COMMUNITY INITIATIVES IN FOREST MANAGEMENT: ISSUES OF CLASS AND GENDER

A CASE STUDY OF PANCHMAHALS DISTRICT, GUJARAT

DISSERTATION SUBMITTED IN PARTIAL FULFILMENT
OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF
MASTER OF PHILOSOPHY IN APPLIED ECONOMICS OF THE
JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI

Chandrika Sharma

CENTRE FOR DEVELOPMENT STUDIES
THIRUVANANTHAPURAM

1995

July 21, 1995.

I hereby affirm that the research for this dissertation titled, "Community Based Initiatives in Forest Management: Issues of Class and Gender - A Case Study of Panchmahals District, Gujarat", submitted to the Jawaharlal Nehru University for the award of the Degree of Master of Philosophy in Applied Economics, was carried out entirely by me at the Centre for Development Studies, Trivandrum.

Chandrika Sharma

Certified that this dissertation is the bonafide work of Chandrika Sharma. This has not been considered for the award of any other degree by any other university.

John Kurien
Associate Fellow
(Supervisor)

Chandan Mukherjee
Director
Centre for Development Studies
Trivandrum

ACKNOWLEDGEMENTS

This study has been inspired by the forest management groups in Santrampur taluka, and is dedicated to them. I am grateful to all the people in this area who found the time to share their experiences, their insights, and their dreams with me.

I would like to thank my guides, Dr. K.P Kannan and Dr. John Kurien. Unfortunately distance, and an erratic postal service, have prevented me from benefitting fully from Dr. Kannan's experience, especially during the latter half of the thesis. Dr. Kurien's support and constructive suggestions have been invaluable.

To Madhu Sarin and Renu Khanna, my colleagues in SAHAJ, I owe gratitude for much more than intellectual, emotional and financial support during the course of this thesis. My association with them since 1986 has been a constant source of strength and inspiration.

I owe special thanks to the director and staff of SARTHI. But for their hospitality, warmth, and cooperation this study would not have been possible. I would specially like to mention Kalubhai, Manojbhai, Dilipbhai, Parvatbhai, Salombhai, Meenaben, Giribhai, Nirmalben, Dhansingh and Champakbhai. Though my association with SARTHI goes back almost a decade, this was my first real opportunity to work closely with the staff here, in what I hope was a mutually beneficial learning experience.

I appreciate the timely help provided by Rakesh and Jeemol at a stage when I was struggling with this thesis. Dr K.K. Subramaniams incisive comments have helped prune and sharpen this thesis. Arunima's suggestions have been useful, even if I have not managed to do full justice to them.

Adjusting to a new subject, and to an academic environment after several years in the 'field' has'nt been easy. If I've coped its been because of some of the people here. Sara, Nita and Babu have made all the difference. Suresh ,Sanjith, Bhaskar, Dennis, Venki, Subu, Saikat, Reshmi, Deepa, Manjula, Mihira, Pinaki, Rajibo, Hari and 'best friend' Vinod, have helped brighten my stay here. Dilip and Arunima lent a much welcome 'punch' to life at CDS.

The smiling faces at the SEWA canteen have been a constant source of happiness. Even if the food has been uninspiring at times, their smiles more than made up!

I would like to mention Naren, whose `laid back' support has helped me put things in perspective many a time, especially when I have been `down and out'. A special thanks also to the yet unborn one, who has been rather cooperative, right through all the tensions of thesis completion!

CONTENTS

LIST OF TABLES

LIST OF MAPS AND FIGURES

INTRODUCTION

Tropical deforestation has been recognised as a critical ecological problem facing the world. In India also, the issue of deforestation is of central concern.

While the area under forests in British India was estimated at 40 per cent (Commander, 1986), recent estimates based on remote sensing data indicated that there has since been a decline in forest cover (Forest Survey of India 1989, 1991). In 1972-75 the actual area under forest cover was placed at 21.6 per cent, and in 1987-89 the corresponding figure dropped to 19.5 per cent. National Remote Sensing Agency data however indicated that the decline has been more drastic. In 1972-75 India's actual forest cover was estimated at 16.9 per cent while between 1980-82 this had substantially reduced to 14.10 per cent (quoted in The State of the Environment Report, CSE, 1985). The Ministry of Environment and Forests, on the other hand, placed the actual forest cover at only 10.63 per cent (quoted in Kaur, 1991). Whatever the actual figure, it is clear that the forest cover is far below the desired 33 per cent targeted by the Government of India.

The alarming rate of deforestation remains unchecked despite over a century of 'scientific management' by the Forest Departments. Deforestation has been attributed to several causes. It is commonly claimed that it is a direct consequence of the pressures arising out of the needs of a growing human and cattle population. That forests have been lost to mining, dam construction, railways, industry and agriculture has also been recognised. Some researchers

and environmentalists have alleged that the nationalisation of forests, and the commercial orientation of the policies pursued by the Government, have been responsible for the decimation in forest cover. It is claimed that these policies have delegitimised local institutions engaged in forest usage and management, thereby converting user-protectors into 'encroachers' and 'illicit fellers', and paradoxically exacerbating the very resource depletion they were intended to check.

The impact of forest degradation on different users of forest resources has varied, as have the responses of the various stake holders. At one end of the spectrum are the 'powerful' industrial and urban interests, which have consistently (and successfully) been lobbying for a greater commercial orientation to forest policy and for more concessions to industry, in the interests of 'economic growth' and 'national' development.

At the other end of the spectrum are the 'less powerful' sections of society- small farmers, tribal, women and other marginalised groups of rural and urban society- whose very survival is linked to, and has been threatened by the shrinking forest resource base. The responses of these sections too have varied. Some communities have dealt with the crisis by further degrading the resources on which they depend for their survival. Their response has to be seen in the context of the forest management policies that have been pursued by the State, policies which have consistently marginalised the priorities of forest dependent communities, and have reduced them from right holders with a direct stake in the conservation of the resource base, to mere concessionaries. In some other

instances, however, local communities have responded to the crisis by reasserting their rights to the control, management and usage of forests. While the Chipko movement is the best known of such initiatives, there is increasing evidence of the spontaneous emergence of community efforts aimed at forest protection and management from several Indian states.

An understanding of the factors that have contributed to the emergence of community based initiatives, and those that have been instrumental in sustaining them, would be valuable, especially since the necessity of eliciting 'community participation' in forest management is being recognised as an imperative by planners, and even by foresters. In fact, common property regimes are being advocated as more appropriate for the management of forest resources under certain circumstances, given the increasing body of literature highlighting the negative impact of both the nationalisation and privatisation of such common pool resources.

This study focuses on the spontaneous emergence of efforts towards protection and management of forest based common pool resources, by local communities, in the Santrampur Taluka of Panchmahals District, Gujarat, a predominantly tribal area. The study attempts to understand the dynamics behind the emergence of community initiatives in forest management. It explores the way in which factors of class and gender structure the relationship of people with forest resources, as well as the equity implications of the forest management systems that have been evolved.

Approximately two thirds of the population of this Taluka is tribal, a factor which influenced the choice of the region to be studied. It was felt that it would be revealing to study the impact of deforestation on traditionally forest dependent communities, and their responses to the same. Another important consideration influencing the choice of area was the fact that the author has been working in this district and in the adjoining Dungarpur District of Rajasthan, for the past seven to eight years, on issues related to gender and environment.

The chapters are organised as follows. After presenting a brief overview of the forest policy that has been pursued in India, Chapter I reviews literature related to common property resource management systems, and discusses issues of equity in these. Literature related to the manner in which factors of class and gender structure the relationship of users with forest resources, is also reviewed. This is followed by an outline of the current research, its objectives, and the methodology used. Chapter II provides a description of the district, and of the forest management clusters selected for the study. Chapter III describes the evolution and current status of the different forms of community based forest management systems in the area. It then analyses the dynamics behind their emergence and behind the different forms taken by them. Chapter IV estimates and analyses the dependence on forest produce of members of the two user groups selected for the study, based on the findings of a household and sample survey. It then analyses dependence on forest resources from the perspective of class and gender, and explores the equity implications of the forest management systems developed in the two

forest management clusters. The link between goals of equity and that of efficiency and sustainability are also explored. Conclusions, and the implications for policy that can be drawn from this study, are contained in Chapter V.

Chapter 1

REVIEW OF LITERATURE AND AN OUTLINE OF THE RESEARCH

This chapter presents a brief historical overview of the Indian Forest Policy in order to provide the macro backdrop against which local initiatives in forest management need to be viewed. The literature review focuses on Common Property Resource Management (CPrRM) as a viable alternative to nationalisation and privatisation for the management of natural resources such as forests, and discusses issues of equity in such systems.

SECTION I: INDIAN FOREST POLICY - AN OVERVIEW

The colonial period : The coming of the British to India introduced radical changes in the patterns of resource use and management. In the pre-colonial period, forests were used primarily for subsistence purposes and were managed by local communities, i.e. responsibility for resource management was linked to resource use via local community institutions (Agarwal, 1992).

The Imperial Forest Department was formed in 1864 to check the rapid rate of deforestation. Deforestation was a consequence of several factors. Important among them were: (a)extraction of timber by the British to meet the massive timber requirements of the Imperial Navy; (b) the development of the railways (after 1853), both because timber was required as raw material and because the railways facilitated extraction of commercial timber from hitherto inaccessible areas; (c)the revenue orientation of the colonial land policy, which encouraged the conversion of forests and other common

lands ('wastelands') into agricultural lands yielding revenue; and (d) development of a market for forest produce in urban centers, including cantonments.

While earlier forests and wastelands falling within the boundaries of the village were considered the property of village communities (Gadgil and Guha 1993), the situation changed drastically after the introduction of the Indian Forest Act of 1865. This Act sought to establish the claims of the State to forests capable of providing valuable timber, subject to the provision that existing rights of local communities not be curtailed.

