindi)	Paddy dehusking	Same as above	

Source: Janibai Topa, personal communication

The seasonality chart reveals that most villagers have enough to eat throughout the year.

The forest also provides for a number of other useful articles that villagers make themselves:

1. Building material for the house.
2. Cots, stools and other household furniture.
3. Ropes out of a certain grass, made by men and women in their free time.
4. Fishing nets, baskets, fishing baskets, bamboo mats (used to sit on, fence the courtyard, fishing, storing grains etc.) also woven by the villagers in their free time.
5. Plates made from *Mahul* leaves for eating.
6. Tobacco pouches (only as gifts for loved ones) out of *Kursi*.
7. Agricultural implements from the timber and bamboo easily available in the forests.

These and many other articles of day to day use are made as the need arises or as time permits. The monetary cost of living is thus highly reduced because of the availability of most basic requirements from the adjoining forests. It is therefore inevitable that if the quality and diversity of forests deteriorates the quality of life of the people dependent on it will also deteriorate.

Others

Many people seed their private wells and irrigation tanks (in the paddy fields) with fish fingerlings and sell the harvest. Fingerlings are often bought from the market.

In addition individuals have their own specific sources of income, e.g. labour in private/government agencies outside the village, sale of articles which they make such as carpets, baskets, etc.

2.8 Water

Drinking water is now available throughout the year in various village wells, although it reduces substantially in summers. Currently there are about four community wells and some personal wells. Water for drinking and irrigation was limited till a few

years ago. In 1997, with the help of an Ahmednagar based NGO "WOTAR", many small tanks were built by the villagers in their fields. In addition two community tanks have also been built, one under the JFM scheme of the Forest Department and the other by the villagers on their own with *shramdan* (voluntary labour). These small tanks have improved the subsoil water conditions, and recharged the wells. This area is historically also famous for paddy cultivation and traditional systems of irrigation tanks.

The villagers have also constructed a community well with financial help from of the Tribal Welfare Department. The decision to construct the community well was taken after a few villagers visited certain orchards in Amravati district. The villagers realised that having too many private wells to irrigate individual orchards had severely depleted the ground water in the area. Thus after many discussions a decision was taken in Mendha-Lekha to construct one large community well with regulated and equitable supply of water to all the villagers. A water distribution system is under discussion and is pending a final decision.

There also exist numerous seasonal and one large perennial stream (Bori Nala) with small tributaries in the forest. In addition to this, there are small perennial springs and pools retaining water through most of the year.

2.9 Local Knowledge

Knowledge of the surrounds is reflected in every sphere of village life. This is very well expressed by Shivram Duga, a resident of the village,

Very often forest officials think villagers are thieves of forest resources because they like to roam around in the forest. If a villager has to pass through the forest, as a habit, he will never just follow the road and come back without having seen much else. Being in the forest is a question of survival, our eyes are always open, we are taking in everything; new things that have come up; what has been cut? what has been planted? This is because next time when we need something from the forest we won't go looking for it then,

we would already know where we can get the best deal and all we would have to do is go and bring it. (See Annexure A for ethnobotanical information).

Fishing is an important activity for the villagers. Over generations they have devised various indigenous methods of fishing. These fishing techniques are simple and ecologically non-destructive. Traditional herbal poisons used for fishing merely numb the fish, which can then be caught. The water body along with the other creatures revives in a short time. Traditionally certain plants such as *Kurkut* (*Olex sp.*) and *Gandi* are used for catching fish. Different species of plants are often used for different species of fish.

Villagers use the leaves of *Gandi* against paddy pests also. They put the leaves in the stagnant water in paddy fields and leave it to work. This according to the people is an effective way of controlling pests.

Hunting being an integral part of the village culture, villagers possess an amazing amount of knowledge about animal behavior and habitat (see section 3.2 for details). However, there is scanty knowledge about medicinal plants among the people, especially the younger generations. Though people talk about older generations who had mastered the art of forest medicines, only a few people in the village harbour amateur interest in traditional medicines and go to the forests and explore such herbs.

3. Ecological Profile

3.1 Habitat, Fauna and Flora

As per Rodgers and Panwar (1988) this area falls in the biogeographic zone of the Central Plateau. The forest type is Southern tropical dry deciduous forests (5A/C3), with patches dominated by teak and bamboo (Champion and Seth 1968, Wp 1994). The local sub-types of forests found here include teak forests with dense bamboo, teak forests with scanty or no bamboo, Mixed forests with dense bamboo and mixed forests with scanty or no bamboo. The main species of bamboo is *Veddur* (*Dendrocalamus strictus*) while *Katanji* (*Bambusa arundinacea*) is also found along the major streams and river banks (Wp 1994). For a detailed list of flora and ethno-botanical information see Annexure A.

Local ecosystem types include human settlements, agricultural areas, abandoned shifting cultivation fields (locally called *gohdum*), regenerating previously clear-felled areas, *nallahs* and rivers, bamboo dominated forest pockets, good mixed forest patches, teak dominated forest patches, open rocky and grassy patches, degraded forest patches and scrub forest patches. Five clearly distinguishable landscape elements (LSE) identified by us are:

1. Agricultural land: (a) traditionally cultivated areas usually low lying, dominated by paddy fields with isolated trees on bunds and high grounds; (b) areas encroached in recent times for agriculture, with dead trees, recently girdled trees and thickets.
2. Degraded forest near the village, dominated by *Garadi*, mostly coppice growth.
3. Open forest on poor shallow soils (*tekad* areas). Most trees have poor form, probably due to some disturbance in the past.

4. Bamboo dominated forests on good sites: a) closer to the village; b) away from the village.
5. Forests on the upper slopes of the hills. Slightly drier than the rest of the forest.

Box 4: Prime wild mammal habitats in Mendha-Lekha (see map 3)

1. **Pen Metta:** A sacred mountain for people of Mendha-Lekha. The mountain has a large number of boulders as well as deep caves and crevices, where sloth bears spend the day. Ranin Dohra, a perennial waterhole, is situated close by. The fact that the mountain is sacred to them does not prevent the villagers from hunting animals here, except within the premises of the temple.
2. **Sahel Dongar:** The northern slopes have excellent forest with large trees, especially near the base of this, the highest mountain in the area. This is also the habitat for the Giant squirrel (*Ratufa indica centulus*), which is quite a rare animal in this region. Presence of this animal is a good indicator of tall and close canopy forests with a good supply of fruit trees. Signs of sloth bears are extremely common here.
3. **Thangad kohda, Neeral hukke and beyond:** These areas have dense bamboo clumps and are relatively further away from habitation. Giant squirrels are reported to nest here.
4. **Tahangad Metta:** There is good bamboo forest on the lower part of the Northern slope.
5. **Ranji Nalla:** Dense, tall thickets of thorny bamboo (*Bambusa arundinacea* or *Katanji* in Gondi). According to the Mendha-Lekha villagers, tigers are occasionally spotted here.

A detailed list of fauna as recorded during the study is given in Annexure B. As per this list a total of 125 species of plants, 25 of mammals, 82 of birds, and 20 of reptiles have been recorded in all the identified LSEs so far. Villagers mention the presence of gaur (Indian bison), chital (spotted deer) and wild dogs in the past, none of which have been sighted for the last three decades. Animals like monkeys and langurs are used in traditional medicines. Wolf, leopard, sloth bear, tiger and peafowl are the endangered wild animal species in the forests of Gadchiroli district (Wp 1994), and are reported from Mendha-Lekha. Another highly endangered species found in these forests is the

Indian giant squirrel. The range of the sub-species found here is restricted only to certain parts of Central India. Leopards are common and often visit the village at night. Reports of tiger sightings are few, the last tiger sighting being in 1996. A livestock killing by the tiger was last reported in 1995. Considering that livestock kills were reportedly very common in the past, this indicates a possible decline in the population of the predator.

Box 5: *Kanyas*, the mysterious aquatic animal

The villagers describe "*Kanya*" as a long creature with skin resembling that of a crocodile, but smooth like a large fish (the description sounds very similar to a mermaid). Few people in the present generation have seen the animal but all have heard about it from their ancestors. Villagers reject the possibility of it being a python, pangolin, crocodile, or any such animal. Villagers also claim that the water in the rivers is gradually going down because of which many *Kanyas* have abandoned these streams and rivers. Some also give the increasing use of chemical poisons and explosives for fishing, as a reason for the *Kanyas* having abandoned these rivers. Villagers react to the sighting of a *Kanya* with mixed emotions of fear and reverence. There are many folk tales and beliefs associated with the animal. According to one belief, the *Kanyas* are harbingers of good rain. Such beliefs are contradicted by beliefs that seeing these animals invariably leads to deaths or misfortunes. Children in the village describe the picture of a river dolphin in their textbooks as *Kanya*. The possibility presence of river dolphin in the larger streams and rivers of this region cannot be ruled out as this area forms part of the upper Godavari catchment, from where river dolphins have occasionally been reported. This, however, could not be confirmed.

3.2 Pressures on the Wildlife Habitat from Mendha-Lekha and Other Villages

Wildlife habitat in the forests of Mendha-Lekha has been affected by many factors. Assessing the relative share of damage caused by each of these activities, current or past, is not possible at this stage considering the level of the data as well as availability of time.

Forestry and Other Official Operations

No coupe felling is carried out in the forests at present but official extraction of bamboo has been restarted from the year 1998 after almost a decade. According to the villagers, this, in addition to the people's activity in the forest for their own requirements, causes a constant disturbance to the wild animals. There are seasonal increases in the activities in the forests, such as in the fuelwood collection season, *Mahua* season, *Tendu* patta season, bamboo extraction season, etc. The extent of damage caused by these activities has not been assessed. In addition, the forests were affected by the activities allowed or carried out by the Forest Department in the past, including logging, charcoal making through contractors, bamboo extraction by the paper industry and others (see section 5.3 for details).

Hunting

Hunting for personal consumption is a traditional practice among the tribal communities. It is prevalent in Mendha-Lekha and surrounding villages also. Venison is sometimes sold within the village or in the neighbouring villages. Hunting is especially predominant in summers, when the foliage is low and water resources are limited. Villagers indicate that the populations of some species have reduced in the last few years, for example gaur, wild dogs, etc. Older people reminisce about the times, just a few decades ago, when animals like the hare and sambar were very common and could be easily seen and hunted much closer to the village. They also indicate that hunting by individuals has increased in recent years (especially by using traps) as the community hunts have decreased. A few villagers are aware that there are many other areas where the extent of forests is less but wildlife population is high. The reason for this, according to them, is that hunting in those areas is strictly prohibited (e.g. in Tadoba National Park). However, all villagers do not relate the decrease in wild animal population directly to hunting. According to them a more direct cause is the increased level of constant disturbance in the forest, ever since the take over of the forests by the FID in 1950s.

Box 6: Hunting for joy, a tribal tradition

In one hunting incident, the villagers managed to injure a Sambar (*Cervus unicolor*) or may on the first day of hunting. The animal was injured but managed to escape. A group of about 70 villagers (old, young, male, female) went again the next day but could not find the injured animal. However, they managed to get a Chowsingha (*Tetracerus quadricornis*). This small animal was divided equally into seventy shares, each person getting less than 250 gm. Considering that two full days were spent doing nothing but hunting in the forests, coming back with that small a quantity definitely does not indicate a subsistence dependence on hunting. It does indicate though that hunting is still a very important cultural and community activity done mostly for the joy of it. In addition, most villagers prefer the taste of wild meat to the domestic animals and birds.

According to the villagers, hunting with guns was very common in Mendha-Lekha till about a couple of decades ago. Almost every family had a crop protection gun which was invariably used for hunting. When the Naxalite¹ movement became stronger in this region in the mid-1980s, the guns were returned to government as per the government orders. Hunting with guns was thus restricted to a great extent, though hunting using other techniques, as mentioned below, continues.

The village has had a history of many very good hunters. People tell anecdotes of hunters capturing about 200 birds at a time. Even today there are many skilled hunters, all specialising in their own way of hunting. Different techniques of hunting are used for different animals and in different seasons. For example a chinkara is killed using a noose (*phasa*), a wild boar with

¹ Even though the the Zamindari (Landlord) system was officially abolished in India in the 1950, the exploitation of the poor by rich land owners continued in most parts of the country. A militant movement was started in the 1960s by a group of urban youth against such exploitation and to support the existing uprising of the poor in a village called Naxalbari in West Bengal. The movement subsequently spread to many forested and tribal areas of West Bengal, Bihar, Orissa, Madhya Pradesh, Maharashtra and Andhra Pradesh and continues to be fairly strong in certain parts of these states. Gadchiroli is one of the districts in Maharashtra where such militant activities have strong roots.

the help of a small spear and birds are hunted using nets or a sticky substance called *chikki*. Villagers possess an extensive knowledge of animal behaviour, habitat and techniques of hunting. Some hunting methods are quite destructive, such as the hunting of giant squirrels. This arboreal animal is killed by identifying the tree with the nest and then felling all the trees around it. Finally the tree with the nest is also felled. The squirrel falls to the ground where it is quite helpless and is easily caught by the accompanying dogs and killed.

Villagers mention a tradition of special annual community hunts. One of the community hunts, locally called *Mulol Pudhela*, is specifically for the hare (*Lepus nigricollis nigricollis*, *Mulol* in the local language) and the second one is a ceremonial hunt in which any animal is hunted. However, despite constant questioning, the details of these could not be obtained. It was not clear whether the villagers did not understand the questions or did not want to reveal any information. The younger generation clearly did not appear to know the reasons behind these traditions.

There have been no traditional rules for regulating hunting in the memory of any living person in the village. They speculate, however, that specific rules for wild animal hunting like not killing pregnant and sub-adult animals, not hunting in certain seasons, etc. must have existed in the past. According to the older generation traditional rules quickly vanished when guns replaced the traditional systems of hunting, sometime in the early twentieth century. People remember rules for sharing the hunt which were followed till not so long ago, and to a lesser degree exist even today. As in the community hunts today where each hunted animal is shared equally, irrespective of its size, there existed systems of sharing even when one person went for a hunt. These have now more or less disappeared, maybe thus increasing the need for more individual hunts.

Among the main systems of sharing were:

Tiksi: This system existed till about 30-40 years ago. An animal hunted by an individual alone was divided into two equal halves. One half of the hunt was kept by the hunter and the rest was distributed in the village.

Rim: If an injured animal or the unclaimed body of a fatally wounded animal was found within the village boundary, it was taken to the village temple and was cooked and eaten by the entire village.

The villagers are not very comfortable talking about hunting. They know that hunting is illegal. There are other indirect dangers also; for instance, this being a *Naxalite* area, keeping guns is legally prohibited. Government orders to law enforcement agencies are to shoot at sight anyone spotted with a gun. There have been many such instances in the nearby villages.

Box 7: Bodal, The wild buffalo hunt dance drama

It was dark everywhere. Lights were switched off. There were fires burning in two corners of the courtyard where the entire village had gathered. Near one of the fires sat the drummers, who were continuously beating melodious tunes on the drums. The dance drama started with the *pujari* performing a religious ceremony to call a wild buffalo to the village forests for the villagers to hunt. Then suddenly from nowhere a huge wild buffalo appeared (two men carrying a bamboo frame covered with a black blanket, framing perfectly the shape of a wild buffalo). A long buffalo hunt then followed but the hunters did not succeed. In the process, the hunters' various methods of hunting and the buffalo's methods of escaping and attacking were realistically and beautifully depicted. After changing many *pujaris* and many hunters the buffalo was finally killed and the *pujari* who brought this success to the village was appreciated and rewarded.

This was followed by the adventures of a shepherd in the forest with his goats and dogs (enacted by the children, who get these minor roles till they become expert enough to take on the larger roles), with the wild animals and other elements of the forests. The entire play was so realistically done that one tended to forget that one was not actually inside a forest. Small children depicting the exact reactions of domestic dogs sensing the predators, goats becoming nervous, sounds of the animals, a prowling tiger, encounters with sloth bears, hyenas, jackals, panthers and the fear of the mysterious wilderness and its spirits. The imitations were perfect and indicated the deep knowledge of animal behaviour and a respect for the unpredictability of the forest.

The play appears to be a traditional way of teaching the youngsters about the forests, animal behaviour, techniques of hunting, presence of mind, indications of danger, consequences of making mistakes, and so on.

Annual Forest Fires

Extensive forest fires are annual occurrences (though according to the villagers the extent of fires has reduced since 1997 because of the vigilance by the VSS (see section 6.2). Fires usually start in March and continue till the end of April. Major reasons for starting fires according to the villagers are: clearing of the forest floor for hunting, burning of growth under the *Mahua* trees to clear the floor for easy collection of *Mahua* flowers, negligence (people smoking in the forests and around), fear of snakes and other animals, etc. According to the FD, deliberate burning by the *Tendu* contractors to increase *Tendu* leaf sprouting is an important reason. A strong belief among most villagers is that forest fires are good for the health of the forest especially, for a fresh flush of green fodder grass and *Tendu* leaves². Villagers agree that some species must be adversely affected by these fires, yet firmly believe that most species don't. Among the species that seem to be affected is the grass used for thatching. The availability of this grass has substantially reduced in recent years. Fire appears to be the only reason that has led to this reduction, as it is not a favoured species among livestock. Villagers believe that forest fires lead to excessive soil erosion from the forests. As an experiment the villagers have decided not to cause fires in the forests and to report any incidents of fire immediately (see section 6.2). The VSS has appointed a fire-watcher under the JFM programme to protect the plantations in the fire season. The villagers feel that more watchers are needed to protect the entire forests from fires but there is no provision for more than one watcher in the JFM programme.

Livestock Grazing

Cattle from Mendha-Lekha and the surrounding villages traditionally graze in the forest. Legally, grazing is authorised only in certain areas of the forest but resource use maps made by the villagers indicate that grazing occurs in almost the entire forest

² Fires benefit *Tendu* coppicing by leading to a fresh flush of leaves, which the villagers collect for the *bidi* industry in the month of May.

except on steep mountainous areas. According to the FD, extensive grazing by large number of scrub cattle is causing serious damage to the ecosystem. Villagers also report a sharp decrease in the availability of palatable grass, especially in areas closer to the village. Older people agree that both the human and livestock population has increased in recent years, and is causing pressure on the forest resources. Field observations on regeneration status of species such as bamboo, palatable grass, etc. close to the village also indicate this. There have been a few discussions in the *gram sabha* about over-grazing but no conclusive decisions have been made so far.