The Indian Forest Act of 1878 was a more stringent and comprehensive piece of legislation. It facilitated greater state control over forest resources. People were considered to have no rights to forests, unless they could offer legal or written proof of the existence of these rights. They were thus reduced to 'concessionaries' to whom 'privileges' were extended by the Government. Customary use rights, which were often more implicit than formal, were generally ignored.

It is significant that the colonial powers were not unaware of these rights. An 1871 report of the Board of Revenue, Madras (quoted in Gadgil and Guha, 1993) indicated that all forests "without exception are subject to tribal or communal rights, which have existed from time immemorial and which are as difficult to define as they are necessary to the rural population".

The imposition of the 1878 Act provided the base for 'scientific forest management' aimed at commercial timber production. A uniform, centralized and bureaucratic management system was imposed upon a diversity of local situations. The 'scientific' extraction of timber resources helped increase revenue for the State. The rate of extraction was greatly intensified during the second world war (1939-45).

As Bina Agarwal (1992) has pointed out, the forest policies pursued by the British, "in effect (a) severely eroded local systems of management, (b) legally cut off an important source of sustenance for the people; (c) created a continuing source of tension between the forestry officials and the local people; and (d) oriented forest management to commercial needs".

Independence and after : The continuity between the forest policies of colonial and independent India is exemplified by the National Forest Policy of 1952. This policy further reinforced the exclusive control of the state over forest management. The only departure was that "the demands of the commercial industrial sector have replaced strategic imperial needs as the cornerstone of forest policy and management" (Gadgil and Guha, 1993). The 'revenue orientation' of the colonial state was thus maintained.

With conventional forest management unable to meet the growing demands of the industrial and urban sector, the 'production' approach to forestry was adopted. This essentially consisted of raising monocultural plantations of commercially useful species, such as teak, eucalyptus and tropical pines. Between 1951-80,

industrial plantations occupied 69.4 per cent of the total area of established plantations (Ghate, 1992). The impact of this approach on the ecosystem, on biodiversity, and on local livelihood systems was typically ignored, in the quest for greater revenue.

The social forestry programmes pursued vigorously in the 70's and 80's, with the stated objective of meeting the needs of fodder, fuelwood and small timber of the rural population, also promoted monocultural plantations of commercially useful species, especially eucalyptus and casuarina. This was primarily through the 'farm forestry' component, though common land plantations undertaken under this scheme often had the same thrust, thereby converting and distorting the very purpose of common lands.

Such policies have, however, not succeeded in checking or reversing the steady rate of deforestation. As a consequence conflicts over scarce resources have greatly intensified. The impact of the degradation of forest resources on hitherto forest dependent sub groups, whose very survival had been linked to these resources, has been especially severe. These sections have been left with little option but to further degrade forest resources. The reasons for this apparently self destructive behaviour are not difficult to comprehend. Agarwal and Narain (1989), referring to the negative consequences of the Indian Forest Policy, which has effectively delegetimised community control and ownership of forest resources, maintain that "the biggest problem lies in the alienation that the modern state has created amongst village communities toward their commons".

There is a recognition of the need for a change in strategy, if this trend towards the rapid shrinking of the forest resource base is to be checked and reversed. The National Forest Policy (1988) marks a change in the earlier orientation of the government towards forest management, in several respects. The policy states clearly that the derivation of direct economic benefit should be subordinated to the principal objective of maintaining ecological stability. It also emphasises that the claims of local, forest dependent communities on forest produce should be prioritised, and that efforts should be directed towards meeting the forest related needs of such communities. It supports the creation of "a massive people's movement with the involvement of women", to achieve these objectives.

The importance of community participation in forest management has thus been recognised. The concept of collaborative joint forest management (JFM) is gaining popularity (even among foresters), as a means of soliciting the participation of forest dependent villagers in the sustainable management of (degraded) nationalised forests, on the basis of clearly defined rights and responsibilities of both parties i.e the FD and the village institution. Several states have passed Government Resolutions (GRs) legitimising the concept of JFM. These resolutions specify the structure and membership of the Village Level Organisations (VLOs) that are 'eligible' to participate in JFM, and the rights and responsibilities of both the VLOs and the FD.

However, little systematic effort has been made to identify, learn from and strengthen existing community institutions or localised

efforts already working towards forest protection and management in several Indian states[1], even though developmental experience over the past several decades has clearly indicated, that the very act of establishing new institutions often weakens or destroys existing indigenous institutions, which more appropriately serve as the basis for sane and durable development (Westoby, 1987).

SECTION II: REVIEW OF LITERATURE

Common Property Resource Management (CPrRM): The earlier section had discussed the negative impact that the nationalisation of forests has had on forests and on communities dependent on them. Common Property Resource management is increasingly being advocated as an alternative superior to both nationalisation and privatisation, under a variety of circumstances. The important conceptual difference between common pool and common property resources will first be discussed.

Common Pool Resources: Resources such as forests, pastures, wastelands, fisheries, surface and groundwater, have in common certain features- they are "a class of resources for which exclusion is difficult and joint use involves subtractability" (Berkes et al, 1989). Though often referred to as 'common property resources', such resources are more appropriately termed 'common pool resources', so as to make a clearer distinction between the nature of the resource and the institutional arrangements by which

---

[1]. Evidence of such community based initiatives in forest management has come in from several Indian States, including Orissa, Bihar, Madhya Pradesh, Rajasthan, Gujarat, Himachal Pradesh, and Andhra Pradesh (Sarin,1995).

it is managed. There is nothing inherent in the resource itself which determines absolutely the nature of property rights governing it. Common pool resources may not be governed by a common property regime.

The following classification of **property regimes** put forward by Ostrom (1986) and Bromley (1989), clarifies this point. According to this classification, property regimes can be of four kinds:

(a) **Open access** or the absence of well defined property rights;

(b) **Private property** in which an individual or a corporation has the right to exclude others from using that resource;

(c) **Communal or common property** where resources are controlled and managed by an identifiable community; and

(d) **State property** where the state controls the resource and regulates its exploitation and use.

Common pool resources may be governed by any, or a combination of these property regimes.

Property implies a secure expectation over some benefit stream, with the security arising from collective sanctions and arrangements. A common property regime is, therefore, totally distinct from an open access regime, where **nobody has a socially sanctioned claim** over the benefit stream arising from the resource. Thus 'common property is not everybody's property' (Ciriacy - Wantrup and Bishop, 1975). Potential resource users who are not members of a group of co- owners are excluded under a common

property regime. McKean and Ostrom (1995), in fact, point out that common property is more appropriately regarded as shared private property.

The 'Tragedy of the Commons'? In the context of the above discussion, Hardin's assertion that the degradation of common property resources is inevitable, unless they are privatised or brought under state control, can be faulted. It has been emphasised that when Hardin referred to common property resources, he was in fact referring to open access (no- property) resources, characterised by unrestricted entry and unregulated use. Thus the very basis of Hardin's theory, which is currently the dominant framework within which scientists portray environmental and resource issues, can be questioned[2].

The **Malthusian underpinnings** of Hardin's model, whereby the blame for overexploited resources has been placed on burgeoning human populations, has also been challenged. It has been asserted that Hardin's model totally ignores the social, historical and institutional factors contributing to resource degradation. Jodha in his study of common property resources in the arid zone of Western Rajasthan, observed that in the post 1950- 52 period "the land policies of the state seem to have led to the decline of cpr's independent of population pressure". Similarly, with reference to the Amazonian forests, May (1989) commented that "there is no basis

---

[2] Hardin (1994), in a more recent work, has acknowledged the need to differentiate between unmanaged commons subject to degradation, and managed or owned commons where the existence of property rights may be able to prevent the degradation of the resource

for arguing that resource degradation is caused by population pressure on scarce land resources".

Goodland et al. (1989) have identified population growth as only one of the five major causes responsible for the breakdown of traditional community management systems. The other factors identified by them are, (a) increased participation in market economies; (b) breakdown of traditional value systems; (c) technological change; and (d) inappropriate pricing, subsidies, legislation, or other governmental incentives.

It is obvious that Hardin, by concentrating on population as a key factor in resource degradation, ignored a complexity of other contextual factors, thereby rendering his model inadequate.

Given that the model itself is based on faulty premises, suggestions of privatisation and statisation as superior management options emanating from it, are both logically and empirically suspect. Arnold and Campbell (1986) have described the negative impact of the nationalisation of forests by the government of Nepal. By converting communally owned forests into state property, forests were in reality reduced to open access resources, and deforestation actually increased. A similar process has been observed in Thailand and India among others.

It has also been observed that privately owned resources may also be subject to overexploitation. Runge (1986) has pointed out that, in some cases, landowners do not have the incentive to exploit available resources in a sustainable way, as with absentee

landlords. Feder (1977) describes how massive private investment in the expansion of beef cattle production in fragile ecological conditions has been supported by domestic governments in the Amazonian basin. Degradation of environmental resources has been accompanied by the disenfranchisement of large numbers of small farmers, forest dwellers and agricultural labourers. This suggests that privatisation can have disastrous distributional as well as environmental consequences.

According to Bromley and Cernea (1989), "privatisation, by transferring control of resources to a limited number of individuals who thereby acquire the social and the legal sanction to exclude others, is in fact likely to exacerbate the problems of the excess of population without access to private property", leading to what McCay (1984) has referred to as the "tragedies of the commoners". At the same time privatisation, by transferring land titles to males, further strengthens institutional barriers to women's access to resources, and erodes women's usufruct rights to common lands.

Sustainability of Communally Managed Resources: Recent research on traditional resource management systems has disputed some of the earlier views about their economic inefficiency and adverse impact on the environment. There is a rich and growing body of literature on the sustainability of resources managed under common property regimes. Such instances have been reported from a variety of geographical settings representing a diversity of cultures. This proves beyond doubt that the 'tragedy' is not all pervasive. Bromley (1991), in fact, suggests that the real and lasting

'tragedy' is the "process by which indigenous property right structures have been undermined and delegitimised".

Researchers have identified the conditions which aid the emergence of such community based management regimes, and those that help sustain them. For instance, **Wade** (1988), suggests that **certain features facilitate collective action.** Among other things he emphasises that collective action is likely to be more successful where the boundaries of the resource and of the user group are clearly defined, where the user group is small, and where their dependence on the resource is high. He also mentions that the chances of local user groups succeeding in resource management efforts are higher, in cases where the state does not undermine their efforts.

Similarly **Ostrom** (1990), on the basis of an analysis of enduring self governing institutions, has emphasized that despite the differences among them (for example, differences in operational rules and regulations), there are nevertheless certain fundamental similarities. She has identified **eight design principles that characterize successful CPrR institutions.** These are, (a) Clearly defined boundaries of both the user group and the resource; (b) Congruence between appropriation and provision rules and local conditions; (c) Collective Choice Arrangements;
(d) Monitoring mechanisms; (e) Provision for applying graduated sanctions according to the gravity of the offenses committed; (f) Conflict resolution mechanisms; (g) Minimal recognition of rights to organize by external government authorities; and for Common Property Regimes that are parts of larger systems (h) Nested

enterprises: i.e. Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.

Research in the field therefore suggests that certain conditions facilitate the emergence and sustenance of collective action, and that under some circumstances, CPrRM regimes are, and remain, the most appropriate for the sustainable management of natural resources.

Equity Issues in CPrRM: Common Property Resource Management regimes are commonly perceived as more equitable, as compared to the other options of privatisation and nationalisation.

Literature on the issue however suggests that some degree of caution needs to be exercised in concluding that community based arrangements are, in reality, inherently more equitable and democratic. Jackson (1993) points to the need to consider "the degree to which environmental conservation by a wide range of agents frequently seems to be based on coercive social relations". She cites Gadgil and Guha's (1993) description of the manner in which the caste system facilitated conservation in ancient India, to support her assertion. Similarly Quiggins (1993), notes that common property institutions can coexist with significant inequality.

Several researchers have pointed to the manner in which the priorities and interests of the 'less powerful' are subsumed in community management initiatives. It is emphasised that these

systems might in fact be less equitable than would appear on the surface. Nadkarni (1989), on the basis of his study in Karnataka, has pointed out that the problem of reconciling diverse and often conflicting ends with scarce means, is often resolved through a political struggle between interest groups. Thus, how forests are used is determined through a political struggle, in which the needs of those not powerfully backed are sacrificed.

Watson (1989) observed that the exclusion of women from decision making and/ or the benefits of such resource management systems, is perhaps the most readily observable example of inequality, although similar exclusions of the 'less powerful' based on class, caste and race are also very common. Similarly Sarin (1995) notes that the needs of forest dependent women often receive "no more consideration under 'community' forest protection than under the much-maligned policing-based management of the FDs".

Several researchers have pointed out that issues of equity are closely linked to that of the sustainability and the efficiency of the institutional arrangement. Tang (1992), for instance, maintains that institutional arrangements that help ensure a more equitable sharing of benefits and burdens, help sustain cooperative efforts. Similarly, Oakerson (1986) stresses that the presence of inequities may lead to the collapse of cooperative efforts, and that the goals of efficiency and equity are closely related.

A review of literature therefore suggests, that while there appears to be a compatibility between equity goals with those of the efficiency and the sustainability of the management system, common

property resource management systems are not, in practice, always equitable. Hierarchical power relations within the community are often reproduced in CPrR management initiatives.

Relationship with Land Based Common Pool Resources, including forests, as mediated by factors of Class and Gender: The earlier discussion suggests that the priorities of certain sub groups within a community are often subsumed in community management initiatives. This would imply that rather than regarding a community or a household as a homogeneous entity with homogeneous interests and priorities, there is a need to identify the various groups of resource users within it, their patterns of resource usage, and their priorities with respect to resource management. There is also a need to explore the conflicts, if any, over resource use. Literature on the manner in which factors of class and gender structure the relationship of users with land based natural resources in particular, and with the environment in general, is therefore discussed. Prior to that, literature related to the relevance of Common Pool Land Resources (CPLRs) in the Indian context, is reviewed.

CPLRs in India constitute "both lands exclusively demarcated for community use as well as lands under the revenue and forest departments of India, which are under state control restrictions" (Agarwal and Narain, 1991). They include therefore private agricultural land under seasonal fallow, village common lands, revenue lands and forest lands (Arnold and Stewart, 1989). Such common lands are a crucial source of fodder, fuelwood, food, income and medicines, among other things, to local communities.

It has been observed that in India, the importance of CPLRs such as forests, common and grazing lands, is greater in arid areas, mountain regions and unirrigated areas. Arnold and Stewart (1991) have found that while in hilly, semi arid and arid regions, CPLRs are valued as a source of inputs for agriculture, in forested and tribal regions CPLRs are considered more important as a source of Non Timber Forest produce (NTFP). Typically, returns from CPLRs in these regions are an important supplementary source of income. The importance of CPLRs in humid regions and river valleys (as a source of supplementary resources) is far less (Chopra et al, 1989).

CPLRs have been undergoing a process of qualitative and quantitative decline. In quantitative terms, due to privatisation (legal and illegal) and to the appropriation of these lands by the government, many of the areas previously accessible to communities are no longer so. A study conducted by Jodha (1986) in over 80 villages of 21 districts in 7 Indian states indicated that the area under CPLRs has declined by 26 per cent to 63 per cent during the last three decades (this estimate excludes forest lands). According to Singh (1986), in the 19th century upto two thirds of the lands in India were under community control, while Chopra et al (1990) estimate that at present common access of some sort is available to the people in only about one fifth of the country's geographical area (this estimate excludes area under reserved forests). While these estimates are highly tentative (Katar Singh, 1994), that there has been a decline in CPLRs accessible to local communities, is undisputed.

In qualitative terms most of the remaining common pool resources (which have not been privatised or nationalised), are in a highly degraded and unproductive state. A major reason for this is the **breakdown in systems of community management**, and the consequent increase in unregulated and exploitative pressure on these lands. Of the 80 villages studied by Jodha (1986), only 10 per cent still retained some provisions for the regulation and maintenance of the common land areas. His study compared the situation in the 1950's with that in the 1980's. Historical records also indicate that in the pre- British period, peasant communities enjoyed near total control of forests, and had evolved systems of management that were usually more implicit than formal (Guha and Gadgil, 1993).

Research has indicated that ***class factors play an important role in mediating dependence on CPLRs.*** The earlier mentioned study by Jodha (1986), in the dry tropical regions of India, indicates that the poor depend heavily on CPLRs for supply of fodder and fuelwood, and that collection and sale of products from these accounted for at least 14 to 23 per cent of the total household income of poorer families. At the same time, only 10 to 18 per cent of the large farmers (as against 84 to 100 per cent of the poor), made use of the common lands. Similarly Iyengar (1989), in a study of the size, status and use of common lands in 25 villages in Gujarat, found that most of the people dependent on CPRs were the landless and marginal farmers.

Gender has been recognised as an important factor mediating the relationship of men and women with natural resources such as forests. Several streams of thought in the gender and environment

debate can be identified. One perspective postulates that there is a 'special' link between women and nature. While those belonging to the WED (Women, Environment and Development) approach highlight the 'material' aspects of this relationship (or the greater material dependence of women on natural resources), the ecofeminist school (eg Shiva, 1989) also sees this relationship as 'spiritual' and 'conceptual'[3].

The above perspective has come in for heavy criticism from other feminists and researchers, not least for 'invisibilising' men. It has also been accused of grouping all women into one category, notwithstanding differences of caste, class, race, age, ethnicity etc. between them, differences which undoubtedly shape the relationship of women with natural resources[4].

While recognising that in many societies, women, especially poor women, share a closer material relationship with natural resources as compared to men, and are therefore more affected by environmental degradation, recent approaches locate this greater material dependence of women in the wider social relations of gender, and the manner in which they structure resource use. Such approaches include that of feminist political ecology (Rocheleau, 1995), feminist environmentalism (Agarwal,1992) and GED (Gender, Environment and Development). It is also emphasised that, despite the fact that the gender division of labour prevailing in many societies prescribes several environment related sustenance tasks

---

[3]. See for example Leach et al 1995, for a more detailed discussion on the WED and ecofeminist approaches.

[4]. For a more detailed critique of the ecofeminist and WED approaches see Agarwal, 1992, and Leach et al, 1995).

such as fuelwood and fodder collection as 'womens work', this does not necessarily imply that women have greater property rights or decision making power with respect to the management of the resources which they use. Rocheleau (1995) points out that there is often a **mismatch between gendered responsibilities and rights.**

While WED approaches have been accused of being static in their conceptualisation of women's relationship with the environment, GED approaches recognise that gender relations (which themselves are changeable over time and between cultures) not only structure the relationship of men and women with the environment, but also that changes in the natural resource base influence the gender division of labour, and thereby gender relations. There is thus a recognition of the fact that the relationship between men and women with the environment is two way and dynamic. The feminist political ecology school emphasises that the micro economy of gendered resource use is also influenced by changes in the wider political economy.