Fuelwood and Other Resource Collection

The impact of extraction of fuelwood, timber, leaves, fruits, roots and other natural resources on the wildlife habitat could not be assessed adequately during the study and does need further assessment. The *Nistar Patrak* (official document on customary rights) specifies areas for the extraction of all the above mentioned *bona fide* needs of the villagers. However, in practice these activities are not restricted to any particular area in the forest. (See section 2.7 also).

Impact of Other Villages

Resources having depleted in surrounding villages, there is now an increasing pressure from surrounding villages on the resources of the Mendha-Lekha forests. The villagers of Mendha-Lekha protect the forests from unauthorised extraction by neighbouring villagers and other outsiders. Often material extracted by the outsiders is confiscated. However, traditional and current relationships with the neighbouring villagers can sometimes make such punishments difficult to execute. Neighbouring villagers are required to seek permission for extraction of biomass for basic requirements from the *Van Suraksha Samiti* (VSS). However, they seldom abide by these rules (see section 6.1).

4. Current Administrative Profile

Gadchiroli District has a Collectorate office headed by a Collector. The Collectorate office has two main functions, namely, collection of revenue and disbursing of funds for development works. The district is divided into many *tahsils*, which are the basic units for revenue collection. In the state of Maharashtra, each *tahsil* also has a Block Office which is the basic rural development unit. The *Tahsildar* is the chief officer in the *tahsil* office. The Block Development Officer (BDO) is the chief officer in the Block Office. The land revenue records are kept in the office of the *Patwari* (official under the *Tahsildar*) in the *tahsil* office. (The recent 73rd amendment in the constitution has now made it mandatory to hand over the land records to the respective villages through their *panchayats* and *gram sabhas*). Under the BDO many extension officers function to implement the schemes in the villages. The lowest government personnel at the village level is the *Gram Sewak* (literally, village helper).

Administrative flow chart for the area under the Revenue Department is given below:



Source: Agricultural Extension Officer, BDO's office, Dhanora

The forests, like elsewhere in the country, are administered by the forest department. For administrative convenience all the forests in Maharashtra State are divided into different Circles, the Circles are further divided into Divisions, Divisions are made up of Ranges, Ranges are split into smaller Beats which in turn are divided into different Compartments. The overall in-charge at the sub-state level is the Conservator of Forests (CF), who sits in the Circle office. The Divisional Forest Officer (DFO) or Deputy Conservator Forests (DCF) and Assistant Conservator Forests (ACF) sit in the Division office (usually located at the district headquarters), while the Range Forest Officer (RFO) sits in the Range office (usually located in the *tahsil*). Round Officers or Foresters and Forest Guards also sit in the Range office and have the responsibility of looking after certain Compartments and Beats respectively. The forests falling within the boundaries of village Mendha-Lekha fall under Dhanora Range of Gadchiroli Division in North Chandrapur Circle of Maharashtra. Apart from the CF, DCF, ACF and the RFO, there is one Forester and two guards responsible for the protection and management of the Forest Compartments falling within the village boundaries.

At the village level the body that interacts with the government administrative and judicial functionary is the village *panchayat* (executive council of elected representatives from one village or a group of villages). In most government schemes and programmes the official implementing and fund receiving agency is the elected *panchayat*. In case of Mendha-Lekha, the *panchayat* is composed of the elected members from Mendha-Lekha and two other adjoining villages. In Mendha-Lekha, the *gram sabha* (see section 6.2) is responsible for all village level decisions including those related to natural resource use and management. These decisions are finally carried to the *panchayat* through unanimously selected members of the *gram sabha*, who represent the village. In 1999, a decision was taken by Mendha-Lekha and the other two villages, forming the *panchayat*, that members of the *panchayat* would be selected instead of being elected. By doing so they hope to eliminate the corruption in-

involved in the election procedure. This decision was based on the villagers' experiences with the previous elections. Often the representatives were elected by influencing the electorate with favourable promises or bribes. In a unanimous selection process there are little chances for such malpractice as the selection process takes place in an open meeting where pros and cons of selecting each candidate are discussed and a final decision is taken unanimously. The candidates have little opportunity to influence the decision using unacceptable means.

5. Historical Profile

5.1 History of Administrative Control over Land and Resources in Gadchiroli District

The entire Vidarbha region of Maharashtra was under the Central Provinces (C.P.) and Berar State in British India. It was transferred to the state of Maharashtra in independent India after the reorganisation of states in 1960. Till 1980 Gadchiroli was a *tahsil* under Chandrapur district of Maharashtra. In 1980 it was given the status of an independent district.

The total area of the present Gadchiroli district is 7,22,927 ha (GoM 1973). About 80% of this is under forest cover (FS 1995), a figure that is the highest in the state and is among the highest in the country. During British rule, only about 171,90 sq.km. of the forests in the present Gadchiroli district were under the official category of Reserved Forests (RF), declared in 1897 (Wp 1994). Most of the Gadchiroli region followed the *zamindari* system of administration and the *zamindars*, who controlled the forests and other lands, were mostly local tribals.

A recorded history of Gadchiroli district is difficult to find. It is known that the area was administered by many feudal landlords under the overall monarchy, initially of the Raj Gonds (tribal kings), and later by other invading rulers including the Rajputs, Marathas and Muslim rulers. Considering the inaccessibility of the forests in these areas, the landlords were mainly left to themselves to administer their land. These landlords had to follow certain agreements (*sanads*) with the rulers. The area was annexed by the British in 1854 and was amalgamated with the state of C.P. and Berar. Considering the difficulty of directly administering these inaccessible areas the *zamindari* system continued even during British rule (CPG 1909).

The British later realised the immense importance of the forests for revenue generation. The process of nationalisation of forests had started in other parts of C.P. and Berar. Parts of

Gadchiroli district were also nationalised between 1879 and 1895 under the Indian Forest Act of 1878. The forests under the *zamindars* were not taken over but these were managed as per the rules laid down by the colonial government (Wp 1994). These rules continued till 1886. There was not much commercial harvest of timber in Gadchiroli till the early 1880s. Wanton exploitation of forests for timber, including in *zamindari* areas, began when the country faced an exponential increase in demand for timber for railway sleepers. *Zamindars* stood to gain enormous monetary benefits and thus ignored all government rules. Finally the Central Provinces Land Revenue Act, 1917 was enacted, under which the Deputy Commissioner could proclaim that the *zamindari* forests would be protected by the government if the *zamindar* himself violated government rules (Wp 1994). Under these rules cutting of some valuable trees such as teak, *ain*, *bija*, *shisham* was restricted. Rights for timber extraction or giving out leases or contracts for such extraction were vested with the Deputy Commissioner of the district. In addition, shifting cultivation was also banned under these rules (Wp 1994). It is not clear whether these stricter rules were able to control the wanton destruction of forests. The status of forests and forest management in the *zamindari* areas in which village Mendha-Lekha fell was also not clear. It appears, from conversation with the local people, that shifting cultivation continued in Mendha-Lekha till the take-over of the forests by the Indian Forest Department.

The *zamindari* system was abolished in India in 1950 (following independence in 1947) and all *zamindari* lands came to be vested with the government. Suitable forest areas were handed over to the Forest Department for management. These forests were subsequently declared Protected Forests (PF) under the Indian Forest Act of 1927 (IFA)¹. In 1959 the state declared its

¹ The Indian Forest Act of 1927 identifies three categories of forests under state control: Protected Forests (PF), Reserved Forests (RF) and Village Forests (VF). The RF are the strictest category where very few rights of the people are accepted and most rights are extinguished. PFs allow more rights in them. VFs are forests which are owned by the state but are handed over to the villagers for management and use, a category rarely used.

intention to constitute these as Reserved Forests (RF) under the same Act (Wp 1994). In 1960 these forests were included in the Working Plan (WP) that was used for the management of forests falling within the North Chandrapur Circle. The prescriptions of this WP were implemented in the forests of Mendha-Lekha till 1987. Once the *zamindari* forests were handed over to the FD for management, a settlement officer (SO) was appointed to look into the rights of local people in these forests. It is a requirement under the IFA that the rights of local people are either legally accepted or acquired before any forests are converted to RF. In his report the SO recommended conversion of 1697.27 sq. km. of RF, out of the total of 2019.65 sq. km. of PF and unmanaged forests in the Gadchiroli Forest Division. The remaining 316.11 sq. km. was assigned as PF to meet people's *nistar* (customary) requirements. This recommendation was implemented and these forests were declared RF on 5th May 1992 (Wp 1994). This decision affected a substantial part of the forests traditionally falling within the boundaries of Mendha-Lekha village also, as 1639.21 ha. of the total area of the village was declared RF (Rao pers. comm. 1998). The criteria used for assigning areas that would fulfill people's *nistar* needs are not clear.

Not much is known about the legal provisions applied for wild animals in these forests prior to 1972. It is also not known whether there were any official restrictions on hunting of wild animals. After the enactment of the Wild Life (Protection) Act 1972 hunting of wild animals was banned in the entire country.

5.2 Rights of Local People

In Gadchiroli district a large population of tribals has been dependent on the forests for their subsistence and cultural survival since time immemorial. Under the *zamindari* rule people's access to forests for their everyday subsistence largely depended on the whims and fancies of the *zamindars*. According to the old people in Mendha-Lekha village, in exchange for privileges in the forests the local villagers were required to work for the *zamindar* without payment (*begari*) (GoM 1973, Duga personal

communication 1998, Wp 1994). There were no restrictions on the extraction of resources, except the ones prohibited by the government. The RF of Gadchiroli district, like in other parts of the country, was under the British and only limited or no rights were granted to the local people. Some surrounding agricultural villages were given cattle grazing concessions (Wp 1994).

After the abolition of the *zamindari* system, the areas occupied by the settlements continued to be privately owned whereas all other wasteland, common property land, etc. came under state ownership. A strong system of community management and use of these common lands existed prior to the state take over. These customary rights over common property (or what were called the *nistar* rights in this region), which people had enjoyed for generations were officially not accepted by the state. There was a strong demand from the tribal dominated Vidarbha region for recognition of customary rights on the forested lands taken over by the government. Under pressure from the local population a one man Committee, the Verma Committee, was appointed to look into *nistar* rights. The *nistar* inquiry for Gadchiroli started in 1953 and the final report was presented by the Nistar Officer and the Deputy District Collector in 1955 (Hiralal and Tare n.d.). This report recommended that the *nistar* rights be legalised in the form of an Act (Rao pers. comm. 1998). The Nistar Officer also recommended formation of *nistar* zones for villages to meet their daily requirements, which was subsequently accepted and implemented. However, because of the inaccessibility of the forests in this district, the Nistar Officer could not visit many villages and researchers and local activists believe that the area allotted to the people as *nistar* zones was not assessed properly and was arbitrarily demarcated. There was no actual physical demarcation on the ground, leading to a state of confusion about the limits of these zones. People's actual needs were not taken into consideration while demarcating these *nistar* areas and neither was there any effort to inform the villagers about these zones (Hiralal and Tare n.d.). A provision was made in the Madhya Pradesh Land Revenue Code of 1954, for prepa-

ration of a *Nistar Patrak* and a *Wazib-ul-urz* for every village. While the former would deal with the management and use of government land, the latter would deal with privately owned areas. For every village a detailed *Nistar Patrak* was prepared. In addition the MP government issued detailed instructions about the management of *nistar* supply, vide Government No. 2396-2389 XXVII, dated 16 October 1956. These instructions listed details about areas from where *nistar* was to be made available, extent of *nistar* to different categories of people, management of *nistar* and other forests and extraction and distribution of *nistar* material by *gram panchayats*, *gram sabhas* or *nistar panchayats*. These instructions envisaged that the forests would be managed on a scientific basis by the FD and communicated to the village bodies that would then regulate the supply of *nistar* as per the rules. The quantum of *nistar* was to be regulated as per the Government order No. 1335/1606-XXVIII, dated 19 June 1953 (Wp 1994). Later on, in 1966, when the Maharashtra Land Revenue Code was promulgated, the provisions of *Nistar Patrak* and *Wazib-ul-urz* were accepted in it. The *Nistar Patrak* covered matters concerning cattle grazing and removal of forest produce. It also took into account free grazing for agricultural cattle, free removal of forest produce required for *bona fide* use and concessions to be provided to the village craftsmen for use of articles required for their craft.

The FD, however, was critical of the *Nistar Zones* specified by the *Nistar Officer*. They claimed that:

1. Some area that was previously under the FD had also been included in these *Nistar Zones*.
2. Sometimes the entire forest area falling within a village area was marked as *Nistar Zone*, which the FD considered far too much for a single village.
3. Details regarding the quantum of *nistar*, the period during which it could be allowed, and the payment, if any, to be made were not clear in the *Nistar Patrahs* of the villages (Wp 1994).

Information available from Mendha-Lekha village indicates that

people got free *nistar* passes to meet their needs. These passes were issued first by the village *Patel* and then by *panchayat* office. In the 1960s, after the settlement process the matter came into the hands of the FD and *nistar* passes began to be issued on the payment of some concessional rates. As the specified amount of *nistar* was not sufficient to meet people's requirements, and paying more money was not economical for them, paying bribes to the local forest officers became a common practice. In Mendha-Lekha, people describe the period between the state take-over in the 1950s and the beginning of the movement towards self-rule in 1989 as filled with unpleasantness and humiliation. Those were the days when local people were at the mercy of the local forest officials to be able to meet their basic requirements from the forests. They had to pay bribes or provide "liquor and chicken" to the foresters and forest guards. They were treated as thieves and were made to believe that they were stealing. In the words of an old man from the village, "We were told that the forests had become *sarkari* (owned by the government). We did not know what it meant, we just did what we were told to do and 'stole' the resources when we needed them." Villagers recount that earlier they were scared of outsiders and villagers often ran into the forest to hide if any government officer came to the village. Things are very different today - all government officials are viewed as equals (see section 5.4). Now the village has a specified system of obtaining *nistar* requirements from the forests, regulated by the VSS (see section 6.2).

In 1992, a major part of the approx. 1900 ha. of the *Nistar Zone* of Mendha-Lekha was converted to RF leaving about 350 ha. as PF for the villagers to meet their *nistar* requirements. People in the village still do not fully understand the implication of the forests having been converted to RF. They were not aware of the government's intention of reserving these forests. This realisation came only when the government started physically demarcating the land under the Revenue Department and under the FD (i.e. RF and PF are under the jurisdiction of the FD while all other land including the land under private ownership falls under the Revenue Department). Unaware of the actual

reasons for the presence of government employees in their forests, villagers assumed that it was an effort towards appropriation of their forests by the government. This refreshed the memories of the period before the village movement towards self-rule started—the period of extortion and exploitation. Mendha-Lekha villagers tried to physically stop laying down of the trenches (for demarcation). However, the process continued and as stated earlier, the forests became R.F. Six years later, in 1998, people had still not experienced the practical impact of the restrictions in accessing these newly formed R.Fs. The villagers subsequently learnt about the change in the legal status of the forests through interactions with NGOs and local forest officers. The reservation of forests is now perceived by the villagers as another act of asserting a greater state control over their forests. Currently, however, they continue to view the entire 1900 ha, as their forest and extend regulated use and protection activities to the entire forest area.

5.3 Land Use and Resource Use Changes in and Around Mendha-Lekha

Village boundaries in Gadchiroli district are based on a survey conducted by the British between 1922 and 1924. In this survey demarcation of boundaries was done based on the traditional boundaries of the villages. At present, forest compartment nos. 145, 146, 147, 148, 149, and 150 of Gadchiroli Forest Division, Dhanora Range, fall within the traditional boundaries of the village. During the *zamindari* times Mendha-Lekha village was among 32 other villages under the *zamindar* of Dhanora.

Even prior to the 1950s when people had free access to forest resources, there was no commercial extraction of timber. Non Timber Forest Produce (NTFP) such as fruits, leaves, roots and flowers were collected for personal consumption or barter. The only commercial extraction was that of *Tendu patta*, carried out by the local people for contractors from outside the region, who had government licenses to extract *Tendu* leaves. There was no restriction on hunting but primitive hunting methods

and community rules and systems for hunting probably ensured that wild animal populations were not affected much (see section 3.2). Villagers had shifting cultivation sites spread across the forests. Shifting cultivation was stopped by the FD sometime after the state take-over of the forests. Good regeneration of bamboo can now be seen on these abandoned shifting cultivation sites, which are locally called *gohduns*.

In the WP formulated for the scientific management of forests by the FD, there has never been a provision for clear-felling of trees in the forests of Mendha-Lekha. The Selection and Coppice with Reserve System of forest management, which was followed here, meant development of forests by removal of old trees to favour regeneration of teak and other commercially valuable species and then selectively felling the same for commercial use.

From late 1960s to early 1970s, some patches in the forests of Mendha-Lekha were contracted out to charcoal contractors by the government. Local people worked as labourers for these contractors and found the methods used for wood extraction most destructive. There are still patches in the forest which, to us appeared not to have recovered from the impact of charcoal making. This could be due to a combination of the following factors:

1. For charcoal making, all the trees in the area are felled and burnt.
2. Some of these areas must have been poor in soil cover to begin with, so could not regenerate even after the felling and burning stopped.
3. Annual fires and cattle grazing could have further affected the regeneration on these sites.

Parts of these forests were also subsequently leased out by the government to a paper mill for bamboo extraction. This extraction continued till 1989 when it had to be stopped under local pressure (see section 6.1 for details).

Meanwhile, the Forest Resource Survey conducted by the government in 1987, revealed that the *Nistar* Zones designated

in Gadchiroli district in the 1950s had now largely been encroached upon and converted into agricultural fields. The remaining areas had been severely degraded because of use by local people and because of the revenue department using it for non-forestry purposes such as stone quarrying (Wp 1994). Whether this information also refers to the forests of Mendha-Lekha, could not be ascertained. Parts of Mendha-Lekha forests were also encroached upon by local people till the early 1990s. These encroachments stopped after a decision against it was taken by the village. The forests of Mendha-Lekha do not appear to be in a severely degraded state (see section 6.2).