Gender differences in rights to private property influence the relationship of women with common resources, such as forests. Agarwal (1992), for instance, has emphasized that given women's limited rights to private property resources, rights to commons "have always provided women and children (especially those of tribal, landless or marginal peasant households) a source of subsistence unmediated by dependency relationships on adult males". Sarin (1995) mentions that in the Bankura Division of West Bengal, women utilized a vast range of products from CPLR's, both for sale and for domestic consumption, such as fruits, flowers, shoots,

tubers, mushrooms, seeds, leaves etc. She notes that a majority of such NTFPs are collected by women only, and that the income from this activity is controlled by them.

Kelkar and Nathan (1991), on the basis of their study of the tribal groups in the Jharkhand area, have suggested that a plausible explanation for the fact that women in tribal societies are not completely devalued, is that control over income from at least gathering of forest produce, is retained by them. This is in contrast to income from private agricultural land which is controlled by the male owner. This implies that the status of women in tribal societies is linked with their independent access to income from productive resources, such as forests.

This sub section therefore suggests that the priorities of different groups of resource users are likely to differ by class and gender (and in many cases by caste, ethnicity etc). This insight is important for understanding issues of equity in CPrRM systems.

SECTION III: RESEARCH OUTLINE

As mentioned earlier the study will be conducted in the Santrampur taluka of Panchmahals District, Gujarat, a region which has witnessed the recent emergence of local initiatives in forest management. Such initiatives have taken various forms and are either community based or household based. The coexistence of different property regimes in the same forest area is thus in evidence, with state ownership and management of forest resources

coexisting with either community or private control and management. Forest based common pool resources in the Taluka can therefore be seen to be governed by the following combination of property regimes.

(a) **State and private property regime** where state owned forest resources are *de facto* privatised resources. Families living adjacent to particular forest patches, not only actively protect the forest patch, but also exercise socially recognised claims to produce from it.

(b) **State and common property regime** in those state owned forest areas which are protected and managed by a clearly defined user group. The user group enjoys the benefits flowing from that forest area, again a claim that tends to be socially recognised.

(c) **State property and open access regime** where *de jure* state owned resources are *de facto* open access, in that there is unregulated access to and usage of such resources. Most forest resources within the Taluka belong to this category, and are understandably in a highly degraded state.

Objectives:

Given this background, the following objectives have been defined for the present research.

(1) To understand the micro and macro level factors behind the recent trends towards forest protection and management in the area;

(2) To understand the reasons behind the emergence of different forms of community based forest protection within the same Taluka;

(3) To explore patterns of dependence on forest resources by class and gender;

(4) To explore the manner in which the community based forest management systems have reconciled and represented the interests of different subgroups within the user group (by class and gender).

Methodological Concepts :

Two important concepts that have a bearing on the methodology adopted, are as follows:

(a) **Cluster Approach:** In this area it is common to find a cluster of villages (in close proximity to each other) which have adopted similar systems of forest management, in close succession. In the present research the 'cluster approach' is used, since developments in one village can be better understood in relation to developments in others close by. In fact, forest related decisions adopted by one group trigger off a chain reaction in the others. For instance, a decision taken by one group to close off a particular forest area to 'outsiders', may prompt neighbouring groups which have been directly affected by the decision, to also close off 'their' forest area, in order to ensure that their needs for forest produce are met.

(b) User Group: Since in each cluster one user group has been selected for closer analysis, the method used for user group identification becomes crucial.

In areas where larger and more formalised community based systems of forest management are prevalent, identification of the 'user group' for purposes of this research, has not been based on revenue village or panchayat boundaries. Instead, each composite forest area being protected has been taken as the unit, and the villages or communities managing it have been taken as the user group. This approach has been adopted in view of the actual situation prevailing in the area. In many cases, the membership of forest management groups cuts across revenue village, and even panchayat boundaries. A group may have, for instance, members from two different villages, falling in different panchayats. It would therefore be misleading to use village or panchayat boundaries to identify the user group.

In clusters where more informal, hamlet based systems of protection prevail, identification of user group boundaries becomes more complex. Strictly speaking, the user group can be seen as consisting of those families within the hamlet which have been managing a particular forest unit. The size of the user group could then range from anywhere between 6-7 to 25-30 families i.e. the number of families in that particular hamlet. However, in order to facilitate a more meaningful analysis, user groups falling within the boundaries of a particular revenue village have been taken as the unit of analysis for the purpose of this research. This approach has been adopted to better understand the functioning of

a range of smaller user groups, and the relationship between them. This has also been done in view of the prevailing situation, in which the efforts by the Forest Department (FD) and NGO's (Non Governmental Organisations) to promote Joint Forest Management, has led to the crystallisation of the identity of several smaller user groups along revenue village boundaries. Thus for the purpose of this study, the term 'user group' in the context of the hamlet based system of forest protection, will henceforth refer to and include all the smaller user groups within the boundaries of the revenue village selected.

It is important to note that both the larger and the more formalised, as well as the less formal, hamlet based systems of forest protection and management, have been regarded as different forms of community based management[5]. This highlights the complexity of the terms 'community' and 'user group' in the context of the use and management of natural resources.

Methodology:

Primary field data was collected over a period of 8 months, from July '94 to February '95.

During the **first phase**, visits to different parts of the taluka were undertaken, to understand the various systems of forest

---

[5]. The term community based management has been used rather than community based protection, since many of these groups perform functions other than protection. These include regulating access to group members, deciding and enforcing rules of extraction, resolving forest related conflicts, sanctioning offenders, organising regular meetings, and so on. Of course given the fact that legal control and ownership of forests remains vested with the FD, the range of management functions that can be undertaken by these groups are necessarily limited.

management in prevalence. On the basis of these visits two forest management clusters, representing different forms of community based management, were selected for further study. In each cluster one user group was identified for closer analysis. Use was made of qualitative tools of data collection, such as focus group discussions and key informant interviews, as well as of spatial tools.

During the **second phase**, qualitative and quantitative information about the two user groups was collected. The evolution of the forest management system was traced for both groups. A complete household survey was conducted to gather basic information about land and livestock ownership, main and subsidiary sources of income, migration patterns, and commercial and other forest produce collected. During this phase the techniques used included interviews with key informants, focus group discussions with various groups of forest users, questionnaire survey, and spatial tools.

During the **third phase**, members of the two user groups were categorised on the basis of wealth, using a modified form of the wealth ranking method. Detailed quantitative and qualitative information for each wealth category was collected, for a 10 per cent stratified random sample from each user group. Information collected related to the total income of the family, as well as to the forest produce collected for both domestic and commercial purposes. The gender distribution of responsibilities within the household with respect to collection of forest produce, was also

obtained. Other than wealth ranking, use was made of the questionnaire survey method, activity profile method, and of indepth household interviews.

More details about the methods used in the study are provided in Appendix 1.

Chapter 2

A DESCRIPTION OF THE STUDY AREA AND OF THE CLUSTERS SELECTED

As mentioned in the earlier chapter, the study is based in the Santrampur Taluka of Panchmahals District, Gujarat. This chapter carries a description of the study area, its people and its forests. A brief description of the two forest management clusters selected for further analysis, is also provided.

SECTION I : THE STUDY AREA

Brief Profile of Panchmahals District : The Panchmahals, situated towards the eastern border of Gujarat , adjoining Rajasthan and Madhya Pradesh, is the second largest district of Gujarat (Maps 2.1 and 2.2). A comparative statistical profile of the district is presented in Table 2.1.

The district is relatively backward as compared to both Gujarat and India. Literacy, especially female literacy, is low. It can also be observed that the district is predominantly agricultural, with 82 per cent of its main workers dependent on agriculture and allied activities. The average size of landholdings is smaller as compared to the State average. While the net sown area in the district is relatively higher, most of this is unirrigated. Since almost 88 per cent of the land under cultivation is rainfed, the districts' economy is highly vulnerable to crop failures. Though the average annual rainfall in the district is about 1000 mm, variations in annual rainfall are high and six out of every ten years are prone to drought. Panchmahals also has a relatively higher area under

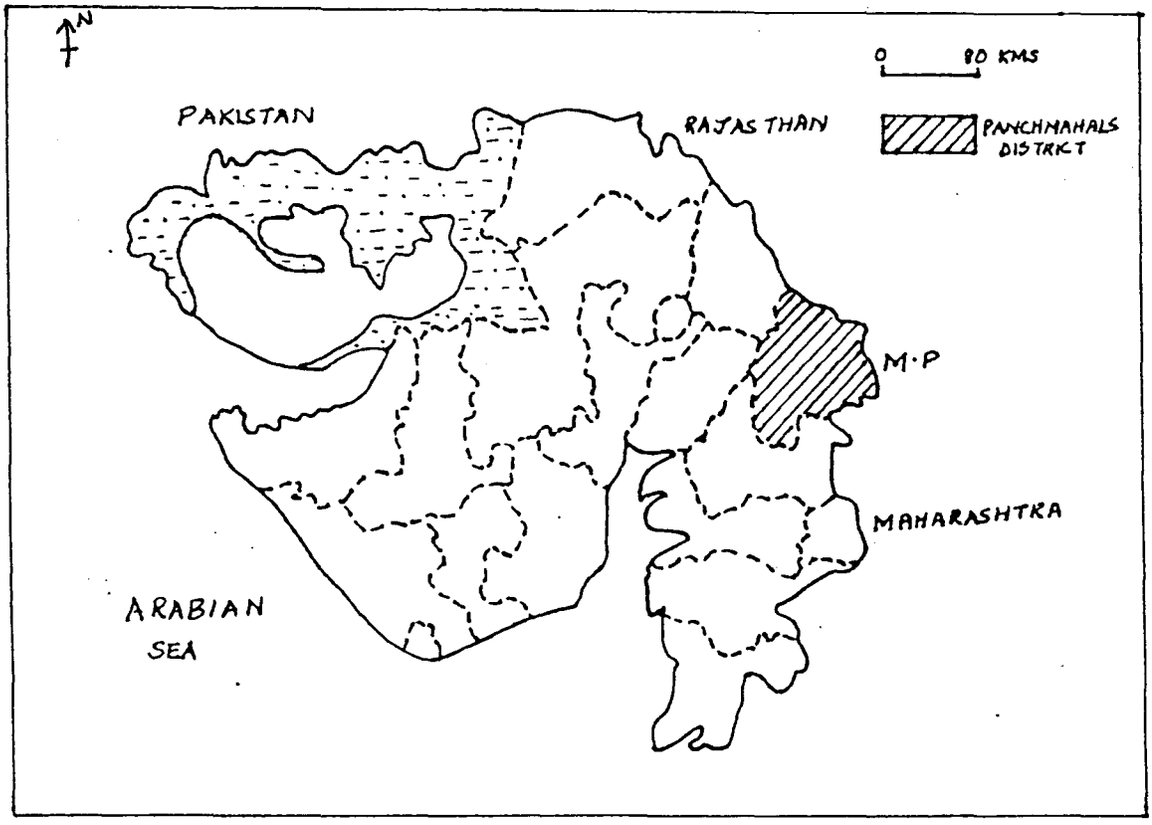
forests and a higher per capita forest area, as compared to that of the state. It also needs to be noted that population growth in the district as a whole is high, as compared to both Gujarat and India, as is the density of population per square kilometer.

Table 2.1 : A Comparative View of Panchmahals District

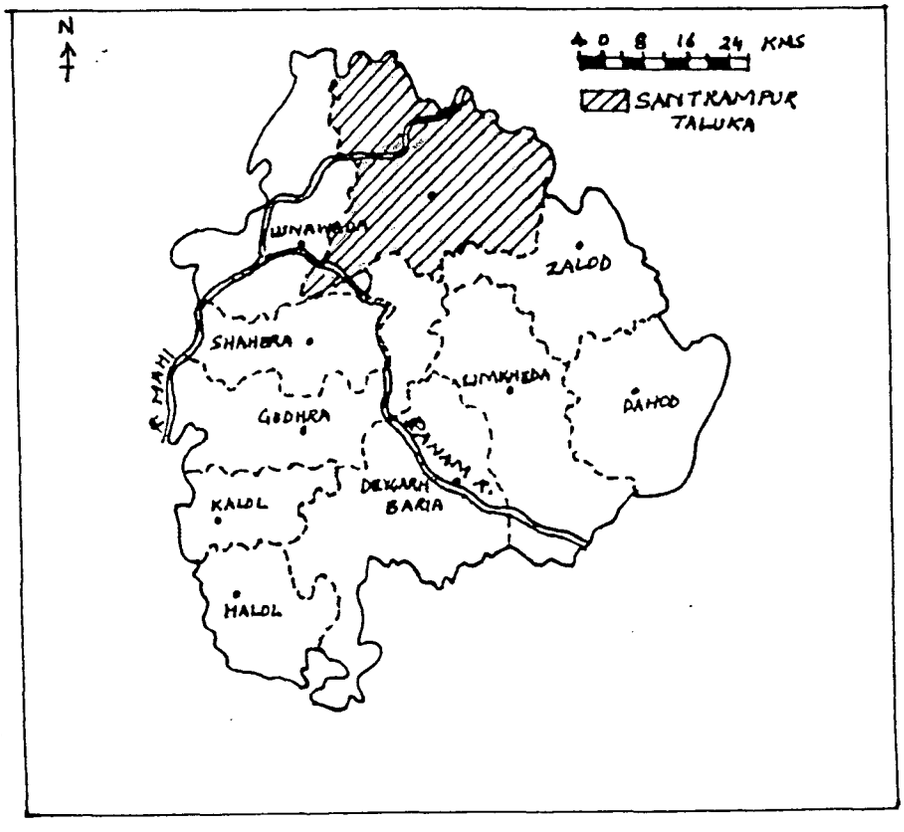
	Unit	Dist	State	India
Relative Index of Development	Index	40	114	100
Population growth (per annum)	%	2.42	1.91	2.14
Population Density (persons/sq km)	Nos	333	210	273
Urbanisation	%	10.6	34.5	25.7
Literacy	%	43.8	61.3	52.2
Male	%	59.3	73.1	64.1
Female	%	27.3	48.6	39.3
Rural	%	39.9	53.1	44.7
Urban	%	75.4	76.5	73.1
Workers as % of total pop.	%	47.1	40.2	37.5
As % of main workers				
Agri. and allied activ.	%	82.0	59.3	66.9
Services	%	12.4	22.4	20.5
Forest area as % of reporting area	%	25.5	10.0	21.8
Per capita forest area	ha.	0.08	0.05	0.09
Net sown area as % of reporting area	%	53.6	51.1	46.3
Grs irri area % of grs cropped area	%	12.1	25.2	30.7
Avg size of operational holding	ha.	2.4	3.3	1.7
Per capita foodgrain prod.	kgs	106	77	173
% of tribal population*	%	41.8	14.2	7.7

Source: CMIE, Profile of Districts, 1993
Census of India, 1981; GOI ISRO, 1994.
* Data from 1981 Census. All other demographic data from 1991 census.

Map 2.1 : Location of Panchmahals District in Gujarat



Map 2.2 : Location of Santrampur Taluka in Panchmahals District



The district has a fairly large tribal population- approximately 42 per cent according to the 1981 census. The main tribes in the area are the Bhils, the Patelias, the Rathawas and the Naikdas.

The statistical profile of Santrampur Block is fairly similar to that of the district as a whole. A major difference is that the proportion of Scheduled Tribes is much higher- approximately 66 per cent according to the 1981 census. Historical records indicate that Santrampur was a princely state, forming part of the Rewakantha Agency, till it was merged into the district after 1947.

Forests and Forest Policy in Historical Perspective: The forests of Panchmahals are historically famous. It was here that the Sultans of Ahmedabad and the Mughal emperors used to come on elephant hunting expeditions. The District Gazetteer (1972) records that till about 1860 the forests of the district were well stocked. The situation is said to have changed radically after the construction of a railway line in 1861. This was also around the period when the district (excluding the princely states) was transferred by the Scindias to the British. The forests were brought under 'scientific' management, and a commercial orientation was introduced into forest administration. The gazetteer notes that till this period "in the backward state of the economy and the administration, the forests were not exploited for commercial purposes".

With the passing of the Indian Forest Act in 1865 and its subsequent revision in 1878, the process of takeover of forests by the State was initiated. Despite 'scientific' management, the

condition of the forests deteriorated rapidly. The gazetteer notes that there was much deforestation during the second world war (1939 - 45) to meet the needs of the Imperial Navy. By Independence little remained of the formerly lush forests.

The forest areas of the princely state of Santrampur were not directly under the Imperial Forest Department. The forests in this area were found in scattered, relatively inaccessible pockets. These features were perhaps instrumental in reducing the commercial exploitation of the forests in the Block, and in preserving the forests. All the princely states are recorded to have had well protected forests at the time of the merger in 1948. However, there are reports of large scale forest felling by the rulers of the princely states, prior to handover to the Forest Department, in an attempt to derive maximum profit (District Gazetteer, 1972).

The condition of the forests has, if anything, worsened after Independence. Though 25.5 per cent of the total area in this district is under the forest department, most of this is degraded. According to the figures released by the Forest Survey of India in 1991 (quoted in GOI-ISRO, 1992), the district has an area of only 10.7 per cent under dense or open forest. The commercial exploitation of the forests through the contractor system has, no doubt, been a major factor contributing to this situation. Though contracts for forest felling operations were officially handed over to tribal cooperatives, it is a well known fact that in reality these cooperatives were controlled by non tribal contractors, with

little of the profits flowing to the tribal members of the cooperatives (Nath, 1960).

The process of deforestation has been equally rapid in Santrampur Taluka. While Taluka level data is difficult to procure, the extent of deforestation can be estimated from the fact that while the 1972-73 Working Plan[1] included 32,000 hectares (24 per cent) of forest land under the Main Working Circle, recommendations based on 1990 satellite data have included only 10,973 hectares (8.2 per cent) under the MWC (GOI-ISRO, 1992). A drastic loss of forest cover is clearly indicated.

Impact on the Local Economy: The above process of deforestation has, as expected, had a negative impact on forest dependent persons, especially forest dwellers, small and marginal farmers, and women. With the increase in forest degradation, most 'concessions and privileges' provided to the local population, have gradually been withdrawn. From enjoying free and relatively unrestrained access to forest produce, local people have gradually been reduced to 'encroachers'.

Forests have traditionally provided direct sustenance (provision of food, fodder, fuelwood) and employment (through sale of Non Timber Forest Produce, fuelwood, and timber) to these groups. Writing about the Bhils in the nearby area of Ratanmal, Nath (1960)

---

[1]. Forest Working Plans are prepared by the Forest Department after a detailed physical survey of the forest area, a process often taking several years. Forests having tree growth of over 20 per cent, are included under the Main Working Circle (MWC). Areas under MWC are meant to provide timber, poles and firewood, and are subject to a rotational felling period of fifty years.

observed that even in good years, agricultural yields were not sufficient to last more than 8 to 10 months a year. Important supplementary sources of food and income were provided by the forests, with its several produce and plentiful labour opportunities. He found that migration was quite minimal- definitely not a regular feature of the economy of even the poorer households.

The situation has changed drastically since then. With the increase in population, size of landholdings and consequently returns from agriculture, have reduced. At the same time, with the decline in forest cover, the importance of forests as a source of food and income has declined. Migration has become a common feature, especially during the agriculturally lean period.

The Tribal Population: Historically, most of the area of Rewakantha, which includes the present day Santrampur Taluka, was ruled by tribal Bhil or Koli chiefs (Nath, 1960). It was only after the 11th century that control was wrested away from them by Rajput or Muhammedan invaders. The tribals were steadily pushed into the interior, hilly and forested areas, where they are found even today.