5.4 Origin of Community-Based Conservation (CBC) Initiative

The movement towards self-rule in the village started as part of a larger mass movement towards tribal self-rule in Gadchiroli district and surrounding areas. This self-rule movement in turn has its roots in an anti-dam protest in Gadchiroli district in 1984-85. The government had planned a mega hydroelectric scheme that envisaged construction of Inchampalli-Bhopal-pattanam a twin dam complex on rivers Indravati and Godavari. These dams would have submerged a large part of lush forests and displaced thousands of forest dependent tribals. It was alleged that while the tribals would suffer enormous economic, social and cultural disruption, the benefits of the power generated would mainly go to industry and other elite sections of society. The tribals were not ready to pay this price, and the project thus faced strong public opposition. Many NGOs helped the local tribals in mobilising and organising public rallies and agitation against the dams.

Thus began the "*Jungle Bachao Manav Bachao Andolan*" (Save Forest Save Humanity Movement). The struggle emphasised and strengthened the determination of the tribals to take decisions at a local level for activities directly affecting their lives, culture and livelihood. The government shelved the project after prolonged tribal opposition.

Devaji Topa of Mendha-Lekha and Mohan Hirabai Hirabai

(from the anti-dam movement) encouraged this process in Mendha-Lekha. After many discussions in the village it was realised that a demand for self-rule could not be validated until the people had the capacity to take on responsibility. To this end it was important for the villagers to give up vices and habits which may have rendered them incapable of responsibilities. A major incapacitating vice was alcoholism, especially among the men and particularly because brewing alcohol was religiously accepted and socially upheld. Subsequently, many discussions were initiated in the village mainly by Devaji and Mohanbhai and sometimes by other villagers, over a period of four to five years. These included discussions on alcoholism, the equal status of women in their society, the need to protect and regulate use of the surrounding forests, etc. As a result of these long and transparent discussions, prohibition became a social rule and alcoholism is now looked down upon in the village. The women played a very important role in achieving this.

Women, who were traditionally not allowed to participate in village meetings, have now created very active village level women's bodies (see sections 6.2 and 6.3). These village discussions have also resulted in the development of a forest protection and management system in the village.

In the past, most decisions were taken by the village elders. Through village discussions a decision was reached to constitute a village level decision-making body, the *gram sabha* (see section 6.2 for details). It was agreed that all decisions in the *gram sabha* should be based on consensus and should prevail over any government or other decisions. This gave rise to the slogan "*Maav nate mate sarkar, Dilli, Bombay maav sarkar*" (our representatives make the government in Delhi and Bombay, and we are the government in our village). This slogan played an important role in strengthening people's determination for self-rule. Another slogan that was adopted by the *gram sabha* was "*Jungle nasht karne vikas nahi, sanskriti nasht karne sudhar nahi*" (no development by destroying forests, and no reform by destroying cultures). The latter laid the foundation for subsequent movements in the village, especially the movement for taking charge of their

forests for protection, conservation and regulated self-use.

The *gram sabha* initiated the move towards village self-rule by acquiring factual, legal and political information about the village including various revenue and *nistar* documents. This move initially faced strong opposition in official circles but villagers eventually succeeded in acquiring all important documents (Hiralal and Tare n.d.).

6. Elements of CBC

6.1 Efforts Towards Forest Protection

The movement towards self-rule and a greater realisation of the importance of the surrounding forests made it clear to the villagers that they needed to take charge of the surrounding forests. Efforts towards forest protection started in 1987 through various discussions in the *gram sabha*. Several decisions were taken for the protection of the forest, including the following:

- All domestic requirements of the village would be met from the surrounding forests without paying any fee to the government or bribes to the local staff. This, however, was accompanied by a set of rules for sustainable extraction.
- No outsider, whether governmental or non governmental, would be allowed to carry out any forest use activities without the permission of the *gram sabha*. If someone was caught doing so, the material would be seized by the village and the offender would have to accept any punishment decided by the village.
- No commercial exploitation of the forests, except for NTFP, would be allowed.
- The villagers would regularly patrol the forest.
- The villagers would regulate the amount of resources they could extract and the times during which they could extract resources from the forests.

Other minor decisions to regulate extraction from the forest and ensure equitable sharing of natural resources were also taken. To implement these decisions an informal VSS was formulated, including at least two members from each household in the village.

People in the village speak with pride about their forest protection activities. They are also very proud of the fact that the forests now "belong" to them. People agree that life is much

easier since they have taken control over the resources. There appears to be a strong sense of belonging towards these forests.

Regulations on Personal Use of Resources by the Villagers

In the beginning a system of collecting fines from those who did not adhere to the village forest protection rules was established. This system did not work as it involved the added responsibility of collecting the fines. Few people were keen to take on this responsibility. Very often fines were not paid despite constant reminders. This system was finally shelved. The only systems that are followed now are:

1. Discussions on offenders in the *gram sabha*: For anyone to be discussed in the *gram sabha* is an issue of family shame. This keeps most people from breaking village rules.
2. Social ostracism: The *gram sabha* can decide to ex-communicate those who make mistakes repeatedly. The village as a whole does not participate in any function organised by these persons/families, and they are not invited for any community functions.

The forest protection rules are on the whole followed in the village. People do not harvest more than what they require as there is no inclination towards commercial use of forest produce, except for NTFP. After many discussions it was decided that on an average the need for fuelwood per family is about ten cartloads in a year. However some people often extract more than the specified amount as they claim that this is not always enough to meet their requirements. Others for whom this quantity is too much can either give their share to their relatives or barter within the village.

As per village rules, cutting green wood is not allowed unless it is for a special purpose. It was noticed by the research team that green trees are sometimes felled for specific purposes, such as making a plough and so on. When a tree is cut there are often many branches which are not used and get burnt in the next fire season, especially deeper in the forest. Either because of the long distances involved or the effort involved such wood

is not harvested for firewood. Villagers feel that there is plenty of forest and that they don't need to unnecessarily spend time and energy on such collection.

The rules also specify that two villagers must patrol the forest daily. The previous days' patrolling team, according to the villagers, decides who should patrol the following day. A stick is kept outside the houses of the people who are expected to go the next day. However, no such patrolling team was encountered during the course of the study. It was observed, however, that people are extremely vigilant when they go to the forests for their own work and keep a watch on other activities. They keep a special watch on the forest during the *Tendu patta* collection season, as this is the time when outsiders tend to come in and cut standing trees to collect as many leaves as possible.

There is now a consensus in the village about not felling any green trees, fruit trees or other NTFP trees. In the past many trees were felled during the extraction of NTFP such as *Charoli*, *Mahua*, *Amla*, etc. The decision not to fell was taken following a joint research by the villagers with the NGO, Vriksh-mitra on the impact of collection of NTFP on the concerned species (see section 6.2). There are some sporadic incidents of felling but mostly by the people from adjoining villages. Trees were also felled in the past for collection of honey. Collection of honey was an unorganised and destructive process. Honey collection is now an organised community effort carried out in a non-destructive manner (see section 6.2).

People in the village speak with pride about their forest protection activities. They are also proud of the fact that the forests now "belong" to them. Older people, who have been associated with the self-rule movement since its inception, go out of their way to impress upon one the success of their efforts. Villagers agree that life is much easier since the villagers have started taking decisions on their own. Mohan Hirabai Hiralal says that the villagers have never known that the forests belong to them. Earlier there was no concept of ownership. Later it went to the *zamindar* and then to the *sarkar* (government). For the first time now they feel a sense of ownership towards the forest.

Regulations on Commercial Use by Outsiders

Villagers are very strict about outsiders entering the forest. Any stranger sighted in the forest is immediately reported to the VSS. In 1992, a stone quarry contractor was caught by the villagers illegally extracting some stones from the forest. He was brought back to the village and asked to seek forgiveness. The contractor was defiant and contended that the forest did not belong to the villagers and that they had no right to punish him. He insisted on going to the local forest office. The forest officials, who were by now well aware of the efforts of the villagers, warned the contractor that the matter was not in their hands and that there would be dire consequences if he did not listen to the villagers. This settled the matter and the incident became well known in and around the village.

In the early 1980s these forests were leased out to a paper industry by the government for extraction of bamboo. Local people were employed as labourers and found the methods employed for extraction destructive, unregulated and unmonitored. After the movement towards protection of and control over resources started in 1986-87, the villagers agitated against forestry operations by the outsiders such as bamboo extraction, logging by the FD, etc. Finally the industry and government were forced to stop extraction of forest resources. The paper industry stood to suffer heavy losses because of this ban. They offered a hefty donation to the villagers and promised an assured source of employment but the villagers were adamant and the industry remains banished in Mendha-Lekha forests since then.

According to the prescriptions of the FDs WP, teak extraction was due sometime in the early 1990s. Because of strong opposition from the villagers it could not be done. Villagers wanted an equal or partial share from the revenue generated by the department from the forestry operations if carried out in their forests. They were also concerned about the quality of the forests being affected by the timber extraction practices. They did not want the department to clear "unwanted" or commercially useless species, which the department usually did in order to enhance the growth of valuable timber. *Villagers prefer a diverse*

forest to a monoculture as the former provides them with most of their life sustaining resources. No consensus could be arrived at and the forestry operations remain postponed till date.

After the village came under the Joint Forest Management scheme of the government (see later in the same section), a JFM micro-plan was made in 1994. After many discussions the villagers finally lifted the unofficial moratorium on the commercial extraction of long bamboo in 1997-98. They agreed to jointly extract bamboo with the FD. The villagers give several reasons for allowing bamboo extraction including that:

1. The FD follows appropriate rules and regulations for sustainable harvest of bamboo.
2. Labour employed is from the village itself thereby ensuring sustainable practices as well as regular income to the villagers.
3. This is a good forest-based and sustainable source of income for the villagers.
4. Dried and unharvested bamboo in any case gets burnt and wasted in the annual forest fires.

Forest Protection and Conflicts with Adjoining Villages

Villagers realised that much damage is caused to the forests because of the resource use activities of the adjoining villages. This is especially so as the outside villagers have a lesser stake in the protection of the forests and are thus less careful about extractions. Some adjoining villages such as Lekha, Tukum and Kakadeli have traditionally been dependent on the forests of Mendha-Lekha. There is also a provision in the village *Nistar Patrak* for the inhabitants of these villages to meet their basic requirements from the forests of Mendha-Lekha. Mendha-Lekha villagers therefore tried to include these villages in their forest protection and regulated use activities. These efforts however did not succeed. The forests of Lekha have traditionally been much smaller than those of Mendha-Lekha and the village community in Lekha is highly fragmented. As a result the forests of Lekha now stand completely degraded and no amount of government efforts have persuaded the villagers to partici-

pate in a JFM scheme. The Mendha-Lekha VSS has allowed Lekha villagers to let their cattle graze in Mendha forests (a traditional arrangement). However, in addition, Lekha villagers carry out many unauthorised activities in these forests. Mendha-Lekha villagers find it difficult to control these activities in the absence of adequate support from the lower FD staff. The forest guards and the foresters allow nearby villagers to extract resources on the payment of bribes. The Mendha-Lekha VSS is now planning to erect a village check post at the boundary of Lekha village.

Joint Forest Management in the Village

The efforts of the villagers at forest protection were initially not recognised in official circles. An opportunity to be officially recognised came in 1992, when the state adopted a JFM Resolution. The resolution envisaged handing over of degraded forests to the villagers for plantation and regeneration, which would be managed jointly by the FD and the villagers. This involved some degree of sharing of benefits from these plantations. The scheme therefore was not applicable for districts like Gadchiroli where most of the forests are still close canopy natural forests. The villagers, however, persistently demanded that they be included in the scheme. Their contention was "why should we be discriminated against for having protected the forests so far? Should we cut down the forests to be a part of the JFM?". After some struggle and with the help of sympathetic forest officials they finally managed to enter into a JFM agreement in 1992. Subsequently, an official VSS was formed. Mendha-Lekha thus became the first village with standing forests in the state of Maharashtra (and one of the few in India) to be brought under this scheme (Rao pers. comm. 1998).

Box 8: JFM and sharing of benefits in the village

Subsequent to the JFM programme coming to the village, villagers discussed the scheme in greater detail with outside experts. They were informed about their rights and responsibilities under the programme. They have managed to bring in many provisions that usually are not within the mandate of the JFM resolution. These include meeting the *bona fide* needs of the people, and non interference with the rules set out by the villagers for the extraction of resources from the forest. Thus, the set of rules (some written, but most unwritten) that are followed by the villagers under JFM is a mixture of what the official resolution states and what the villagers have decided.

The written rules include the following:

- All decisions regarding the forests will be taken in a joint meeting between the FD and the villagers.
- Mendha-Lekha villagers will have the first right to employment in any official forest-related activity in the village.
- To carry out any work in the forests, permission will have to be sought from the *gram sabha*.

The unwritten rules include the following:

- Labourers from outside will have to take a letter of permission from the VSS.
- Villagers will extract forest produce for their *bona fide* requirement as per the existing village rules.
- Villagers will have the power to punish offenders both from within the village and outside.
- Details of the joint meetings will be recorded both by the FD and the villagers.

The JFM resolution envisages raising valuable timber species on degraded lands and harvesting the same for revenue after five to ten years. Local villagers involved in the forest protection are entitled to up to 50% of the revenue thus generated. In Mendha-Lekha, however, the government did not accept this provision, mainly because Mendha forests are standing forests where plantation for revenue generation is not envisaged.

Considering that the original JFM resolution did not take into account the standing forests, there are no guidelines for benefit sharing in such forests. Mendha-Lekha villagers demand that 50% of the profits from the sale of any forest produce extracted from Mendha-Lekha forests under the JFM scheme should be shared by the FD with the villagers as they are sharing equal responsibility towards forest protection.

Box 8 (continued): JFM and sharing of benefits in the village

The FD on the other hand contends that the area involved is too large and revenue generated too much to share with a single village in the area. Mendha-Lekha villagers say that they are open to any number of other villages sharing the benefits as long as those villagers also agree to share the responsibility of forest protection. They are also agreeable to reducing the percentage of the revenue to be shared. There are many possibilities that can be explored but the FD is not yet ready to initiate any dialogue on this issue. In fact, according to the villagers, there was a time when the FD tried to deny the fact that Mendha-Lekha has been officially accepted as a JFM village. However, the villagers asserted their claim of being a JFM village, on the basis of their own copy of the minutes of the JFM meeting.

For any forestry operation to be carried out under the JFM a joint meeting between the FD and the villagers is organised and all matters, including those of daily wages, are openly discussed. Irrespective of the provisions of the JFM resolution, the implementation of the scheme is largely based on the village rules and regulations. Activities to be carried out are decided as per a JFM micro-plan.

In 1994, the Forest Working Plan for Gadchiroli Forest Division was revised. In the light of the fact that Mendha-Lekha was now a JFM village, a separate micro-plan was to be made for Mendha-Lekha. Efforts were made by certain NGOs to persuade the FD to involve the villagers in the formulation of the plan. This demand was not accepted and villagers were consulted only for the collection of basic data on the village. The FD claims that the villagers' aspirations were taken into account while drawing out the plan. For example, practices such as bamboo extraction by the paper industry, selective felling of commercially valuable species, favouring the growth of commercially valuable species and others which were not approved by the villagers were not included for the forest area falling within the village boundaries. The villagers' consent was also sought by discussing the provisions of the plan in a *gram sabha* meeting, where joint bamboo extraction by the FD and the villagers was accepted. The plan has been in operation since 1997-98. JFM

in Mendha-Lekha is currently among the very few successful cases of JFM in Gadchiroli District.

6.2 Village Institutional Structures and Achievements

All the village level institutions mentioned below are not mutually exclusive. Composition and activities are often overlapping.

The Gram Sabha (GS)

Composition: The GS (village council) is composed of at least two adult members (one male and one female) from each household. This membership is not very rigid, and all adult members in the village can attend the meetings. The GS has its own office and the records of all meetings organised in the village are maintained by an office administrator. There are no other permanent office-bearers. The GS has also registered itself as an NGO, *Gram Niyojan ani Vikas Parishad* (GNVP) (Village Management and Development Organisation). The village has recently acquired a telephone connection.

Relationship with the official system: Irrespective of other official bodies and line agencies functioning in the village, the most important decision-making body is the GS. For the villagers, compliance of the decisions made by the GS is more important than the ones made by outside institutions. The local *panchayat* and Mendha GS have tried to work synergistically rather than getting into conflicts. The *sarpanch* (head of panchayat) is often invited for important GS meetings and is appreciative of the village initiative.

Functioning: The GS meetings are organised once a month on a specified day. Participation in these meetings is largely restricted to the villagers. Outsiders are occasionally invited for specific meetings, providing an opportunity to people from outside the village to meet the entire village and discuss their plans and programmes with the villagers. Outsiders, however, are strictly not involved in any decision-making. The GS follows the system of consensus decision-making, where matters are discussed till a

unanimous decision can be taken. If a consensus is not reached a decision is not taken and the issue continues to be discussed in the GS. The issues discussed at the GS include personal issues, community issues, forest related issues, planning for any major programmes in the village, information acquired from the Study circles, new government schemes, and others. According to Shivram Duga of the village, people sometime unanimously decide to take a decision even though there may not be a consensus in the village about the issue. This because they want to experiment with some new ideas even if they are not fully convinced about its workability. As an example he cited the issue of forest fires on which there is a divided opinion in the village. Nonetheless, a unanimous decision of not setting forest fires has been taken and is strictly abided by.

According to Mohanbhai, so far there has been no occasion when any decision taken by the GS had to be revoked. However, it happens sometimes that a particular decision is taken but no follow up action is taken due to lack of enthusiasm about it. There was an occasion when many people informally expressed dissatisfaction at a decision. An ensuing discussion helped the dissatisfied members arrive at the same conclusion, eventually the decision was accepted by all members.

Character: On an average about 75% of the members attend the GS meetings, with men and women participating in equal numbers. In the past villagers experimented with the system of paying fines for not attending the meetings. This system, however, had to be abandoned since people often have important work to complete and have genuine reasons for not attending the meetings. Also, recovering of fines can become a major responsibility that few want to undertake. In 1999, a decision was taken to declare *polo*⁴ on days when the GS is to be convened, to make it possible for the maximum number of people to participate.

⁴ *Polo* is a traditional system ensuring regular community interaction. The priest declares one day when no villager should engage in any work-related activity. On this day people are expected to visit each other, especially the sick. This is also the day to carry out various community activities including religious ceremonies.