The main tribal groups in the district are the Bhils, the Patelias, the Rathawas, and the Naiks, with the Bhils in the majority. Nath, writing about the tribals of Ratanmal, observed that a generally accepted social hierarchy had come to be evolved between the various tribal groups, governing inter group relations. In this hierarchy, the Kolis and the Patelias were considered among the

highest, followed by the Bhils, with the Naiks at the very bottom of the social ladder. He observed that the Naiks usually constituted groups of landless labourers or small landholders, forming the depressed sections of the community structure.

Within the Bhils there are a large number of patrilineal, exogamous clans (ataks). Nath (1960) observes that there does not seem to be any hierarchy either among the clans themselves, or within the clans. According to him, rather than clan membership, lineage membership, spanning seven to eight generations, is more significant in terms of cooperation in economic, social and other activities. Male elders of the lineage group have the authority to control and coordinate the activities of group members, to sit in judgement, and to resolve disputes between them.

Shah (1959) writes that as late as the 1940's the **Naiks were nomadic, practicing shifting cultivation.** He observed that the Naiks of Panchmahals district were generally landless labourers, wood cutters or forest produce gatherers. Popular Naik proverbs like "hathni hatheliae jeeviae" (Naiks live by the labour of their hands), amply brings out the situation of the Naiks. This remains true of the Naiks of the district even today.

Researchers have challenged the popular and romantic perception of a tribal society as a homogeneous, classless entity (Shah, 1976; Pathy, 1984; Bose,1986). Bose, based on his analysis of the tribals in the Vadodara, Sabarkantha, and the Dangs district of Gujarat, identified four classes of peasants among the Gujarat tribals- rich peasants, middle peasants, poor peasants and agricultural

labourers. He concluded that stratification among the tribals exists, and has come to stay. His study supported the conclusions of an earlier study by Shah (1976), in the Panchmahals and Bharuch districts of Gujarat.

Thus research in Gujarat, as in other parts of India, indicates that not only are some tribes like the Naiks relatively more backward, but also that within tribal groups in general there are distinct class differences, characterised by differences in control over resources and means of production.

Research also indicates the presence of gender inequities in tribal societies. While there is little meaningful research on gender related aspects among the tribals of Gujarat, research by Kelkar and Nathan (1991) among the tribals of the Jharkhand area of Bihar, is indicative. They point out that while women in tribal society are better off than women in caste society, they are nevertheless exposed to two areas of traditional inequality- in property rights and in political participation. This observation holds true for the tribal women of the Panchmahals. According to the prevailing relations of gender, ownership of land and other productive resources, is vested with the males. At the same time, women's work and responsibilities are primarily confined to the 'private' or domestic domain, whereas participation in village level decision making (the 'public' domain) is considered to be the work of men.

Much has also been written about the structure of Bhil villages. While Bhil villages tend to be dispersed entities, lacking the distinct type of village identity found in nucleated villages, Nath

found that local spatial ties, as within the phaliya or the village, were very important. People of the same village tended to be bound together by bonds of kinship, shared experiences, and a common concern for the dignity and the honour of the village. However, in larger villages, each phaliya or hamlet acted independently of the other, except when they were required to come together as a village for administrative purposes. Similarly, Doshi (1969) noted that **there was no essential difference between a phaliya and a village.** According to him "the phaliya is of the same nature as the village, and if big enough can act independently and become the real unit". Nath observed that in many villages, people of a particular phaliya might have far closer social, economic and ritual relations with the people inhabiting the contiguous territory, even when that was under the jurisdiction of another administrative unit i.e local community ties cut across administrative boundaries. Thus he found that **"the administrative village and the local community were two different concepts which may not necessarily coincide"** in all cases (Nath, 1960).

SECTION II: THE CLUSTERS SELECTED

Two clusters were selected for the purpose of this study to represent the different systems of forest protection and management (Maps 2.3 and 2.4). The clusters selected were:

(a) The Chari Boriya cluster representing a more formalised system, and relatively larger user groups; and
(b) The Vankdi cluster representing a phaliya or small hamlet based system of forest management.

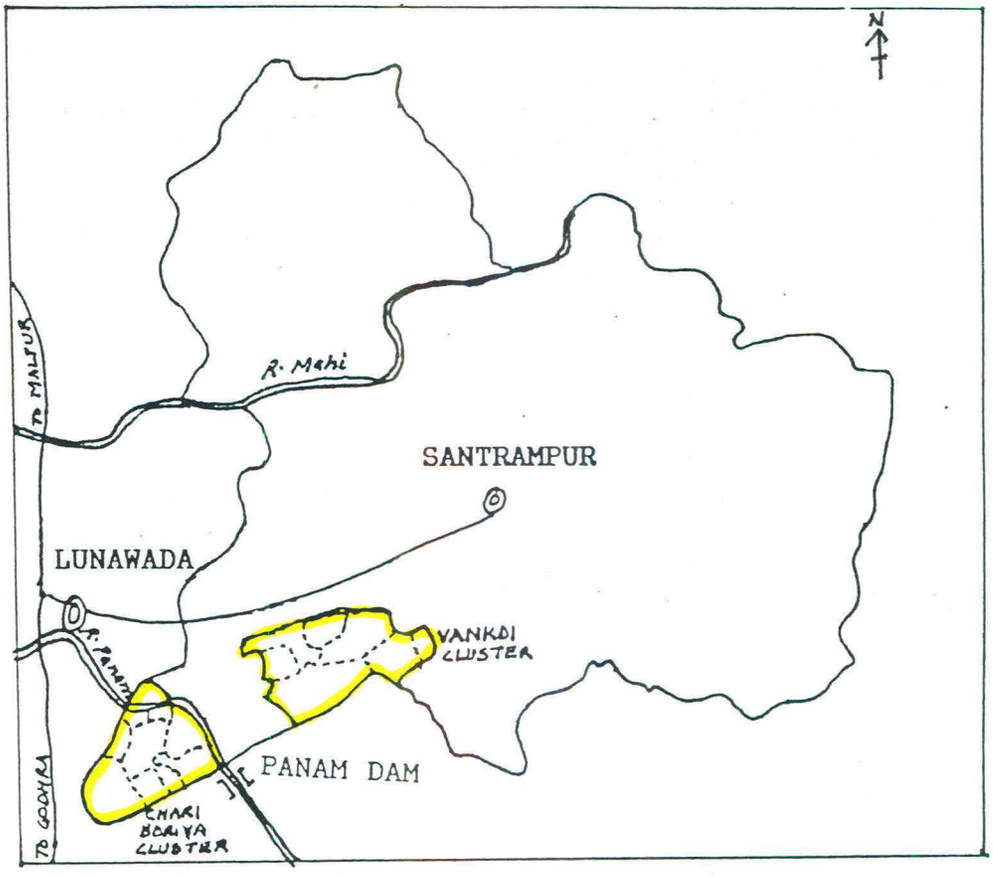
Chari Boriya cluster: What has been referred to as the Chari Boriya cluster has about ten revenue villages under seven gram panchayats. The cluster is located in the south eastern part of the Taluka, near the Panam dam. The villages, located on flat, agricultural lands, are surrounded by a chain of low lying, partially forested hills. This feature in some ways serves to geographically isolate the area. The nearest town is Lunawada, about 18 kms by road.

About half the cultivable land in this cluster is irrigated. This was made possible by the construction of the Panam Dam in the mid seventies. Farmers with irrigated fields usually take three crops a year, and often employ local labour during the busy period. Thus some amount of local employment opportunities have been created. However, since the average size of land holdings is small, between two to three acres, returns from agriculture are usually inadequate. Migration, especially from unirrigated areas, is a common survival mechanism.

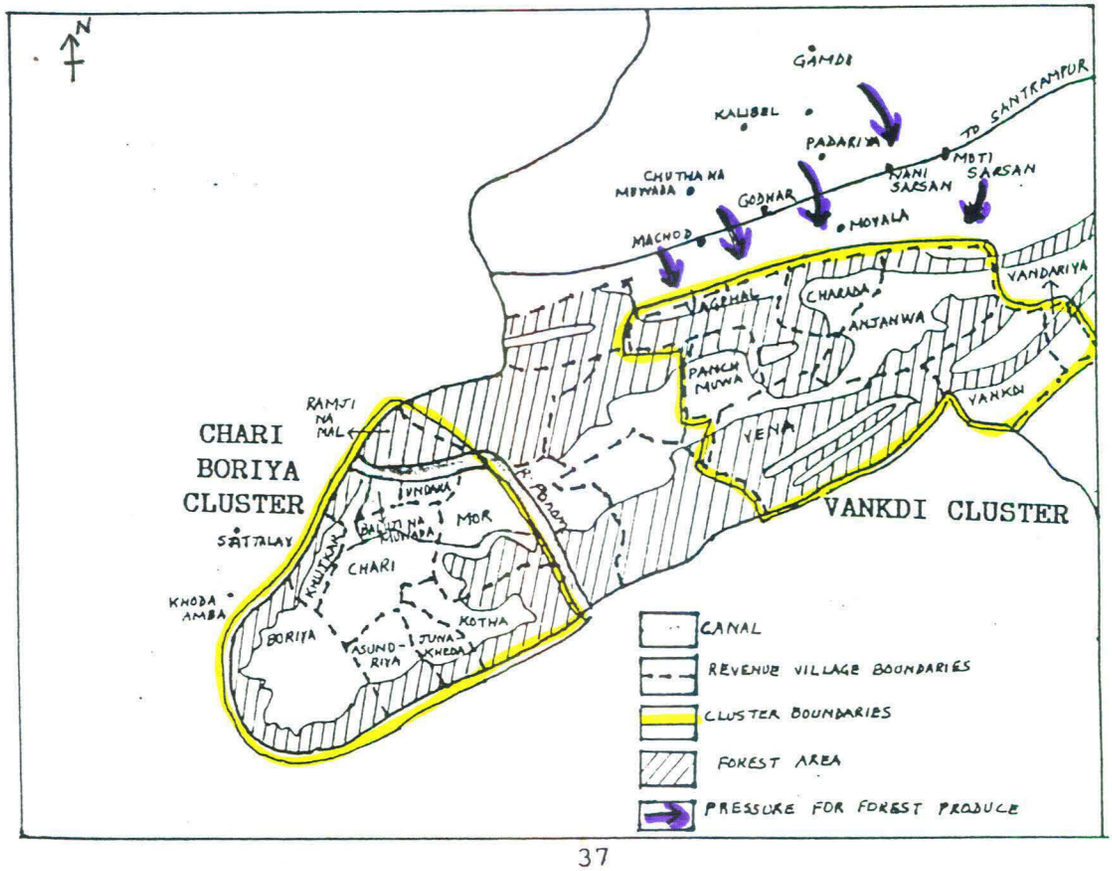
Vankdi Cluster: Seven revenue villages are located in what has been referred to as the Vankdi cluster.The villages of this cluster are located in a much denser forest belt. Phaliya or small hamlet based systems of forest management predominate in the area.