Box 9: A gram sabha meeting

It is a unique experience to be a part of such an "informal" formal meeting. All women attending the meeting were nicely dressed and were accompanied by children. It was amusing to see them trying to concentrate on what was being said while keeping the baby amused or quiet. Others who were unaccompanied by children were a little irritated at being disturbed. Some others were busy talking amongst themselves, not bothered about what was being discussed, only occasionally stopping to listen, especially if something interesting came up. Some seemed to have only come to make their presence felt while others were seriously involved in the discussion. Any time there was a discussion in Gondi everybody participated or listened quietly, but the moment the conversation switched to other languages then those who could not understand busied themselves in their personal conversations. In between serious discussions, jokes were being cracked. Occasionally the yells and cries of the little babies were accompanied by barking of the dogs, halting all proceedings. One little boy was assigned the duty of keeping the dogs away. His diligence and dedication to the job was another constant source of amusement for all. In between, one of the members would try to leave only to be shouted at and made to return. Towards the end of the meeting many women finally left as the cows were returning home and it was time to fetch water from the well.

On the whole the men participated and responded more than the women. However there were some women who were equally vocal. Women take their time to express their views, and do so if continuously coaxed by men. There is great encouragement from the men to make the women speak out. Often jokes are cracked at their silence. When the issue is really important, there is spontaneous participation from all.

For the implementation of all programmes initiated by outsiders, the governmental and non-government agencies have to meet the GS (for which an urgent GS may be called) and discuss their intentions. The village now commands such respect that officials as highly placed as the District Collector also fix prior appointments with the GS, if they want to meet the villagers. It was observed that most discussions, especially about new government schemes or any breach of village rules, are largely initiated by Devaji Topa, the young man who had emerged as a leader during the anti-dam struggle. Once initiated, however, all villagers participate in the discussions.

Sources of funding: The GS now has its own account in a local bank. The accounting system is unique. The account is in the name of two members. Two other people are authorized to withdraw money. The people who withdraw the money cannot spend it. Only some other members are authorised to spend the money. The account of the money spent is maintained by two other members and disclosure of the accounts to the *gram sabha* members is done by people who have not been involved with any of the above. This ensures a large amount of transparency of the accounts.

The money in the corpus fund comes from various sources. So far the villagers have deliberately avoided major external funding, except if it is earmarked by the government for this region. Each member of the GS donates 10% of his or her wages from employment that is generated through the GS. Any money left over from the projects and programmes taken up by the GS also goes into this corpus. In addition, any donations and payments made by visitors go into the fund.

Village Development and Welfare Activities:

1. Scrutinising and deciding on external programmes and schemes, including loans and aids, to be implemented in the village.
2. Bringing schemes to the village to ensure employment throughout the year.
3. Delegating responsibilities to the GS members and sub-institutions and monitoring their progress.
4. Ensuring gender equity in all plans and schemes.
5. Maintaining a corpus fund, through which welfare activities are carried out and loans are given to the villagers at minimal interest rate.
6. Issuing letters of sanction to the outside labourers (see section 6.1)
7. Maintaining the traditional system of *Dhan kosh* (see section 2.5).
8. The GS is the dispute resolution body in the village. Smaller

disputes, which can be resolved at the village level, are resolved in the GS. For disputes that cannot be resolved at the village level, a meeting of elders from 32 surrounding tribal villages is called. So far two villagers have been socially excommunicated by the GS. One person was excommunicated for disobeying the anti-liquor rule and the other for not adhering to any GS rules and not attending any village meetings. Such persons can not participate in any community programme in the village.

9. Collection of the license fee paid to the government by any leaseholders within the village boundaries. The money is then handed over to the concerned government department.
10. Making sure that all loans taken from any source by the villagers are paid back.

Forest Related Decisions and Activities:

1. Carrying out watershed development in the forest.
2. Holding discussions on forest use activities and other issues, such as forest fires and soil erosion from the forests.
3. Formulation of forest protection rules and ensuring adherence to these rules.
4. Selection of representatives for the official VSS.
5. Delegation of responsibilities for forest protection.
6. Handling NTFP extraction and trade related issues.

Mahila Mandal (MM)

Women in the village have played a very important role in the tribal self-rule movement. The struggle against alcoholism was mainly carried out by women. They have also played an important role in the decisions regarding the village forests. Women played an important role at the time of the struggle for *ghotul* in the village. This was the time when men were under the threat of being arrested by the police, so the women came out on the streets and protested against the *ghotul* being dismantled.

Composition: All women in the village (of all ages and classes) are members of the MM. The President of the MM is chosen at

every meeting for that meeting. The secretary is the teacher of the *Angan Badi* (pre-school) in the village (who is not a resident of the village but knows how to read and write).

Functioning: Often the GS meetings also work as MM meetings. Usually the activities to be taken up by the MM (like any other institution in the village) are decided at the GS and women express their opinion at that time. The MM also has its meetings as and when needed. Young married women usually do not come for GS meetings. There are some very active women members who are confident and vocal while the others usually provide support.

Forest Related Activities:

1. Regular monitoring of the forest.
2. Punishment to those who breach forest rules.

Village Development and Welfare Activities:

1. Handling various saving schemes for women in the village and ensuring financial security to women.
2. Ensuring that prohibition of alcohol is followed by all and supporting women who suffer due to husbands who drink or due to any other social problems.
3. Making lodging, boarding and other arrangements for visitors to the village.
4. Managing the stone quarrying in the village. They pay royalty to the government and pay wages to the labourers (see box on following page).
5. The GS in 1998 bought a tractor under a government scheme. Though the maintenance and use of the tractor are handled by the GS, the MM has to participate in any major decisions regarding its use.
6. The MM carries out various revenue generating activities, especially for women, e.g. buying chillies from the villagers and selling it in the market. The profits go into a joint account. This account is then utilised to give credit to needy women or to invest in other community activities. With

Box 10: Quarrying by Mahila Mandal

Quarrying is carried out in the revenue land just outside the village. Contracts are given out by the Revenue Department for quarrying. Till 1997, there was an outside contractor who was paying a royalty of Rs.50 per load of stones to the village apart from the royalty paid to the government. The arrangement with him was that the MM would grant permission to labourers on the basis of which they would be paid wages by the contractor. The royalties both for the village and the government were collected by the MM. The contractor would have to take a permission letter every day from the MM. If he was found without this letter, the local authorities could confiscate the material in his possession.

Subsequently however, quarrying was completely taken over by the MM. They now pay the royalty to the government, wages to the labourers, and handle the sale of the quarried stones to the customers. The stone is transported in the village tractor.

the help of a local NGO from Gadchiroli they also started making and selling incense sticks.

Constraints: Although women are involved in these activities, family and other social responsibilities mean that they are very often either not able to attend all the meetings or have to leave early.

Abhyas Gats (AG)

Composition and functioning: The *Abhyas Gat* (Study circle) is an informal gathering of people, meeting as and when desired for discussions on any issue. These gatherings were used by Mohanbhai and Devaji to initiate discussions on various aspects of village life. Subsequently, many outsiders started visiting the village and the villagers would sit with them and discuss issues of their interest. Outsiders also came with specific points for discussion. Now outsiders are sometimes specially invited if the village wants some specific information or want to debate a certain issue. This interaction has helped the villagers to develop their conversation skills, increase their awareness of the world outside, and obtain important inputs which help them take in-

formed decisions at GS meetings. In turn outsiders have gained insights into village life and the process of village self-rule.

Forest Related Action Research:

There are many examples of participatory research and monitoring in the village, taken up by the members of Study circle, which include villagers as well as outsiders.

1. Pakshi Mitra Mandal (Friends of the Birds), a group of NGOs, has initiated a study on the number of bird species and their habitat with the help of interested villagers. Their group is called the *Pakshi Abhyas Gat* (Study circle on birds). The villagers have been given bird books (translated into Marathi) and have helped the NGOs make a bird inventory.
2. Vrikshmitra, an NGO, has been carrying out a joint research and monitoring exercise with the villagers since 1994. This study is conducted by the *Jungle Abhyas Gat* (Study circle on forests). The study focuses on the impact of NTFP collection on the productivity of the concerned species. The species studied were *Mahua*, *Charoli*, *Tendu* and *Amla*. Results of the study indicated that the fruiting and regeneration of all species under study was on the decline because of constant lopping or felling for collection of NTFP. The issue was discussed at length at the Study circle meeting and the GS subsequently decided to prohibit felling of all fruit trees in the village.
3. The Study circle has also helped create some new and improved forest-based enterprises. Through the Study circle the villagers were introduced to Gopal Palliwal, an entomologist who has worked on methods of extracting honey without destroying the honeycomb. A *Madhumakhi Abhyas Gat* (Honey-bee Study circle) was established and members were given special gear to wear at the time of extraction. Members studied the behavior of the bees and structure of their comb. It was decided that extraction would be done only in the dark when the bees are least active, and that only the part of the comb containing honey would be extracted.

Villagers noticed that the bees were quick to recover the lost honey. As a result, a significant increase in the number of honeycombs in the forest was observed. With the help of a NGO, Dharamitra, from Wardha in Maharashtra, villagers are now marketing this honey as *Ahimsak* (non-violent) honey, generating substantial economic benefit for the members of this Study circle.

4. The village has been able to overcome the problem of encroachments on forest land largely because of discussions initiated by outsiders at the level of the AG. Till about 1992, annual encroachment on forest land was a common phenomenon. After many discussions in the AG villagers decided against encroachments and since then there has only been one case of encroachment in 1998. This case is currently being discussed in the GS. Discussions have also been going on about the negative impacts of fire and hunting on the ecosystem.
5. The most important role that the Study circles have played is giving the villagers the power of information and the consequent ability to assert their rights.

Van Suraksha Samiti (VSS)

(Also see section 6.1)

Composition: Officially, under the JFM resolution, the VSS or the Forest Protection Committee (FPC) needs to include at least one member of each family in the village. The VSS is expected to elect an executive committee, with six village representatives, two NGO representatives (currently Mohan Hirabai Hiralal and Savita Tare of Vrikshamitra), the *sarpanch* of the *panchayat*, and the local *gram sevak*. The local forest guard is the member-secretary.

Functioning: The VSS, according to the official resolution, should meet once a year to discuss the activities implemented and to elect the members of the executive committee. The elected executive committee is expected to meet more often to take quick decisions and execute the decisions. However, the VSS meetings

in the village are held many times in a year to discuss forest-related issues. These meetings are not restricted to the executive committee members, rather all members of the GS as per their convenience are free to participate. The FD officials are informed about these meetings, though they may or may not attend depending on their convenience. When the FD wants to call a meeting it informs the villagers in advance.

The creation of a formal VSS has not affected the functioning of the informal Mendha-Lekha VSS as has happened in some other parts of the country (Das 1997). Official decisions unacceptable to the villagers are not carried out (see section 6.1).

Rules of the VSS:

- No felling of live trees in the forest, in particular, *Tendu*, *Charoli*, *Malua* and other fruit trees.
- No lopping of *Tendu* tree.
- No encroachment on forest land without the GS's permission.
- No *nrb* (cutting small branches and trees in the vicinity of farms, to burn before planting vegetables and paddy).
- No *padka* (burning the wood and using the ash to grow cucumbers and other vegetables).
- Permission from the VSS to be sought before extracting fuelwood or bamboo from the forest.

According to the villagers, these rules are largely followed in the village, though they are occasionally broken when there is a dire need for some forest resource. The extraction of resources from the forest is restricted. Sometimes, especially for the larger families, the specified amount is not sufficient. Under these circumstances people use some more resources on the quiet. Sometimes activities like *nrb* are also carried out secretly. However, the frequency of these incidents is now much lower than it was before the VSS rules were framed. Restriction on lopping or felling of green wood is strictly followed because

people now understand the adverse impacts of these activities.

Relationship with the FD: The villagers have a cordial relationship with most government officers in the area. When a new officer arrives it takes time for him to understand the different power relationship that he/she is going to have with this village. However an extended interaction with the villagers helps change the attitudes of most officers.

The local forest officers in the area appreciate the forest protection and conservation activities of the village. They admire the fact that the village has been successful in controlling illegal activities in the forests, including the encroachment of forest areas. The FD officials, however, seemed disgruntled at villagers' decision not to clear the forest of "unwanted" species (see section 6.1). They also feel that while the villagers carry out the protection activities very well there is little inclination towards forest development and improvement. Other NGOs associated with the village believe that a more proactive role from the FD could encourage the process of self determination and forest management further. So far there is little participation of the villagers in actual planning processes (e.g. in the JFM micro-plan). Their participation is only in the form of consent to or rejection of what has already been planned (see section 6.1).

Activities:

1. Daily forest vigilance, carried out equally by men and women members. Offenders are brought back to the village and fined.
2. Stopping outsiders from commercial extraction, e.g. the paper industry (see section 6.1 for details).
3. Initiation and implementation of JFM in the village (see section 6.1). This includes decisions about the time of bamboo extraction and plantation, methods to be employed and payments to be made.
4. Appointing an official firewatcher in the village.

Other achievements of the village institutions

1. The villagers have constructed a *van talav* (forest tank) under the Joint Forest Management Scheme, which retains water till March every year. According to the villagers the *talav* has been useful in three important ways; it has recharged the ground water in the agricultural fields; controlled water and soil run-off in the monsoons; and is providing revenue to the village through fish harvesting. The GS started seeding the *talav* with fish fingerlings since 1997. Fingerlings worth Rs. 6000 were bought from the market for the purpose. Although many were washed out in the late monsoon that followed, yet the GS earned some profit from it. Most of the fish is usually sold in the village itself, only the surplus is sold in the local market. The species introduced were *Rohu*, *Catla*, Silver carp, *Waghu*, Grass carp, etc. According to the villagers, exotic species were introduced because they grow much faster and sell better in the market. In 1997 the GS needed labour to deepen the tank. It was decided that each person in the village would be given a certain amount of fish from the harvest in lieu of which he or she would have to provide an equivalent amount of labour. The deepening work was completed before the next monsoon.
2. The village is now visited by a large number of people from outside, including members of the Study circle, students, government officials, NGO representatives, interested individuals, and others. It is the responsibility of the MM to make arrangements for visitors. The village now has a simple guest house where visitors can stay for Rs 50 per person per day (including three meals). One of the villagers has been employed as a cook in the guest house.
3. A few years ago the GS discovered that the school teacher was not teaching properly in the village primary school. They demanded that at least one tribal teacher be appointed in the school to explain difficult lessons to the children in their own language. They also banned teachers from consuming alcohol in the village or coming drunk to the school (which was earlier a common practice).



Virek Gaur-Became

Bird's eye view of the expanse of forest protected by the villagers



Aashish Kothari

A few centuries-old graveyard in the forests of Mendha-Lekha



Vivek Gaur-Bhonsale

A mygalomorph among many other species of fauna and flora found in Mendha-Lekha



Vivek Gaur-Bhonsale

A typical house in Mendha-Lekha



Vivek Gaur-Bhonsale

Inauguration of bamboo extraction in 1998 under Joint Forest Management



Vivek Gaur-Bhonsale

Subsistence agriculture is one of the mainstays of the local people



Vivek Gupta-Bhaurane

People are heavily dependent on the surrounding forests for subsistence



Vivek Gupta-Bhaurane

Now under control, rampant encroachment of forest-land was a serious problem till mid-nineties



Vivek Gupta-Bhaurane

Usa mamana, festival to worship all agricultural implements



Vivek Gupta-Bhaurane

Fishing in the *win talav* is a community activity to generate funds for the *gram sabha*



Ashish Kulkarni

Villagers identifying various birds and animals found in the forests of Mendha-Lekha



Vivek Vasan-Bhosurkar

A typical gram sabha meeting



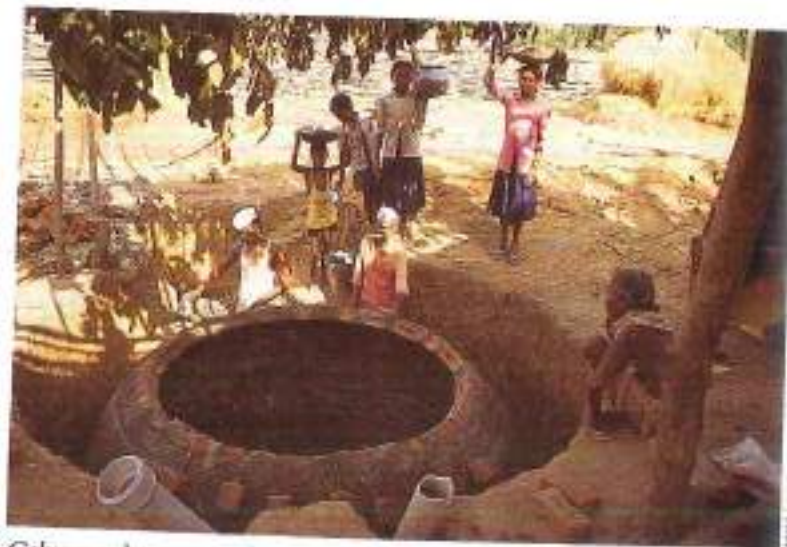
Ashish Kulkarni

Women in the gram sabha meeting



Vivek Vasan-Bhosurkar

An urgent van suaksha samiti meeting



Gobar gas plants are under construction or in use in most households in the village

4. For the first time in the history of the village, in 1996, a funding agency (WOTAR) directly funded the GS to carry out watershed development activities in the village. Before that all funding was through the NGO, Vrikshmitra. The funds were given for 17 irrigation tanks, under the condition that the same number of tanks would be constructed by the villagers on their own. Now most villagers have irrigation tanks in their fields.
5. The villagers have also constructed a large community well (see section 2.8). There have been discussions to arrive at a system of equitable sharing of water. No final decision had been taken till the end of the year 2000.
6. Around the years 1991–92, there were serious discussions in the village about the declining fertility of the land and increasing soil erosion in the forests. Villagers also realised that because of increased number of forest fires there is little grass and other vegetation to bind the soil and water during the heavy rains in the monsoons. In order to check this runoff of water villagers, with the help of the donor agency OXFAM, constructed over 1000 small temporary bunds on the major forest streams. After almost a decade now these bunds need repairs, which has not been done because of lack of funds.
7. In order to avoid exploitation of villagers by outsiders, the villagers have a rule that as far as possible there should be no individual interaction with outside agencies. For example, government agencies, government officials, loan schemes, etc. should not be aimed at individual beneficiaries in the village. Instead the schemes/programmes should be discussed in the village and the villagers should choose the beneficiaries on their own. Under this rule the GS scrutinises any loans, aid programmes or tribal benefit schemes coming to the village, and the appointed person applies on behalf of the entire village. The recovery of the loan from individual beneficiaries is also the responsibility of the GS.
8. The village rule that all government and non-government schemes to be implemented in the village must be discussed

by the concerned agencies at the GS. This has contributed to a much greater coordination among the line agencies.

Box 11: Village empowerment leads to inter-agency coordination

Just before the end of the financial year 1996-97, different line agencies (Zilla Parishad, Panchayat Office and Forest Department) approached the villagers with proposals for constructing a few go-bar gas plants, bathrooms and toilets under different schemes (e.g. Employment Guarantee Scheme, Joint Forest Management, etc.). Under each agency there were funds for only a few families for one or the other of the above mentioned facilities. After a few quick discussions between villagers and some outside members of the Study circle, invitations were sent to the concerned officers from each department for a joint meeting in the village. A GS was convened for the purpose and the government representatives were requested to put down in writing (on a blackboard) exactly how much money was available under each department for these activities in the village. All the line agencies were very cooperative and encouraged by this initiative of the village. The total amount was calculated and it was realised that there was enough money to provide all earmarked facilities to each family in the village in different phases. A decision was finally taken that all agencies would pool their resources to help all villagers receive the benefit of the above schemes. Each department subsequently contributed in different ways. The forest department provided material for construction, while the Panchayat Samiti provided money for labour. The villagers later decided not to use the government contractor and engineers (because plants made by them in the past in the neighbouring villages had failed). They approached a group in Wardha in Maharashtra, which had developed a cheaper and more efficient model of a biogas plant. The masons from this group came and trained the local masons (from Mendha-Lekha and surrounding villages). Local villagers and others from the surrounding villages were employed by the GS to accomplish the task. The money for salaries to the labourers was deposited in the GS account. At the time of going to press most households had completed their bio-gas units and others were in the process of completion.

9. The GS realised that youth in the village were increasingly becoming alienated from the village and village life. Many of these youth study in residential schools especially meant for tribal children outside the village. The GS organised a

- summer camp for all children during summer holidays and acquainted them with the process of village self-rule. The GS has also decided to send the village youth for various training programmes, so that employment opportunities can be generated within the village. Some youth have been sent for training in marketing techniques. It is expected that these boys would help the GS market its forest produce efficiently.
10. The GS has many times fought for fair rates for *Tendu patta* harvested by the villagers. In 1998, when the contractor did not agree to the villagers' demand of increased rates, the villagers confiscated the last consignment before the contractor could collect it. The case reached the police. Villagers requested the police to stay out of the matter. The police respected the desire of the villagers. The contractor had to finally bow down and give in to the demands of the villagers. To avoid such incidents in future the GS is currently discussing the possibilities of direct marketing of NTFP by the villagers, eliminating the contractor system altogether.
11. Local banks have started various easy saving schemes in the village. These are implemented by the formation of groups of villagers holding a common bank account. These groups are called the *Bachat Gats* (BG). There are four BGs in the village, two exclusively for men and two for women, open to all villagers. Each group has about ten members, which includes one president and one secretary. The president and secretary are responsible for depositing and withdrawing the money from the bank. The bank creates a joint account in the name of all the members of the BG. Each member has to deposit Rs.5 per month. Against this joint account, any member of the BG can seek credit at a very low interest rate. Sometimes the members of the group carry out certain joint revenue earning activities, e.g. seeding a well with fingerlings. The revenue from such activities goes to the joint account. If members wish to dissolve the account, the amount is divided equally among all the members. There are many people in the village who are still not very comfortable with the idea and are not members of the BG. Yet

in times of need, the BG does help out non-members with low interest credits.

6.3 Role of Women and Youth

Women in the Village

Though in tribal societies the position of women is comparatively better than in non-tribal societies, it is still not equal to that of men. In Mendha-Lekha too, women were traditionally not expected to participate in village meetings and discussions. The situation is now a little different. After a long struggle women have been successful in achieving opportunities for equal participation in the decision-making process. Women are vocal and participate in most activities confidently. Yet because of many other social responsibilities they often do not participate in village meetings unless their presence is absolutely essential or the matter is of direct significance to them. Women and men have extensive knowledge of the forests and its resources. Both men and women participate in forest protection activities equally. The women and men also participate in the joint research activities in equal numbers and with the same enthusiasm.

Youth in the Village

In traditional Gond society younger members of the society were not expected to speak up in the presence of older members. In Mendha-Lekha, efforts have been made to encourage the youth to participate in village organisation activities but the traditionally in-built hesitation is hard to overcome. For older people the lack of participation of youth in the process of village self-rule is upsetting. There is an unspoken fear among the older members of the GS that after them there will be no one to carry forward the tremendous efforts made towards achieving the current status of empowerment and respectability. Many young people prefer moving outside the village for jobs, even though the GS has tried to create employment opportunities within the village. The sense of association and pride that is observed among the older people towards the achievements of the village

is not apparent among most young people. It was discouraging for the older people that no educated young person came forward to take on the job of the village office administrator in the beginning. An encouraging exception to this trend is the participation of some young members in the Study circles that help in revenue generation such as the Honey-bee Study circle and forest Study circle. It appeared to the research team that the higher the youth's level of formal education, the more alienated they became from the village's social and conservation processes.

6.4 Monitoring and Evaluation

An important facet of the institutional functioning in the village is its transparency and democracy, which also acts as a constant monitoring and evaluation system. There are regular meetings on all relevant issues keeping all members in the know-how. As has been discussed earlier the policy of consensus decision-making and the freedom to reopen the issue for discussion leaves little scope for dissatisfaction. Details of all monetary transactions, visits by outsiders, and visits to places or meetings outside the village by any villager are also discussed regularly. All villagers are answerable to the GS, and the GS can question anyone, thus acting as a monitoring body in the village.

Ecological monitoring at village level, however, does not take place. Villagers have taken various steps to ensure what they believe is the sustainable management of forest resources. However, there is no in-built process to evaluate whether their actions are ecologically sustainable. People do have their own impressions about the improved quality of forests since the forest protection activities started. Hunting, as stated earlier, is an important part of the village culture, and villagers claim that local hunting does not affect the population of animals. There is no study either within the village or by any outsiders to evaluate the impact of this and other forest use activities on the long-term viability and sustainability of the forest and its resources.

The villagers, along with a few researchers, are now planning to establish a research station in the village. This will include lodging and boarding arrangements for outside research-

ers and storage space for equipment. The local villagers will assist the researchers both in fieldwork and data analysis.

6.5 Leadership

In this entire initiative of self-rule and community management of forest resources, Devaji has played a very critical role. Devaji comes from an economically poor and formerly landless family. Although he has not had much formal education, over the years he has educated himself.

However, Devaji has to devote a great deal of time and effort to playing the role of a leader. This also means, to a certain extent, ignoring his responsibility towards his family. Despite many discussions initiated by Mohanbhai, there is little desire on the part of most villagers to either support Devaji financially or with farm work. However, if Devaji receives payment through any outside project, it fuels suspicions that he benefits more from the collective effort of the village. Either way, it means many sacrifices on his part.

Box 12: Devaji, a natural leader

After participating in the *Jungle Bachao Mannu Bachao* movement Devaji Topa came into contact with many educated and experienced people from outside. Travel to new areas and interaction with outsiders introduced him to new ideas and his own thinking gave new dimensions to many of these ideas. Over the years he naturally slipped into the role of a leader in the village. Without being forceful or dominating, through patient conversations, he gradually started introducing his thoughts and ideas to his fellow villagers. He is now recognised as a village leader in official and unofficial circles and is invited to many fora for discussions. The villagers look up to him for suggestions and advice. Many discussions in the village are initiated by him and he plays an important role in implementing many of the decisions.

This recognition, however, has not changed his lifestyle or his attitude. He neither claims to be a leader nor takes the credit for the village initiative. In his opinion the initiative is successful because all the villagers have struggled to make it a success. In the village level meetings he never interferes or forces his ideas on others. He is mostly quiet and expresses his views only when absolutely essential. When

Box continued on following page

required, he does give direction to the discussions. The decisions taken by the village are always according to consensus, irrespective of whether Devaji personally agrees with it or not. Often villagers indirectly blame him if decisions taken at the GS are not going as anticipated. For example, if the villagers have decided to stand against any official decision for which they have to bear a brunt of the concerned department, the immediate reaction, even though for a short while, is to blame Devaji for having taken the decision. However he does not feel perturbed by any statements made against him. "I feel happy when someone criticises me, it gives me an opportunity to reflect on my own character and learn a little more about myself".

Devaji's views on forest officers

Devaji expressed surprise at the attitudes and functioning of some of the forest officers. According to him a good forest officer with support from the people can achieve a great deal, both for people and forests. If only forest officials could behave as guides and friends instead of colonial rulers. According to Devaji a good forest officer needs to be objective, stern and yet sensitive to people's needs. This does not mean, however, that he has to agree with the villagers all the time. Local people and societies have their own limitations, which need to be understood and taken into account. Villagers can also be wrong and often because of their greater exposure to the world outside, forest officials can put issues in a better perspective than local people can. An officer should be firm enough, without causing humiliation, to make matters clear to local people. A good forest officer as a friend is a must for a successful people's management of the forests.

Devaji's views on self-rule

On several occasions when the villagers have behaved in an irresponsible way (e.g. the encroachment in 1998), Devaji has expressed his views on self-rule. "Self-rule does not mean freedom to do what one wants, it actually means being able to act responsibly, as an individual and as a society. Self-rule also does not mean cutting ourselves off from the larger society. It means being able to assert one's rights while recognising one's role and responsibility in the larger society".

7. Social and Ecological Impact of the Initiative

7.1 Ecological Impacts

In order to assess the impacts of the community initiative on the village ecosystems, the study team carried out a short ecological assessment in the village and the surrounding forest. This was done on the basis of both ecological techniques and people's perceptions, as described below.

7.1a Ecological Methodology, Results and Discussion

To get a clearer picture of the village layout and land use, transects were laid in the village and the surrounding forests with the help of some villagers. Many trips to the forest were also made to get a sense of the type of forests, micro-ecosystems, physical condition of the forest, and so on. We also visited the forest with the villagers when they were going for their own resource collection to get an idea about the methods of resource collection, restraints followed and distances covered. Five major Landscape Elements (LSE) were identified (see section 3.1). During these trips and discussions with the villagers a basic inventory of flora and fauna was made.

Subsequent to having identified LSEs, ecological transects were laid in each of the LSEs (except in the forests on the upper slopes of the hills) to assess the vegetation structures and carry out basic faunal surveys.

Discussion:

(Please see Annexures C and D for physical transect and detailed analysis of ecological transects)
The analysis of data obtained from the ecological transects (as shown in Annexure C), indicates that there is a marked difference in the species dominance in the understory (regeneration) and that of the climax forest. The significance of this cannot be

concluded at this stage with the limited amount of data.

In the agricultural areas *Mahua* is the dominant species among trees, as it is useful and hence not felled by the farmers. Usually these trees are large in size as indicated by the basal area (total area of a sample quadrat under tree cover) (see annexure C). In this LSE, the diversity of species is low and there is no regeneration of any tree species. Large number of birds perch on the trees found here and these trees function as feeding grounds for frugivorous bats.

In the recent agricultural areas (mostly encroachments) both the density of vegetation (total number of plants in a sample quadrat) and the basal area is low. This is the most disturbed LSE of all, and if the practice of encroachment continues, it could seriously threaten the biological diversity in the forest. This LSE also shows signs of maximum damage to the standing trees, such as girdling, for expansion of the agricultural area. The fields in this area, both encroached and permanent, being away from the main settlement and closer to the forests, are most frequently visited by wild boar and face maximum crop damage.

Observations in the degraded forests closer to the village show that, inspite of a higher degree of exploitation, the level of regeneration here is fairly high (as indicated by regenerating saplings in the girth range of 5-29 cm). The reasons for this need to be further ascertained. In effect, this LSE has the highest density of saplings as compared to any other LSE. The higher number of saplings could be attributed to the opened up canopy allowing sunlight through and giving an opportunity to the saplings to come up. However, not all of these saplings are of species dominating the less disturbed forests. For example species like *Calyptopteris* (a liana, among the dominating saplings) usually dominate the degraded dry deciduous forests. Some of these saplings are also the now coppicing plants which have been damaged in the past. The absence of bamboo among the saplings in this zone indicates that either the extent of grazing or that of fire is high here. Bamboo is a favoured grazing species.

The *tekad* (hill) areas naturally have a much lower tree density on account of shallow and poor soil and sub-soil conditions.

The bamboo forests closer to the village (Suipal gudra to Edjher; see map for location) have a much lower basal area as compared to the bamboo forests away from the village (Jaganekin). This is because the use of bamboo clumps and bamboo shoots by the villagers is much higher here as compared to the patches further away. These patches also include the areas where bamboo has been extracted for the last two years under the JFM scheme. Plenty of signs of wild animals can be seen here. There are also some natural perennial sources of water in this area.

In the transect at Jaganekin (see map for location) and beyond (bamboo dominated forests away from the village), the tree density is lower compared to the bamboo forests closer to the village. However, the basal area is the highest here among all LSEs studied so far. This is because of the mature larger trees, which have a much larger girth. Here trees are rarely felled because of the distance from the village. The presence of large, commercially valuable species, like rosewood and teak, is an indication of the lack of a commercial outlook towards the forests among the villagers, as well as proof of protection from outside exploitation. This area is not much used by the villagers for resource extraction, except for grazing and hunting. In this area too there are a few natural perennial sources of water and there are plenty of signs of wild animals. Nests of the endangered Indian giant squirrel were also noticed in this area and in the hills beyond.

The data indicates that the forests closer to the village (1 to 1.5 km radius of the village) show more signs of disturbance as compared to those further away from the village, and that the extent of disturbance increases as one moves closer to the village. It is difficult to conclude anything about the trend of disturbance (i.e. whether it is increasing or decreasing over the years) in the absence of any baseline data. However smaller basal area with good regeneration in most of the degraded forest indicates that there was a much higher level of disturbance in the past which has now been controlled to a certain extent. This disturbance could have opened up the canopy for more species

of disturbed forest to come up, though subsequent protection could also have allowed the species to regenerate and grow. In addition, many open areas that were observed in the forest also showed signs of heavy disturbance in the past. These areas have probably not been able to regenerate because of the continued pressure from village resource use, fires and soil erosion.

In all the LSEs, except the agricultural areas, there were abundant signs of wild animals. As has been stated earlier (section 3.1), a total of 125 species of plants, 25 of mammals, 82 of birds and 20 of reptiles have been recorded so far. During the course of this study it was very clear that the villagers have taken many steps towards the conservation and protection of the forest. However, there are still some counter trends to that, such as unregulated hunting (see section 3.2). With the current level of study and data collected, it is very difficult to conclude anything about the increasing or decreasing trends of wild animal population in the area. We explored the possibility of comparing the Mendha-Lekha flora and fauna to that in similar ecological conditions. However, though there are two legally protected areas in Gadchiroli, their history of land use, forest type, soil conditions, etc. are very different from those of Mendha-Lekha forests. Therefore a comparison would not have been appropriate.

In the absence of any baseline data for comparison with other forests in Gadchiroli where there are no disturbing factors, it is difficult to come to any conclusion on the improving or degrading quality of Mendha-Lekha forests. Further detailed studies are needed to assess the impact of forest use activities, including hunting, on the population of wild fauna or to establish trends for changing vegetation structure (if any) because of the forest use activities of the villagers. The present study could then act as a baseline data for any such subsequent study⁵.

⁵ The raw data for the same is available with the authors.

7.1b Ecological Impact of the Initiative—Community's Perception and Study Team's Impressions

According to the villagers, the quality of the forests is much better now than it was ever before. They state that it had especially deteriorated after the government take-over of forests in the 1950s, and started improving again after the village protection started.

In the *zamindari* times, shifting cultivation was practiced in certain parts of the forest. These sites had to be abandoned after the forests were handed over to the FD. The forest has now densely regenerated on these sites. Between 1950 and the late 1980s a number of state sponsored activities were initiated in these forests (see section 6.1). These activities, such as the indiscriminate felling by charcoal contractors and activities of the paper mill, along with the increased human and cattle population within the village and in the surrounding areas, had an impact on the quality of the forest. After the village initiative towards forest protection in the late 1980s started, all the outside commercial activities in the forest were stopped. Till 1997, when the FD resumed bamboo extraction, there had been no commercial extraction from these forests (except NTFP) for over a decade. Unregulated use by the adjoining villagers and the villagers of Mendha-Lekha has also been controlled to a great extent during this time. This period could thus have provided a good opportunity to the forest to recover.

Villagers claim that the quality of the forests in general has improved after the village protection activities started, but they qualify this by saying that availability of certain resources, especially closer to the village, has gone down, including fuelwood and some palatable grass species. The good grazing patches in the forests traditionally used by the cattle, according to the villagers, are slowly degrading. They attribute this to the increased cattle population within the village and in the adjoining areas. The availability of wild animals, especially close to the village, has also reduced in recent times. People hold increased human population and forestry operations as factors responsible for this decrease. It is possible that since in the times of the *zamindar*,

people had shifting cultivation sites in the forests, they did not need to expand their agricultural fields close to the village. In addition, the human population of the village was only about 191 till 1973 and has now increased to 324. Though the population increase is not very high, it has created a need for a larger area to be under agriculture thus, leading to encroachment of forest areas for agricultural expansion. The forests have thus receded further away, consequently a decrease in forest resources in the vicinity. In addition, since the extraction of resources is higher in the forests closer to the village, it is possible that the forests in the vicinity of the village are now more degraded as compared to the pre-1950 era.

An important contributing factor for the present quality of the forests could be the fact that Mendha-Lekha has a large area of forest within its boundaries as compared to many other villages in Gadchiroli. On the other hand the population of the village is still relatively low. A cursory visit to some adjoining villages with a reasonably large forest within their boundaries (but not as large as Mendha-Lekha and with no specific protection measures), reveals that the quality of forests closer to the village is not much different from that of Mendha-Lekha. However, quality of the forests in Mendha-Lekha improves as the distance from the village increases. This could be attributed to the absence of commercial forestry operations and control over the activities of outside villagers in the forests of Mendha-Lekha as against the forests of other villages, where these activities are continuing. The signs of wild animals in the forests of Mendha-Lekha are also abundant as compared to some other nearby forests. There are also villages in the adjoining area where the forests have completely degraded and villagers now have to depend on the forests of Mendha-Lekha and other villages where forests remain.