The topography in this area is undulating, with forests confined to the hilly and steeper slopes, and agriculture to the gentler slopes and valleys. The forest vegetation is denser than in the Chari Boriya cluster, with settlements dispersed within large forest expanses.

Map 2.3 : Location of the Two Forest Management Clusters



Map 2.4 : Location of Forests in the Two Clusters



Agriculture is the predominant occupation, though land holdings tend to be small, between two to three acres on an average. Irrigation is mainly through wells, ponds or checkdams. Farmers with access to irrigation are able to cultivate two, and in rare cases, three crops a year. Migration during the agriculturally lean period, is a common feature.

The aerial distance between these clusters is less than ten kms. However, after the construction of the Panam dam in the seventies, no direct road link remains between these two areas. At present the road linking them is via Lunawada, a distance of about 40 kms.

Due to the relative proximity of the two clusters, there are strong socio cultural and economic similarities. Close familial links continue to exist. Interactions during marriages, deaths and other social occasions are therefore quite frequent.

A brief description of the population in these clusters, and the relationship of the various sub groups with the forest resource base follows.

The Population: In both the clusters selected the population consists primarily of the Scheduled Tribes. The Scheduled castes and other non-tribal groups are in a minority. The tribes represented in this area are mainly the Bhils, the Naiks, and to a lesser extent the Rawals, the Kolis and the Patelias. Among the ST's, the Naiks are usually considered lower on the social scale. The Naiks have traditionally been a forest dependent community. Even now they tend to have very small land holdings, and are

dependent primarily on daily wage earnings and on sale of forest produce.

The settlement pattern of the villages is typically dispersed, with houses located near agricultural fields. Each village consists of several phaliyas (hamlets). Phaliyas are often, but not always, peopled by persons of the same 'atak' (clan) or tribal group, and are commonly named after the group which is in the majority, for instance Bariya phaliya, Dodiyar phaliya, Naik phaliya etc.

According to local accounts, settlements first appeared in the area about 120 to 130 years ago. Families of different tribal groups arrived from neighbouring regions, primarily before Independence. Few families have come after Independence. Patrilineal descendants of these original families now tend to live in the same phaliya. For instance, where there were two families at the time of Independence, now there may be 15 or 20.

The point that needs to be noted is that the **population is rooted in a common history. Strong, mutually reinforcing, community ties have been built up over the decades.** The phaliya identity is very strong. At marriages and deaths every member of the phaliya is invited, and most contribute directly to the preparations. For instance all the men of a phaliya usually get together before a marriage and make baj- donas (plates and cups) of khakra (butea monosperma) leaves for the guests. The village identity is also strong. For marriages and other social occasions all families in the village are invited, irrespective of sub group or caste.

Persons from other tribes however do not eat food in the house of a Naik.

Festivals provide an opportunity for all the villagers to congregate. On Diwali all the men of the village gather to celebrate, and to hold a day long meeting to discuss village matters. Similarly, villagers get together for two days of dancing and festivities on Holi. Important village matters are also brought up for discussion. Thus festivals provide an occasion for village people, especially the men, to meet and discuss issues of common concern.

It needs to be kept in mind, however, that the strong 'community ties' referred to earlier, are based on traditionally inequitable relations of class and gender. It is these inequitable relations of power which shape all social, economic and political interactions within the community.

Relevance of Forests in the Local Context : Since the per capita availability of land, especially irrigated land, is low, income from agricultural production by itself is rarely adequate for survival. At the same time, alternative avenues for employment are meagre. Given this scenario, forests continue to be important as supplementary sources of sustenance, nutrition and income, despite the fact that they are in a highly degraded state. Forests remain the most important source of fuelwood for the local population, even if the effort required for fuelwood collection has increased substantially. They also provide fodder, timber and other Non Timber Forest Produce (NTFP) such as timru and gum. Patterns of

dependence on forest produce vary according to sub group (by gender, occupation and class), an aspect which will be explored in detail in the following chapters.

Chapter 3

THE EMERGENCE OF COMMUNITY INITIATIVES IN FOREST MANAGEMENT

From the discussion in the earlier chapter it is evident that there are strong social, economic and cultural similarities between the population of the two clusters selected for closer study. Section 1 of this chapter traces the emergence and current form of the forest management systems evolved in these two clusters. A case study of one user group from each of the two clusters is also presented, to provide a more detailed picture of the dynamics behind the emergence of different systems in specific villages. Section 2 attempts to explore the factors that have contributed to the emergence of community initiatives in forest management in the Taluka, and to discuss the tentative reasons behind the different forms taken by these initiatives.

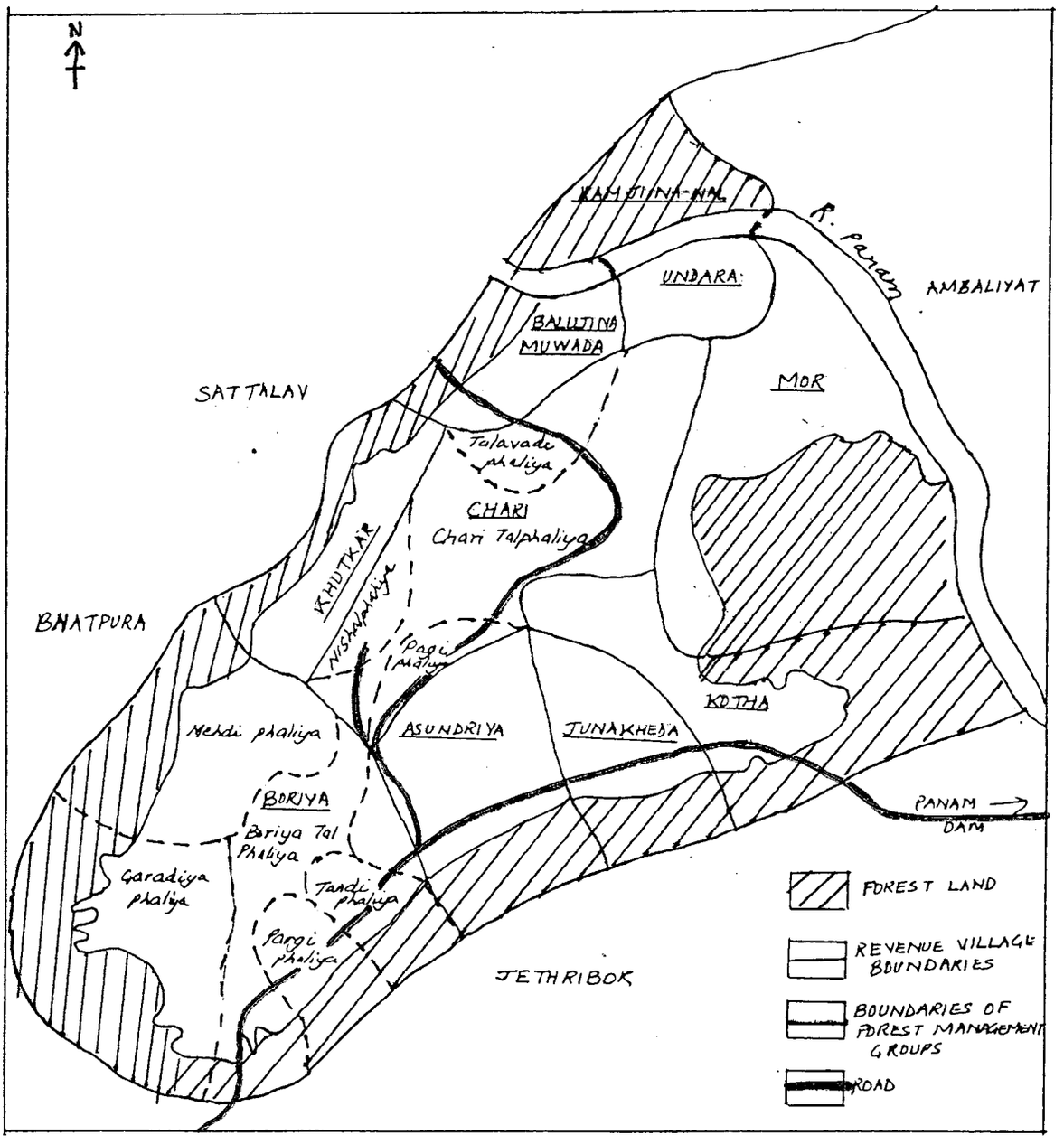
SECTION I: THE EMERGENCE AND THE PRESENT FORM OF THE FOREST MANAGEMENT SYSTEMS IN THE TWO CLUSTERS

Chari Boriya Cluster

The Chari Boriya cluster (Map 3.1) has witnessed the emergence of more formalised systems of forest management over the last decade or so. A brief historical account of the condition of the forest resource, prior to the initiation of protection, is provided.