7.1c Questions for Future Exploration

Many questions remain unanswered even after this study. Some of the ecological questions that need detailed exploration include:

- Impact of the CBC initiative on the quality of the forests, especially the decision of not felling green wood in particular fruit trees like *Tendu*, *Mahua*, *charoli* and others.
- Impact of existing human activities such as resource extraction, hunting, bamboo extraction, fires (and their stoppage) and others on the flora and fauna in the forest.
- Quantitative assessment of plant and animal populations in the forest.
- Comparison between the areas where (outside Mendha) bamboo extraction is being carried out by the villagers and the FD under a JFM arrangement, and where the bamboo is being extracted by paper industries.
- Difference between the ecological quality of Mendha-Lekha forests and other surrounding areas where unregulated extraction of the resources by the local people as well as commercial forestry operations are being carried out.

7.2 Social Impacts

Following are some important social impacts of the village initiative towards self-rule and forest protection:

1. *Confidence and capacity building:* Villagers have realized that they can assert their rights over natural resources or developmental processes only if they have the willingness and capacity to take on the responsibility of managing these resources and processes. To gain this capacity they have to overcome their weaknesses and acquire adequate knowledge. Study circle interactions have given the villagers this confidence. In addition, visits to the village by an overwhelming number of outsiders to see the village initiative is seen as an appreciation of their efforts and an encouragement for the future.
2. *Achieving empowerment:* Villagers have strived and achieved the capacity and confidence to assert their rights and have reached a stage where the village is respected even in official circles. Today all government and non-government people come to the village, sit with them and converse with them on equal grounds and often in the villagers' language. Villagers take decisions about their village and surrounding for-

ests, which are largely accepted by all concerned within or outside of the community. This empowerment has enabled the villagers to achieve inter-agency coordination among all line agencies functional in their area. Through this coordination they have managed to pool together the segregated resources of all these agencies to carry out a more meaningful development for the village.

3. *Winning friends:* Through a polite and non-violent strategy they have established strong and good relationships with many government officials and non-government agencies and individuals, who in turn have helped them at many crucial points. Villagers have now established such a reputation that most line agencies, local banks and NGOs prefer to implement their rural development schemes in Mendha-Lekha, as they are confident of being successful.
4. *Establishing informal yet strong institutional bodies:* The village has initiated a democratic and transparent process of informed decision-making and implementation, which leaves little space for misunderstandings and fragmentation of the community effort.
5. *Ensuring equity:* They have ensured equal participation for all in the process of decision-making, including for women and the poor.
6. *Inspiration for others:* The village effort has set an example for many surrounding villages, which have lower economic status. Some of these villages have forests in the last stages of degradation, which has affected their livelihoods. Mendha-Lekha's self-reliance and better quality of life has sent a positive message to these villages and many villages now wish to work towards the same. Some have even begun to do so.
7. *Managing financial transactions with confidence:* The GS has its own bank account and manages it well.
8. *Livelihood security to all:* The GS tries to ensure basic economic security to all villagers through access to forest resources or other employment opportunities. This also includes opportunities to earn their livelihoods through forest-based industry like honey and other NTFP collection.

8. Future Directions for the Village Initiative

1. Ecological constraints and need for further studies: Despite concerns expressed by the villagers about the decreasing wild animal populations, hunting in the village continues and is still culturally deeply entrenched in the society. Efforts towards control of hunting will take more intense and culturally sensitive discussions, over a longer time period. Villagers' own personal use of the resources continues to be to some extent wasteful. In addition, there have been discussions in the village about the declining availability of grass in the forests. Villagers believe the reason is an increased cattle population. Yet there are no restrictions or regulatory measures on grazing in the village. Cattle from the adjoining villages are also allowed to come to the forests unregulated. (See also section 7.1c).

2. Management constraints and role of a forest officer: There have been discussions about a village forest management plan, largely initiated by Mohanbhai and Devaji, but villagers have shown little interest so far. This could be because of lack of time, or lack of conviction or awareness about its implications. In addition, people are often very busy in their livelihood activities. Also given their limited experience it's not always possible for them to envisage the long term benefits of an effort like developing a management plan on their own. Presence of a more proactive and people-sensitive official could help the villagers develop these plans for their forests. Unfortunately, though the present forest staff is very helpful and sympathetic they are not proactive in initiating programmes which will encourage people's involvement. For example a culturally sensitive officer could initiate discussions on hunting and grazing issues in the village and help villagers implement the jointly taken decisions effectively. They could help them solve the conflict situation with the adjoining villagers, take a lead from the *jungle abhyas gat*

and encourage a system of joint ecological evaluation and monitoring, and so on.

On the contrary various government departments still try to encourage schemes such as dairy, goat rearing, etc. which have little relevance in tribal life. Tribals have a greater association with the forests, therefore forest-based activities need to be encouraged.

3. Legal and policy constraints: There is an appreciation in all government and non-governmental spheres of the village initiative. Yet there does not exist any law flexible enough to accommodate these efforts or institutions into a legal system of governance. This is also exemplified by the JFM initiative in the village (see section 6.1 and box 8). Thus the sustainability of the initiative heavily depends upon the various informal support structures, such as, outside individuals, sympathetic officers, and dedicated village members who are interested in voluntary activities. Major changes in any of these could affect the character of the initiative. For the long-term protection of these forests from internal and external commercial forces, the villagers could consider demanding that it be declared a protected area (i.e. national park or sanctuary, under the Wild Life (Protection) Act 1972). There however, as yet does not exist any provision in this Act, where the control of the PA could remain with the conserving communities and where they are able to meet their subsistence requirements while protecting the area. Currently the Act is under revision and there is a proposal for two new categories, Community Reserves and Conservation Reserves. Both these categories envisage an active participation of local communities. Once accepted, the former could be a good option for Mendha-Lekha.

The proposed Biodiversity Bill of India also has a provision for the declaration of heritage sites, which could be useful for Mendha-Lekha once the Bill is enacted.

In the Forest Act of 1927, along with the categories RF and PF (which are government owned and managed), there exists a third lesser-known and highly under-utilised category of Vil-

lage Forests (VF). In this category the forests are owned by the state but the management powers rest with the surrounding local community. Mendha-Lekha presents itself as an excellent example to be categorized as a Village Forest, and this option needs to be seriously explored.

Box 13: Conversion of *nistar* forests to Reserved Forests

Villagers in Mendha-Lekha feel that conversion of their *nistar* forests to RFs was a betrayal by the government authorities, in particular the FD. They consider this action inconsiderate and insensitive because the RF was declared at the time when village efforts at conservation were already well known and widely appreciated even in the official circles. From the official point of view forest reservation in Mendha-Lekha has followed the specified official process. If people were not consulted before reserving these forests, it is because there is no provision built into the forest reservation process for such consultation. As far as the forest officials are concerned, therefore, they have only followed the rules by the book and in their opinion have not carried out any "clandestine" activity. However, from the point of view of the local villagers, this was seen as a betrayal on the part of the local officers who were well aware of the villagers' conviction about, and efforts at forest conservation. Local forest officers themselves claim that for the last two decades villagers have been protecting the forest on their own, and that the FD does not have to put any extra effort into protection measures (Rao pers. comm. 1998). The researchers and NGOs associated with the village feel that the FD could have set a positive example and endorsed the forest protection activities of the villagers by opting for a more decentralised system. The provisions in the existing law such as the Village Forests (a category under the IFA 1927 that gives forest management powers to the local villagers but has never been used till date) could have been explored.

The most important legal provision for Mendha-Lekha is the Panchayat (Extension to Scheduled Areas) Act, 1996. This Act (a follow up to the 73rd Constitutional Amendment Act of 1993), gives more decision-making and implementing powers to the village level institutions, especially in tribal areas. It also confers the ownership rights to a specified list of NTFP to the local communities. There are many useful provisions in the Act,

which can be helpful for initiatives like Mendha-Lekha. However the Act is fairly new and there has been little work towards its implementation at the ground level, therefore the actual difference that this Act can make is yet to be seen. In addition, there are many issues which remain unclear and not understood. For example, it is unclear as yet whether the Act provides control over the resources and development plans of government-owned lands (including most of Mendha-Lekha forests) to the local communities, or whether the GS as in Mendha-Lekha, is recognised as the basic administration institution at the village level.

4. Role of leadership and sustainability of the effort: Considering that a large amount of the villagers' time must go into earning a livelihood, it is sometimes difficult to sustain the fervour for the forest protection activities, especially if there are no immediate threats. In circumstances such as these, the role played by a local leader or an outsider, as a constant source of motivation is absolutely essential. In Mendha-Lekha this role is being played by Devaji with support from Mohanbhai.

There is always a small number of people who neither participate nor show enthusiasm towards the activities of GS. Envy and jealousy are normal human attributes in any society. Yet such dissatisfactions are rarely brought up publicly. This is mainly because all processes in the village are transparent and there is little evidence to lead to any suspicion. Thus transparent and democratic functioning ensures a more sustainable initiative.

Another problem could be that of a second line of leadership in the village. There has so far been little participation by the youth in the process. Devaji has been an effective leader so far, but no one else has as yet emerged to be able to carry on the activities after him. Older people see it as their failure in not being able to involve the youth in the process. Efforts are now being made to rectify this (see section 6.3). A greater focus on village life and including local issues as an important part of the formal education syllabus may improve the situation.

5. Attitude of local government officials: Considering the amount that the village has achieved through its initiatives, it is practically impossible not to acknowledge its successes. There are many government officials both at local and higher levels who genuinely appreciate the initiative of the villagers. However, there are also officers, who do not say anything against the villagers but appear dissatisfied with the village motto of self-rule. A strong sense of distrust is often quite obvious in conversations with them. A very good example of that is the fact that at one level the forest officials acknowledge the effort of the villagers towards forest protection, yet the same officials are reluctant to involve the villagers in the forest micro-planning process from the beginning. This attitude is difficult to understand but probably stems from the bureaucracy's continuation of the colonial attitude of distrust towards local communities and expecting subservience from them. Making socially sensitive issues an important part of bureaucratic training both at lower and higher levels may help the situation. It may also be useful to bring government officials at all levels to villages like Mendha-Lekha for mutual learning programmes.

It needs to be understood here that a community initiative, whether at natural resource conservation or for any other purpose, is a positive social process. Social processes are time consuming and complicated. There may exist many contradictions difficult to understand for an outsider, especially if the interactions are short. For example in this village despite the efforts made by Mohanbhai and Devaji, people often do not take any initiative. Despite taking extensive efforts at protecting the forests from outsiders, the villagers often themselves indulge in hunting or occasional wasteful extraction. Can national policies relating to natural resources be built around such a pace and such contradictions? If yes, how? If the pace needs to be changed what are the factors that need urgent attention? Should a greater role as an extension officer by the government agencies be considered? Villagers often do not seem to have the time or the resources to carry the initiative out on their own, or to sustain it beyond a point. Situations are often more complex than may appear here. Yet as

is clear from Mendha-Lekha example, communities have also resolved important issues, such as encroachments, commercial exploitation, etc. Therefore it is important to stress, the fact that this effort despite its limitations is viewed as a positive process. *This is not an externally driven project with limited objectives, viewed in isolation of the social dynamics and other village issues as well as constrained by limitation of time. Therefore any obstacles faced by a process like this should not be viewed as failures but as constraints, which can be solved within the concerned social system. Only this may take longer than normal "project or programme cycles", yet may prove more sustainable in the long run.*

9. Emerging Lessons for Natural Resource Conservation

An initiative that emerged in a small tribal village with more than half the population "illiterate" has many lessons to draw from, especially for natural resource management in India. This is more so in the light of the conventional conservation practices followed in the country, which have so far largely been top-down in their approach. This has been one of the important reasons why communities have over the years felt more and more alienated from surrounding natural resources. This has led, for instance, to serious human-wildlife conflicts in and around areas set aside for wildlife conservation in the country (Kothari et al. 1989; Kothari et al. 1996; Dang 1991). This conflict situation has also led to a serious opposition to protected areas by the affected communities, leading to a decline in political support. Natural resource, wildlife, and biodiversity conservation policies and programmes would do well to heed the following lessons from Mendha-Lekha.

1. Site-specific, decentralised management: One major difference between community initiatives and official efforts at conservation so far has been that, the former are decentralised, site specific and varied in their objectives and approaches. The government efforts on the other hand have largely been centralised, top-down and working under a uniform policy framework and guidelines, which have not taken site peculiarities into account. One way of building in greater flexibility into the PA system would be to expand the number of categories of protected or conservation areas, to include a range of different ecological and socio-economic situations. The site-specific planning strategy for these areas (specially the ones where human settlements exist) could be then done based on participatory research like that of the Study circles in Mendha-Lekha. To this end some conservationists have suggested addition of at least four new cat-

egories, including Community Reserves, based on different objectives and management regimes (Bhatt and Kothari 1997). Such a system would be able to accommodate (without co-opting) local community institutions and knowledge as a base for conservation. Indeed, two new categories, Community Reserves (managed by local communities), and Conservation Reserves (for sustainable harvesting of certain resources) have been included in the revised Indian Wild Life (Protection) Act currently under consideration.

2. Conservation, whose priority? One important lesson that emerges from Mendha-Lekha is that the local conservation priorities should be taken into account. Forests in Mendha-Lekha may not be one of the areas under national priority for wildlife conservation, but for the people of Mendha-Lekha they are the highest in priority for livelihood, spiritual, cultural, and in many other ways. Any national conservation prioritisation strategy thus has to include such priorities (rather than focusing on ecological factors only of concern to the world outside). Substantial biodiversity elements may well be conserved as a result.

3. Community initiatives are multi-faceted and multi-dimensional: Conservation of resources is a part of livelihood insurance and is linked with all other social dynamics. Initiatives towards natural resource conservation may lead to other social reforms in the village, e.g. equity, empowerment, etc. On the other hand efforts towards other social processes such as achievement of empowerment may lead to natural resource conservation. Therefore conservation cannot be seen in isolation of other social, economic and political processes in the village.

4. Stakeholder analysis and creation of stakes: Mendha-Lekha and other initiatives indicate that, if adequately taken into account, the local communities often have greater stakes and reasons for natural forest conservation than the rest of the society. This leads to the question of who should be the stakeholder in

the management of wildlife and biodiversity rich habitats, including areas officially protected for wildlife conservation. It has been argued (Kothari et al. 1998) that the stakeholders themselves can be divided into primary stakeholders and secondary stakeholders based on certain criteria. Some important criteria could include:

- Cost paid for conservation;
- Extent and nature of dependence on the resources;
- Length of time of this dependence;
- Responsibility towards conservation in terms of resources and efforts; and
- Proximity to resource sought to be conserved.

A primary stakeholder will have to fulfil most (though not necessarily all) of these criteria. A secondary stakeholder will fulfil only some of these. A primary stakeholder in that case becomes an obvious primary manager and beneficiary. For example in case of Mendha-Lekha, the villagers fit in the category of primary stakeholders and to some extent the FD. The industry, other government agencies, other villages, all become secondary stakeholders as their desire to take the responsibility of the well-being of the concerned resources is less than that of gaining benefits. Also degradation of the resources in the forest will have a very direct negative impact on the lives of people in Mendha-Lekha, whereas the others still have other options to bank on. Mendha-Lekha has been able to overcome the problems of encroachments, indiscriminate exploitation by the outsiders, over-exploitation, and others, mainly because of a sense of belonging and a realisation of the stakes involved in the conservation of these forests.

5. Benefits and stakes are not necessarily monetary: There has been considerable work on the possible stakes that could be generated from PAs and other forest areas: access to bio-mass resources, employment, shares in income from tourism or other activities, appropriate developmental inputs, social rewards, and political empowerment. These possibilities, and the legal/policy

implications of these, are reviewed in a number of recent publications (see, for the Indian and Asian contexts, Pathak and Kothari, 1998; and Kothari et al. 1998). Mendha-Lekha and other examples strongly indicate that the stakes for conservation are not always monetary incentives (in fact, in some cases monetary incentives have proved to undermine conservation), but are more in terms of livelihood security, empowerment, and such others.

6. Inter-agency coordination and regional planning: People in Mendha-Lekha have been able to get over the problem of the lack of inter-agency coordination in the area, by acting as mediators between various government agencies active in the village. In many wildlife and forest areas of India, authorities can get over the problem of inadequate resources, which is often cited as an important management constraint, especially for the provision of ecologically-sensitive livelihood inputs to local communities. This can be done by pooling together resources from all line agencies in the area and the human material resources of the communities themselves. It should also be kept in mind that a wildlife protected area does not exist in isolation of various social and political forces and land-use practices in the surrounding areas. Allowing resource intensive activities in the surrounding areas could put more pressure on the resources of the area to be protected, or act in contradiction to conservation objectives. Thus conservation planning should be integrated with that of regional planning. This also relates to the need to tackle destructive commercial forces, a point made below.

7. Adequacy of conservation personnel: When the entire village takes on the responsibility of protection, "inadequate staff" does not remain a cause for ineffective management. In Mendha-Lekha, the FD staff does not need to look after the protection and conservation aspect any more. Poaching, timber smuggling, and other such activities, can thus be controlled with the involvement of the local people. An effective, dedicated and sensitive staff can be an added strength for the conservation effort.

Economically underprivileged villagers could also benefit if the financial sources come to them for their efforts rather than going to an ever increasing yet often ineffective bureaucracy.

8. Importance of information: From the sections above it is clear that people have been able to provide answers to some very important questions (e.g. fire, illegal use, poaching, smuggling of valuable timber and others), that conventional wildlife habitat management is still struggling with in other areas. To a large extent this has been possible because of the open and transparent discussions at the Study circles. It strongly indicates that constant interaction with outsiders and regular discussions within the village make people more conscious and aware, which in turn helps them in taking informed decisions. Thus an important role that emerges for the wildlife authorities is that of extension, through constant interaction with the villagers on equal terms. Officials and other outside experts could bring in the larger perspectives not so easily perceived by the villagers given their limited horizons and access to outside information. In turn, they could learn from the detailed site-specific information that the local people have.

9. Need for joint management and controls: Mendha-Lekha villagers have demanded that they be included in the formal Joint Forest Management scheme of the government, a demand that has also come from other such community efforts in the country. This indicates that communities often do realise the difficulty of managing natural resources on their own, especially given the internal and external social dynamics and political and commercial forces. An active role of the state as a partner in the management of resources is often envisaged by these communities, but on equal terms and in the capacity of a supporter and guide rather than a ruler or policeman.

10. Commercial pressures: Destructive commercial forces, in the face of which wildlife authorities have often felt helpless, can be resisted with the help of a mass support, as has been proved by

the paper mill incident in Mendha-Lekha (see section 6.1). This is not an isolated example. Villagers in Sariska Tiger Reserve in Rajasthan were able to stop limestone mining after the PA management failed to do so. More recently tribal groups fought and won a legal case against a luxury hotel in the Nagarhole National Park in Karnataka. Many villagers in the Himalayan forests have successfully thwarted destructive developmental or commercial forces. A nation-wide agitation against trawling by traditional fisherfolk has forced the Government of India to stop issuing licenses to trawlers; similar agitation convinced the Supreme Court of India to stop all further expansion of industrial aqua-culture along India's coasts; and so on.

11. Combining biodiversity and livelihoods: The contention (often made by orthodox conservationists) that communities are not interested in protecting biodiversity is shown to be false in experiences both in Mendha-Lekha and in several other villages of the country. Conventionally, official Joint Forest Management (JFM) has favoured the harvesting of timber and the sharing of sale proceeds. However, several communities have argued that the more important benefit of JFM is a continuous supply of non-timber forest products (Poffenberger and McGean 1996). This argument, forcefully made by Mendha-Lekha's villagers, translates into the conservation of biologically diverse forests rather than mere plantations of single tree species. The local community's arguments against industrial aquaculture, or commercial fisheries in other areas, have similar grounds and implications. Conservation planners and habitat managers could well build in such concerns to enable a marriage of livelihood requirements and biodiversity conservation.

12. Need for continuous and participatory monitoring: All of the above, however, needs to be accompanied by continuous monitoring and evaluation. This in itself will be most effective if it is participatory and transparent. The local managers will use results of such monitoring in the evolution of management strategies. An example of that is the NTFP monitoring being car-

ried out by the *Jungle Abhyas Mandal* in Mendha-Lekha, in which both villagers and members from outside are involved. This is one area where more could be done in Mendha-Lekha also, as is explained in sections 7 and 8 above.

13. Transparent and democratic institutions and process: One of the important factors, which made the movement in Mendha-Lekha a success, is the transparent and democratic process of decision-making. The emphasis on equal representation of all sections of society in information sharing and subsequent decision-making is one of its unique features. Even where there is discontent regarding certain decisions, those who are not satisfied cannot cite lack of information or participation as a reason, and are often exposed as being simply jealous or critical for the sake of criticism. Such an open and transparent system of functioning at every level of governance, if adopted officially, could help avoid many conflicts arising from information being cornered by a few powerful sections.

Conclusion

The story of Mendha-Lekha is of a process of struggle and transformation of a helpless, uninformed and fear-ridden community into an informed, self-improving and empowered community. Mendha-Lekha villagers have by no means reached an end to their struggle neither is the conservation process completely foolproof. It may not be possible to replicate the same effort in some other area. The villagers very clearly state "it may not be possible to replicate an initiative like ours everywhere, ours is a small, cohesive community and things have often gone right for us". Yet these are the times where the world over governments, funding agencies and NGOs are looking for ways to support sustainable development efforts. Sustainable natural resource management is the need of the hour and widespread demands for a decentralised natural resource management system are gaining momentum. At this time, the process of self-determination and natural resource conservation in Mendha (Lekha) can show the way to an empowered and self-reliant future for many villages in India and sustainably managed ecosystems. The lessons drawn from community initiatives like Mendha-Lekha can play a crucial role in marrying the conservation and livelihood needs in the country.

Goudi name	Botanical name	Masithi name	Type	Local use	Level of occurrence in Masithi area	Where found	Damage status	Regeneration status
Dindora	<i>Bambusa sp.</i>		T	Used for the part above the axle in bullock carts	occ.	Forest		
Power juppi, power tunda	<i>Bambusa ardui</i>	Mahul vel	L	Leaves used for plates and sold, young pods roasted and seeds eaten	rare	Good, moist forest		poor
Sawali	<i>Bombax arda</i>	Kateswar	T	—	common	Village environs, plantations, forest		
Halle	<i>Bomullia serrata</i>	Salai	T	—	occ.	Drier patches in forest		
Kassi	<i>Bodelia retusa</i>		T	Medium quality timber; fruits eaten when ripe	common	Forest		
Kallodcha	<i>Bridelia sp.</i>		T	—	common	Rocky areas, hills		
Rekha	<i>Bachanania laurata</i>	Charali	T	Fruit are eaten and sold	common	Forest		
Murad	<i>Burkea mousaperna</i>	Palsa	T	—	occ.	Village environs and degraded areas		
Chaha-murad	<i>Botes nigrula</i>	Pala vel	L	Leaves made into leaf plates	common	Forest		

Goudi name	Botanical name	Masithi name	Type	Local use	Level of occurrence in Masithi area	Where found	Damage status	Regeneration status
Jural juppi	<i>Calcyonopsis floribunda</i>	Ukha	Sh		common	Disturbed areas		good
Waraki	<i>Capparis zeylanica</i>		C		occ.	Forest near village		
Kamud	<i>Carya arborea</i>	Kumbha	T	Bark used as fish poison. Wood for an equipment to paddle the paddy fields	occ.	Good sites, forest		
Girchi	<i>Cassia graveola</i>	Bhokada	T		occ.	Forest		
Rela	<i>Cassia tomentosa</i>	Bahava	T	Flowers cooked and eaten	rare	Open forest		
Kirindi	<i>Cassia lent</i>	Takla, tarota	H		occ.	Forest		
	<i>Cassia glauca</i>	Bhurya	T	Structural timber in houses	abundant	Openings in forest		ok
	<i>Canarium jirovia</i>		T		rare	Forest		
Beerun	<i>Celastrus paniculatus</i>	Malkanguni	C		occ.	Disturbed forest		
	<i>Cleistanthus auricularia</i>	Bhirri	T	Good timber	common	Talad areas		
	<i>Clerodendron</i>	Chara	C			Agricultural areas		
Odcha	<i>Cleistanthus albus</i>	Garradi	T	Wood for timber, twigs as toothbrushes	abundant	Common on the outskirts of village	Many killed lopped	good

Goan name	Botanical name	Marathi name	Type	Local use	Level of occurrence in Mandla area	Where found	Damage status	Regeneration status
Gougum	<i>Cochlospermum religiosum</i>		T	Pounded fruit is boiled and eaten as a sort of porridge	occ.	Telad areas, hilltops		ok
Bhobad	<i>Cobelia posuioides</i>		H		common	Paddy fields		
	<i>Cordia sp.</i>		T		occ.	Open forest		
	<i>Cryptolepis buchanania</i>		Cl		occ.	Forest		
	<i>Curtuligo ambarderi</i>	Kali musali	H		common	Forest		
Kariyal matra	<i>Cusuma sp.</i>		H		occ.	Forest		
	<i>Dalbergia latifolia</i>	Shisham	T		rare	Forest	ok	low
	<i>Dalbergia pinnulata</i>	Phasi	T		occ.	Forest, telad areas	Intact	ok
Dhobin	<i>Drosera rotundifolia</i>	Bambou, marvel	Sh	Fencing, marring roofing strips below tiles	common	Good somewhat moist patches with loose soil, sites of old shifting cultivation	Many culms cut, some damaged for bamboo shoots	ok
Kainul matra	<i>Dioscorea sp.</i>		H		common	Forest		
	<i>Dalmanella</i>	Hulga	C			Agricultural areas		
	<i>Dioscorea bulbifera</i>	Kada karanda	Cl	Tuber is edible	occ.	Forest		

Goan name	Botanical name	Marathi name	Type	Local use	Level of occurrence in Mandla area	Where found	Damage status	Regeneration status
Kaya matra	<i>Dioscorea bulbifera var. rotata</i>		Cl	Tuber cooked and eaten	common	Village-cultivated Forest		
Kah-ka matra	<i>Dioscorea alata</i>	Waz kanda	Cl	Tuber edible only after cooking and thorough washing	occ.	Forest		
Heer matra	<i>Dioscorea sp.</i>		Cl	Tuber is relished	occ.	Forest		
Tumri	<i>Dioscorea alata</i>	Tembarni, tendu	T	Fruits eaten, Tendu paste	common	Village surroundings, open forest	Lopped, some killed	good
	<i>Dioscorea sp.</i>		T		rare	Good sites		
	<i>Dioscorea rotata</i>		Sh		common	Telad areas		
Mandla	<i>Elaeagnus umbellata</i>	Ragi	C			Agricultural areas		
Nalla	<i>Elaeagnus officinalis</i>	Aonla	T	Fruit eaten, sold	occ.	Forest	ok	ok
Kurvel	<i>Elaeagnus sp.</i>		T		occ.	Forest	ok	
	<i>Elaeagnus umbellata</i>	Pangara	T		occ.	Forest, village environs	Intact	low
Pipid	<i>Ficus amplissima</i>		T			Village environs	ok	
Berel	<i>Ficus bengalensis</i>	Wad	T	Leaves made into leaf plates	rare			

Goudi name	Botanical name	Manufi name	Type	Local use	Level of occurrence in Mendha area	Where found	Damage status	Regeneration status
Toya	<i>Ficus racemosa</i>	Umbar	T	Fruits pounded and boiled as porridge	occ.	Moist sites, stream and river banks	ok	
Aali	<i>Ficus religiosa</i>	Pimpal	T	Young shoots cooked and eaten as vegetable	occ.	Forest, village environs	ok	
Secrail	<i>Ficus tinnutosa</i>		T	Occasionally used for leaf plates	occ.	Rocky areas, hilltops	ok	
	<i>Ficusiana crenata</i>		T		rare	Forest, high ground		
Hager-vedaruna	<i>Flacourtia indica</i>	Tambat, atrun	T	Fruit are eaten	occ.	Open forest, disturbed areas	Occasionally lopped by goatherds	
Kall-modiyal	<i>Gardenia latifolia</i>		T	Fruit eaten when ripe	occ.	Forest, rocky ground		
Pendra	<i>Gardenia sp.</i>		T	Fruit eaten	occ.	Talad areas		
	<i>Gardenia turgida</i>	Pandra phetra	T	Fruits cooked and eaten when they are young	occ.	Disturbed areas, open forest		
Kursi	<i>Gmelina arborea</i>	Shavan	T	Good timber, durable	rare	Good sites		low

Goudi name	Botanical name	Manufi name	Type	Local use	Level of occurrence in Mendha area	Where found	Damage status	Regeneration status
Dharachi	<i>Grewia blanda?</i>		Sh	Fruits eaten	common	Forest		
Gotiya	<i>Grewia sp.</i>		T	Goat fodder	occ.	Forest		
Tehla	<i>Grewia tiliaefolia</i>	Dhaman	T	Fruit eaten, OK timber	occ.	Forest		poor
Barha muandi	<i>Haldinia corymbosa</i>	Haldia, bed	T	Good timber	occ.	Good sites in forest		
Ayya	<i>Helicteres isora</i>	Muru dibeng	Sh	Bark made into rope	common	Forest		
Palod	<i>Hemidesmus indicus</i>	Kholbar vel	CI		common	Open forest		
	<i>Holarrhiza asclepiadacea</i>	Kuda	T	Medicinal, in case of toothache twigs are used for brushing teeth	occ.	Degraded areas, near village		ok in disturbed areas
Doora mazdi	<i>Hymenodictyon sp.</i>	Bhorsal	T		rare	Forest		
	<i>Indigofera sp.</i>		Sh		common	Openings in good forest		
Sandarsop	<i>Ipomoea foetida</i>	Besharam	Sh	—	occ.	Village environs	Intact	—
Lokdi	<i>Isos parviflora</i>	Lokhandi	T	—	occ.	Talad areas		—
Konda puchya	<i>Kingdonia reticulata</i>		Sh	—	rare	Village, moist sites	Intact	—
	<i>Kyllia ulayana</i>	Warangad	T		rare	Forest		
Pilandel	<i>Legastemonia parviflora</i>	Lendi	T	Good timber	common	Regenerating areas, forest		

Candi name	Botanical name	Marathi name	Type	Local use	Level of occurrence in Mendolia area	Where found	Damage status	Regeneration status
Gopid	<i>Lantana camara</i> Delile	Moan, shunti	T	Bark juice used to treat wounds, gum used and sold	occ.	Tekad areas, dry areas and hilltops		
	<i>Lecy sp</i>		H		occ.	Forest		
	<i>Lepidodermis sp</i>		H		common	Open forest, openings		
Hilkum	<i>Loranthus sp</i>	Bandigul	P	Fruit used for making sticky bird lime	common	On other trees both in forest and in village area	Intact	—
Irum, irupe	<i>Madhuca longicollis</i> var <i>longifolia</i>	Muha	T	Flowers eaten, alcohol, seeds for oil, wood for carved marriage posts, leaves for plates	common	Village environs, good sites in forest	Intact	low
	<i>Malbani plumbago</i>	Shendri	T		rare	Good, moist sites		
Parsela, parihari	<i>Martynia volubilis</i>	Khandwed	Cl		occ.	Encroached, disturbed land.		
Mundi	<i>Moringua parviflora</i>	Kalanth	T	—	occ.	Forest	Intact	low
Karpa galle	<i>Olea sp?</i>		Cl	Goats eat leaves, leaves cooked and eaten as a vegetable	occ.	Open forest		

Candi name	Botanical name	Marathi name	Type	Local use	Level of occurrence in Mendolia area	Where found	Damage status	Regeneration status
Kurkut	<i>Olea sp?</i>		Cl	Leaves used to stupefy fish for collection	occ.	Tekad areas		
	<i>Oreocarya sp</i>		H		common	Root parasite on solanaceous members in the marianis	—	—
Kunj euma	<i>Ougenia aspericarpa</i>	Tiwai	T	Good timber	occ.	Forest		low
Metta heendi	<i>Phoebe aculeata</i>	Bhui shindi	Sh	Leaves woven into mats, used for tying bundles	common	In degraded moist areas shifting cultivation clearings	ok	good
Gawli heendi	<i>Phoradendron sylvaticum</i>	Shindi	T	Fruit eaten, leaves woven into mats, tapped for toddy	rare	Village	Some killed by overgrazing	low
Vengura	<i>Pennis sp?</i>		Cl		common	Forest		
	<i>Pterocarpus marsipium</i> Bija		T	Medium quality timber	common	Forest	Felled	ok
Katulkaya	<i>Rauha oliginaea</i>	Kala phetra	T	Children play with the fruit	occ.	Open forest		
Kusum	<i>Schinus molle</i>	Kusum	T	Wood for ploughs, fruit	occ.	Slightly moist sites	ok	low
	<i>Sclerocarya birrea</i>		T		occ.	Tekad areas		

Goali name	Botanical name	Maasuri name	Type	Local use	Level of occurrence in Maasuri area	Where found	Damage status	Regeneration status
Koh-ka	<i>Semecarpus anacardium</i>	Bibba, bilbwa	T	Pedicels of fruits eaten, medicinal	occ.	Forest		
	<i>Solanum amplexicaule</i>		H	Medicinal	common	Village environs and fields		
	<i>Sorghum sp.</i>	Jovar	C			Agricultural areas		
Robdi	<i>Sesymia floribunda</i>	Rohan	T	Poor timber	common	In dry patches, Terlad	ok	good
	<i>Splachnoides indicus</i>	Karu	H		common	Paddy fields		
	<i>Struthia urens</i>		T	Gum eaten, collected and sold	rare	Hill tops, dry areas		low
Padri	<i>Stemopernum sp.</i>	Padal	T		common	Forest, island areas		
	<i>Stemilia asper</i>		T		occ.	Moist sites, near river		
Nendi	<i>Strygium cumini</i>	Jambhal	T	Fruits eaten, leaves used for roof of marriage mandap	occ.	Moist sites, stream and river banks	ok	
	<i>Tamarindus indica</i>	Chindh	T	Fruits eaten	common	Around the settlement		
	<i>Tamarix sp.</i>		Sh		common	River bed		

Goali name	Botanical name	Maasuri name	Type	Local use	Level of occurrence in Maasuri area	Where found	Damage status	Regeneration status
Tekka	<i>Tectona grandis</i>	Sag	T	Timber, carved wedding posts	common	Forest	Felled	ok
	<i>Tectaria sp.</i>		H		common	Field bands		
Mardi	<i>Terminalia alata</i>	Ain	T	Medium quality timber	common	Forest	Somewhat damaged	good
Mangi	<i>Terminalia eajona</i>	Arjun	T		common	Along the banks of large streams and rivers		ok
	<i>Terminalia bellirica</i>	Belicda	T	—	occ.	Forest		
Tah-ka	<i>Terminalia elatula</i>	Hirda	T	Medicinal	occ.	Forest		
Karka	<i>Vanda sp.</i>		E	Edible oil extracted from the fruits	common	On large trees	Intact	—
Wanda	<i>Ventilago sp.</i>		L		occ.	Forest		
Pine hilikum	<i>Woodfordia fruticosa</i>	Dhaini	Sh		occ.	Encroached, disturbed land		
Kadhi	<i>Xylocarpus</i>	Surya	T	Medium quality timber	common	Higher ground		
Rengs	<i>Zizyphus jujuba</i>	Bar	T	Fruits eaten	occ.	Village environs, roadsides		ok
Hoodai	<i>Zizyphus cecropia</i>	Mokai	Sh	Fruit eaten	common	Terlad areas, disturbed areas		

Govt name	Botanical name	Malali name	Type	Local use	Level of occurrence in Mendha area	Where found	Damage status	Regeneration status
Gotiya	<i>Zizyphus xyloperum</i>	Ghatbor, ghot, goti	T	Earlier the branches were dragged over the shifting cultivation area after broadcasting the agri seeds	common	Disturbed areas, open forest, roadsides	Lopped by goat herds	good

Note: T = Trees, Sh = Shrubs, Cl = Climbers, L = Lianas, H = Herbs, E = Epiphytes, C = Crops, Occ. = Occasional

Annexure B: List of fauna

Mammals

English Name	Govt Name	Scientific Names	Occurrence	Comments
Antelope, Fourhorned	Kodral	<i>Tetracus quadricornis</i>	Common	R
Bear, Sloth	Edjal	<i>Melomys urocyon</i>	Common	F, Si
Boar, Indian Wild	Geda Paddi	<i>Sus scrofa</i>	Common	F, Si
Cat, Jungle		<i>Felis tigris</i>	Not known	F
Civet,	Maranai	<i>Pandanus</i>	Not known	R
Common Indian		<i>leopardus</i>		
Deer, Barking	—			
Rare		R		
Deer, Mouse	—	<i>Tragulus memius</i>	Rare	R
Dog, Wild	—	<i>Canis lupus</i>	Rare	R
Fox, Indian	—	<i>Vulpes bengalensis</i>	Common	R
Hare, Indian	Mukel	<i>Lepus insularis</i>	Common	F
Hyena, Striped	Tidinjal	<i>Hyena hyena</i>	Common	R
Jackal		<i>Canis aureus</i>	Common	R
Langur, Common	Munjai	<i>Presbytis entellus</i>	Rare	S
Leopard	Niral	<i>Panthera pardus</i>	Rare	F
Mongoose, Common		<i>Herpestes edwardsii</i>	Common	R
Nilgai	Gudanil	<i>Boselaphus tragocamelus</i>	Common	Si
Pangolin, Indian	—	<i>Manis asiatica</i>	Common	Si
Porcupine, Indian	—	<i>Hystrix sp.</i>	Common	Si
Ratel	Heer-edj	<i>Mellivora capensis</i>	Common	Si
Sambhar	Mav	<i>Rusa muleus</i>	Common	F
Squirrel, Common	Bookbarindel	<i>Petaurista sp.</i>	Common	R
Giant Flying Squirrel, Indian	Perverche	<i>Ratufa indica centralis</i>	Rare	R
Giant				
Macaque, Rhesus	—	<i>Macaca mulatta</i>	Rare	S
Tiger	Barkal	<i>Panthera tigris</i>	Rare	R
Wolf	—	<i>Canis lupus</i>	Rare	R

Note: R = by the villagers, Si = Signs observed personally, S = Seen, F = pugmarks seen

Source: Identified by villagers from *The Book of Indian Animals* by S.H. Prater, and field visits to the forests. Occurrence status is based on signs of the animals seen or reported by the villagers.

Birds

Common English Names	Gauli Names	Scientific Names
Babbler, Jungle	Kanni	<i>Turdoides striatus</i>
Barbet, Crimson-throated	Fukal	<i>Megalaima rubricapilla</i>
Barbet, Large Green	Behra Fukal	<i>Megalaima zeylanica</i>
Baya, Common	Jakor Pittae	<i>Ploceus philippinus</i>
Bee-eater, Bluetailed	Behra Numudiyal	<i>Micropus philippinus</i>
Bee-eater, Small Green	Hudla Numudiyal	<i>Micropus orientalis</i>
Bulbul, Redvented	Pitalka	<i>Pycnonotus cafer</i>
Chat, Pied Bush	—	<i>Saxicola caprata</i>
Chloropsis, Goldfronted	Akhheel	<i>Chloropsis aurifrons</i>
Chloropsis, Goldmantled	Akhheel	<i>Chloropsis cochinchinensis</i>
Crow, House	Kakad	<i>Corvus splendens</i>
Crow, Jungle	Tonde Kakad	<i>Corvus macrorhynchos</i>
Crow-pheasant	Kuman Kukudi	<i>Centropus sinensis</i>
Cuckoo-shrike, Large	—	<i>Corvinus novaeollandiae</i>
Dove, Red Turtle	Tamo Puhad	<i>Streptopelia turgidus</i>
Dove, Spotted	Dekari Puhad	<i>Streptopelia chinensis</i>
Drongo, Black	Hachi	<i>Dicrurus adsimilis</i>
Drongo, Lesser Racket-tailed	Pandole	<i>Dicrurus paradiseus</i>
Drongo, Whitebelled	Behra Hachi	<i>Dicrurus caeruleus</i>
Egret, Cattle	Konda Pittae	<i>Bubulcus ibis</i>
Flycatcher, Blacknaped Blue	—	<i>Hypothymis azurea</i>
Flycatcher, Paradise	Munja Pittae	<i>Terpsiphone paradisi</i>
Flycatcher, Redbreasted	—	<i>Muscivora parva</i>
Flycatcher, Tickell's Blue	—	<i>Muscivora tickelliae</i>
Flycatcher, Whitebrowed Fantailed	Bangali Pittae	<i>Rhipidura aureola</i>
Hawk-cuckoo, Common	Vija Pittae	<i>Cuculus varius</i>
Heron, Pond	—	<i>Ardeola striatus</i>
Hoopoe	Gando Kider	<i>Upupa epops</i>
Hornbill, Common Grey	Benal	<i>Tockus binnatus</i>
Iora, Common	Kovan kor	<i>Aegintha tiphia</i>
Junglefowl, Red	Gela Khor	<i>Gallus gallus</i>
Kingfisher, Whitebreasted	Behra Kirkad	<i>Haliyon myrmensis</i>
Kingfisher, Small Blue	Hudla Kirkad	<i>Alcedo atthis</i>
Kingfisher, Pied	Pandra Kirkad	<i>Ceryle rudis</i>
Koel	Kolhi Pittae	<i>Eudynamis scolopacea</i>
Lapwing, Redwattled	Titer	<i>Vanellus indicus</i>
Magpie-Robin	Paddu Usil	<i>Copsychus saularis</i>
Munia, Spotted	Gurti	<i>Luscinia punctulata</i>
Myna, Indian	Konda Rame	<i>Acridotheres tristis</i>
Myna, Brahminy	Khule Rame	<i>Sturnus pagodatus</i>
Myna, Pied	Kalsi Rame	<i>Sturnus contra</i>

Continued on following page

Annexure

Common English Names	Gauli Names	Scientific Names
Minivet, Small	Kiso pittae	<i>Pericrocotus cinnamomeus</i>
Nightjar, Common Indian	Kappe	<i>Caprimulgus asiaticus</i>
Nightjar, Jungle	Kappe	<i>Caprimulgus indicus</i>
Nuthatch, Chestnutbellied	Aeloom Kider	<i>Sitta castanea</i>
Oriole, Blackheaded	—	<i>Oriolus chinensis</i>
Oriole, Golden	Kamka Bodd	<i>Oriolus chinensis</i>
Owl, Spotted	Kunje	<i>Atene brama</i>
Owl, Barn	Dhala Kunje	<i>Tyto alba</i>
Owl, Great Horned Indian	Tonde Pittae	<i>Bubo bho</i>
Parakeet, Alexandrine	Ragho	<i>Pittacula eupatria</i>
Parakeet, Blossomheaded	Toeki Hidd	<i>Pittacula alexandri</i>
Parakeet, Roseringed	—	<i>Pittacula leucotis</i>
Partridge, Painted	Kakaranj	<i>Francolinus pictus</i>
Peafowl, Common	Mal	<i>Pavo cristatus</i>
Pigeon, Blue Rock	Mera Puhad	<i>Columba livia</i>
Pigeon, Yellowlegged Green	Ponal	<i>Turtur dussumieri</i>
Pitta, Indian	Kotah Pittae	<i>Pitta hardyana</i>
Robin, Indian	Usil	<i>Saxicola rubra</i>
Roller, Indian	Tave Pittae	<i>Crematichneumon</i>
Shikra	—	<i>Accipiter badius</i>
Shrike, Baybacked	Hudla Rekole	<i>Lanius vittatus</i>
Shrike, Rufousbacked	Behra Rekole	<i>Lanius schach</i>
Sparrow, House	Kolka Pittae	<i>Passer domesticus</i>
Sparrow, Yellowthroated	Chedhe	<i>Petronia melanocollis</i>
Sparrow, Red	Hutkal	<i>Gallopenthes spadicea</i>
Sunbird, Purple	Gara Suryal	<i>Nectarinia asiatica</i>
Swift, Palm	Paras Pittae	<i>Cypselurus parvus</i>
Tailor Bird	Tihal	<i>Orthotomus sutorius</i>
Thrush, Orangeheaded Ground	—	<i>Zosterops citrina</i>
Thrush, Whitethroated Ground	Akborahe	<i>Zosterops citrina cyanotis</i>
Tree-pie	Gutah Garmal	<i>Dendroica nigra</i>
Tit, Grey	—	<i>Parus major</i>
White-eye	—	<i>Zosterops palpestris</i>
White-throat, Lesser	—	<i>Sylvia curruca</i>
Woodpecker, Mahatta	Kider	<i>Picoides malabaricus</i>
Woodpecker, Pigny	—	<i>Picoides nannus</i>
Woodpecker, Goldenbacked Lesser	Kider	<i>Dinopium benghalense</i>
Wood Shrike, Common	Baithi Pittae	<i>Topodendron pulcherrimum</i>
Wagtail, White	Behra Luka Pittae	<i>Motacilla alba</i>
Wagtail, Yellow	Hudla Luka Pittae	<i>Motacilla flava</i>
Wren-warbler, Ashy	—	<i>Phalaena socialis</i>

Source: Personal observations 1998, PSC 1998, identified by the villagers from the Book of Indian Birds by Salim Ali.

Reptiles

Common name	Scientific Name	Gondi Name	Marathi name	Status	Where found
Boa, Sand	<i>Eryx conicus</i>	Malwan	Durkya ghumas	R	
Gecko, Brooke's	<i>Hemidactylus brookei</i>	Ilgur	Paal	C	All over, under bark, cracks in rocks walls of buildings, etc.
Cobra, Common	<i>Naja naja</i>	Nag	—	R	
Lizard, Fan-throated	<i>Sitana ponticanus</i>	Pappe dokke	—	C	Open forest, road areas
Gecko	<i>Hemidactylus sp?</i>	Ilgur	Paal	Occ.	Rocky areas, cracks in boulders, caves etc. Village
Lizard, Common	<i>Calotes versicolor</i>	Dokke	Sarda	C	
Monitor Lizard, Water	<i>Varanus bengalensis</i>	Urpai	Ghorpad	Occ	Forest
Python, Indian Rock	<i>Python molurus</i>	—	Azgar	R	—
Snake, Rat	<i>Ptyas mucous</i>	Godal	Dhaman Sarda	Occ.	Fields, forest
Agama, Rock	<i>Psephenophis blanfordianus</i>	Kariyal dokke	—	C	Forest, rocky patches in forest, hills, boulders
Skink	<i>Mabuya sp.</i>	Girne	Sapsurali	C	Forest floor, leaf litter
Skink	<i>Riopa sp.</i>	Kattil girne	Sapsurali	Occ.	Open forest under rocks, fallen logs etc.
Snake, Keelback	<i>Xenochelone piscator</i>	Adranj	Divad, Virola	R	
Snake, Viper	<i>Atractaspis reticulata</i>	Kuttamode	—	R	—
Turtle, ?	—	Hemul	—	R	—
Viper, Russell's	<i>Vipera russelli</i>	Perbhatum	—	R	—
Snake, Common	<i>Lycodon aulicus</i>	—	Kaudya ap	Occ.	Village environs

Note: Occ. = Occasional, R = Rare, C = Common
 Source: Conversation with the villagers and personal observations.

Annexure C: Assessment of vegetation transects data

Landscape Element	No. of species of <i>Trees</i> (GBH > 30 cm)	No. of species of <i>Saplings</i> (GBH 5-29 cm)	Density/ha <i>Trees</i> (GBH > 30 cm)	Density/ha <i>Saplings</i> (GBH 5-29 cm)	Total density/ha of <i>Trees</i> + <i>Saplings</i>	Dominant tree sp. (GBH > 30 cm)	Dominant sp. (GBH 5-29 cm) i.e. around river	Basal area of sp. with GBH > 30 cm sq. m./ha	Basal area of sp. with GBH < 30 cm sq. m./ha	Total basal area sq. m./ha
Old agricultural areas	4	2	58	66	124	Malua	—	8	—	8
Recent agricultural areas	6	2	75	25	100	—	—	2.9	0.06	2.96
Degraded forests	9	10	287	950	1237	<i>Treha</i> and <i>ain</i>	<i>Calophyllum</i> <i>floribunda</i> and <i>Gonali</i>	11.77	0.68	12.45
Tekad (hill) area	12	7	312	350	662	<i>Gonali</i> and <i>Blum</i>	—	10.92	0.56	11.48
Bamboo dominated forests closer to the village	17	4	633	500	1133	Bamboo and <i>Gonali</i>	<i>Gonali</i>	14.05	0.26	14.3
Bamboo dominated forests away from the village	17	9	491	500	991	<i>Gonali</i> and <i>Bamboo</i>	<i>Gonali</i>	20.5	0.24	20.74
Mixed forests at Nawangan	10	1	783	66	849	Bamboo, <i>Gonali</i> , <i>Blum</i> and <i>Lamla</i>	—	9.06	—	9.06

* Forest of an adjoining village with area similar to the bamboo forest close to the village in Mundha-Lebha.

Annexure D: Physical transect of the village

Area and distance from the village	Terrain	Vegetation	Land-use by the village community	Other comments
River bed (app. 600 m to the North)	Gently sloping	Tamarix sp.		
River banks (app. 600 m to the North)	Gentle slope towards river bed	<i>Bambusa arundinacea</i> , <i>Trinandra indica</i> , <i>T. alata</i>	Patches called <i>waran</i> where the <i>waran</i> are available for Vegetables and pulses. Few patches of <i>Dalium</i> <i>hydnus</i>	Water pumped out in the dry season for agriculture in the <i>waran</i> (vegetable field). Area is cultivated only after the monsoons.
Deciduous forest adjoining the river (app. 300 m. to the North)	Gentle slope	<i>Tecoma grandis</i> , <i>T. alata</i> , <i>T. bellina</i> , <i>Baua macrocarpa</i> , <i>Lagerströmia parviflora</i>		Forest is moderately tall (60') but disturbed.
Paddy fields of Lekha village (app. 300 - 500 m. to the North)	Very gentle slope	<i>Methua indica</i> , <i>T. bellina</i> , <i>Baua macrocarpa</i> on the banks	Paddy in the monsoons with pulses and linseed as a non-irrigated winter crop	
Road (app. 250 m. to the North)	Flat	An assortment of large trees on road side		Vehicular traffic moderate, about one vehicle every five minutes.
Disturbed deciduous forests (app. 25-280 m. to the North and East)	Almost flat	<i>Methua indica</i> , <i>Pearsonia macrocarpa</i>		A graveyard near the road with piles of stones marking the graves.

Area and distance from the village	Terrain	Vegetation	Land-use by the village community	Other comments
Mendha-Lekha village settlement area (0 m.)	Almost flat	<i>Methua indica</i> , <i>Pearsonia macrocarpa</i>	In the courtyards and back yards of the houses, fruit trees and vegetables, including <i>Dalium</i> .	Houses with thick mud walls, beams laid above and roofed with locally made tiles, compounds of woven bamboo, cattle-sheds with bamboo thatching, walls and tiled roof supported by wooden poles and beams. Shelters for pigs made of wood and roofed by <i>palmyra</i> palm leaves.
Paddy fields (app. 500-600 m. to the South-east, South, South-west and West, in patches)	Almost flat	A few <i>Methua</i> trees on the banks	Paddy with pulses, maize in the monsoons and linseed, sesame, coriander and <i>dhana</i> in the winter (non-irrigated). A few <i>Palmyra</i> palms.	Apart from the fields the area also has some old wells fixed with dry stone as well as one old unlined well, two seasonal ponds and rocky unsaturated outcrops. There is also a small group of 3-4 large trees with medicinal stores. Houses and other details similar to the main settlement.
Tola (app. 250 m. to the South-west)	Almost flat		<i>Tamarix indica</i> , <i>Pearsonia macrocarpa</i>	Quarrying for road metal (Giro) being carried out in deep pits (10-15'). Plenty of topsoil mainly for farmland.
Scrub forest (0-200 m. to the South)	Slopes, rocky in places	<i>Chandloria indica</i> , <i>Sesuvium indica</i> , <i>T. alata</i> , <i>P. macrocarpa</i> , <i>Z. xyloperga</i> . See Annexure A for other species.	Some patches encroached in the past.	

Area and distance from the village	Terrain	Vegetation	Land-use by the village community	Other comments
Open forest (app. 250 m-1 km. to the South)	Mild slope in some areas	See Annexure A	Old and some more recent encroachments in the area. Some crops as in the paddy fields	Girdling-barking and burning of many trees to increase the size of fields is still being carried out
Van talai (app. 1 km. to the South)	In a mildly sloping watercourse. An artificial tank with earthen bund.	Hydrophytes like <i>Manihot</i> sp. and herbs which grow in areas with residual moisture, like <i>Symplocos indica</i> .		Fish fingerlings are released in the tank in July growing to over 1kg in weight by March of the following year, when they are harvested by the village
Nistar open forest (app. 1-1.5 km to the South)	Moderate slope. Rocky terrain	<i>Phoenix staudii</i> See Annexure A for other species		Used for village requirements. Quarrying for road metal in some areas
Nistar forest with dense bamboo clumps (1.5 km and beyond to the South, South-east and South-west, in patches)	Good slope. Good soil with a few rocky patches till about 2 km. Hilly area beyond	See Annexure A		Exploited by villagers for bamboo under the JFM scheme. At other times villagers get the bamboo that they require for domestic purposes also from this area. Hilly area is not much used for resource extraction, only used for hunting

Annexure E: Important official, NGO, and village level addresses

Devaji Topa
Village Mendha-Lekha
Taluka Dhanora
District Gadchiroli
Maharashtra
Ph. 07138-54129

Mohan Hirabai Hirabai
Vrikshamitra
Tandan Wada, Gandhi Chowk
Post and Dist. Chandrapur - 442402
Maharashtra, India
Ph. 07172-57481
E-mail : vriksha@nagpur.dot.net.in

District Collector, Gadchiroli
Collector Office Complex
Gadchiroli, Maharashtra
Ph. 07132-22304

Conservator of Forests, North Chandrapur Circle
Chandrapur, Maharashtra
Ph. 07172-56279

Divisional Forest Officer, Gadchiroli
Forest Office, Opposite Bus Stand
Gadchiroli, Maharashtra
Ph. 07132-22280

Range Forest Officer,
Dhanora Range
Forest Office, Dhanora
Gadchiroli, Maharashtra

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