Local Forest History: The hills in this area were earlier covered by dense forests. During the rajwadi period the forests were directly under the control of the ruler of the Santrampur State i.e. Joravar Singh. The forest area of each village was marked by low stone walls constructed by the state. While firewood and other

Map 3.1 : Chari Boriya Cluster



small forest produce were freely available, passes had to be obtained from Santrampur for timber and construction wood. Fear of the ruler kept illicit felling almost totally in check. People were on call for 'wait' (a system which required local people to work for the ruler whenever required). In village Mor, for instance, the state had instituted a 'varabandi' system for forest protection, and five persons had to take turns at protection, or receive severe punishment. At the same time fear of wild animals, such as lions and tigers, prevented people from enjoying free access to the forests. As an old man from village Anjanwa put it , "we were scared of two tigers, the one in the forest and the one in the palace".

In the Chari Boriya cluster relatively thick forests were evident upto the 1970's, according to local accounts. However, the construction of the Panam dam started around that time. A 'pucca' road was built to the dam site, for the first time allowing access to regular vehicular traffic. Trucks bringing construction material to the dam site returned to town loaded with timber. At the same time, the sound of dynamite blasting at the dam site scared away wild animals, providing easier access to the hitherto inaccessible forest areas. Local people also allege that dam displaced persons carried off freshly cut timber to rehabilitation sites, claiming that it was the old wood that they had been using in their houses. The local population, witnessing the general destruction of their forests before their eyes, also participated in the looting, staking their claims to whatever little they could.

Popular wisdom, that population explosion is the most important cause for the degradation of natural resources, is thus brought into question. While there has been a rapid growth of population in this district, as discussed earlier, prior to the construction of a proper road forests were used primarily for subsistence purposes. Exploitation of the forests without a proper system of transport was not commercially feasible. The construction of the road facilitated a greater exposure to the market economy and to commercial interests, and greatly intensified forest exploitation.

By all accounts the forests were totally degraded by the early eighties. As an old man from Mor village said, "Sitting in my house I could clearly see the rabbits and the peacocks on the bare hills far away". Other people say that nothing except stones had been left on the hills. Two droughts during the eighties (in 1982-83 and 1985-87) only aggravated the situation. As agriculture collapsed many people were forced to sell forest produce to make ends meet. Even roots and stumps were dug out and sold as firewood. Local people faced acute shortages of fuelwood, timber and other forest produce. It is against this background that the emergence of local initiatives on forest protection and management should be seen.

Significantly, while there is evidence of traditional rights of forest usage, there is little evidence of any traditional form of forest management by local people. Literature on natural resource management seems to indicate, that in the not so distant past, control and management of natural resources was vested with local communities. From all accounts it seems that even before independence, the ownership, control and management of forests was

vested with the ruler in this area, and was not formally in the hands of local communities.

Thus, while men and women, especially of the older generation, possess a fund of knowledge about various aspects of forest ecology, species diversity, growth rates and coppicing ability of different species, medicinal and other uses of different trees, shrubs and herbs, few avenues have existed for utilising and building upon this knowledge for forest management, in any systematic manner.

In this context, it needs to be emphasised that the system of forest management that has recently emerged in the area, is not a revival of a traditional management system. Earlier, when forests were more abundant, and needs of local people limited to subsistence requirements, practices related to forest conservation and regeneration was never required. The present system of management has evolved in response to highly changed circumstances, and has neccessitated the development of new areas of knowledge related to forest regeneration and conservation.

The Emergence and Spread of Forest Protection and Management Initiatives: The forest management system unique to the Chari Boriya area is said to have been evolved by the villagers of either Baluji na Muwada or Undara. The account provided by the people of these two villages differs.

According to the people of **Baluji na Muwada** the system was first initiated by a former 'police patel'[1] of their village, a Naik called Nanabhai. It is claimed that the forests of this village started disappearing as early as 1967 (prior to the construction of the Panam dam in the early and mid seventies), primarily because the 'kuccha' truck road to Lunawada ran through Baluji na Muwada. A contract for forest felling, given to a contractor from Godhra by the forest department, is said to have been responsible for a major part of the forest destruction during this period. A part of the degradation was also due to the charcoal making activities of the forest dependent Naik community.

To counter this disturbing state of affairs a village meeting was called in the late sixties, and was presided over by Nanabhai and the then 'police patel' from Bariya phaliya. According to reports, at this meeting Nanabhai demanded one kilogram of grain towards protection from each household. It appears that he then appointed himself as the chowkidar, and continued in that capacity for about six years, in the period prior to the construction of the Panam dam. Forest offenses by local people and by outsiders came down dramatically, since he took to calling in the mobile squad (the unit sent by the Forest Department to catch offenders) every time an offence was brought to his notice.

---

[1]. This system was initiated by the British to maintain law and order within each village, and was continued even after independence till the eighties. The police patel is usually a respected and influential member of the community. Despite the fact that the system has been abandoned, the former police patel continues to wield some authority in the village.

At the time of dam construction, forest destruction began again. Every attempt was made by Nanabhai to check this. It appears that he even called the CF (Conservator Forests) personally on the phone and threatened to destroy himself if the destruction of forests continued. The mobile squad was despatched immediately at his request. Local people who had also participated in the illicit felling of the forests, were caught and charged substantial fines, to the extent that some families had been forced to sell off even their jewellery to pay the fines thus imposed.

The cutting by internal and external agents however continued unabated. After this state of affairs had persisted for a couple of years another village meeting was called in the mid seventies. Nanabhai reportedly demanded two and a half kg of grain, plus one rupee to purchase an umbrella, from each household. Protection was resumed in the late seventies. Gradually the number of village chowkidars was increased by the village community and the present form of management emerged.

According to people of Undara on the other hand, forest protection was first initiated by their village. In the early eighties, as the villagers met on Dusshera (a local festival), the degraded state of the forests was discussed. Bikabhai, a Bhil, challenged the others that the forests could still be regenerated if the villagers were to lend their full support. Though sceptical, the rest of the men present at the village meeting agreed to the proposition. Four persons were appointed as chowkidars. The villagers gave them full authority to take action against anybody found stealing from the forests. It is claimed that it was only due to the diligence of the

chowkidars that the forests of the Undara user group are today some of the best in the area. The system of giving grain to the chowkidars emerged in lieu of money wages. Payment in kind has traditionally been an accepted practice in the area.

Thus the emergence of forest management in this area was facilitated by the presence of locally respected and inspired leadership. While in Undara the decision to begin protection appears to have been taken and implemented in a relatively democratic manner, in Baluji na Muwada the protection system seems to have been instituted by a 'benevolent, authoritarian' leader.

Anyhow, once this system of forest protection was evolved in this area, a chain reaction was set off. People from nearby villages, finding that they were being denied access to the protected forests, began to evolve similar systems in their own villages. For instance, the residents of village Khutkar began to think of protection, when some of the men from their village were denied the right to roofing material from the better stocked Baluji forests. Similarly when both Asundriya and Kotha closed off their forests, the residents of village Junakheda, which lies in between these two villages, were forced to get their act together. At present, similar protection systems are evident in Asundriya, several phaliyas of village Boriya, Undara, Ram ji na Nal, Kotha, Khutkar, Mor, and to a lesser extent in Junakheda.

It would seem, therefore, that in this area forest management was undertaken by a relatively larger user group, often involving members from two to three villages, right from the start. The only

exception is village Asundriya, where one phaliya (Damor Phaliya) initiated protection of a forest patch before the rest of the village. Later, Damor phaliya had to be persuaded to give up its exclusive claim to this patch, and to join the larger group. This phaliya however, continues to create problems to this day, by demanding a greater share of forest produce. At present, it is threatening to break away from the rest of the group, and stake its independent claim on the forest patch that it had earlier been protecting.

Features of the Forest Management System: The system of forest management evolved by the residents of this area, has gradually crystallised. More or less similar forms of management have been adopted by adjacent villages. The rules differ marginally, being more stringent in groups which have a more degraded forest resource base.

Typically, after a decision to begin protection is taken at a meeting, in which all the male members of the participating phaliyas are present, the forest area identified as belonging to a particular group, is closed off. Chowkidars, representing the different phaliyas that are part of the group, are appointed. The group members agree to pay the chowkidars at the rate of five to ten kgs of grain per household per annum.

If the extent of degradation is acute even grazing is prohibited for the first couple of years, to allow for regeneration. Grazing of cattle (not goats) is then permitted. Fuelwood cutting is often

regulated, and limited to about two to five days a year[2] (locally referred to as 'chutti' days). It is carried out under the close supervision of the watchmen. For the rest of the year most groups prohibit members from carrying tools which can cause damage to trees, into the forests. Cutting of teak and some other species, such as timru and khakra, identified as important by the group, is strictly prohibited. Timber requirements of a group member are usually discussed in a meeting, and legitimate requirements are sanctioned.

Entry of any person not belonging to the group, is forbidden. If a person is caught violating the rules framed by the group, the watchman usually confiscates both the tools and the stolen wood. Village agyavans then meet to decide further action. In some cases the offenders are handed over to the Forest Department.

It is evident then, that **significant costs are borne by group members in forest protection and management.** These include direct costs, such as payment of grain to chowkidars, and indirect costs, such as the costs of coordination, monitoring, foregoing immediate consumption from the 'protected' patches, etc.

It needs to be noted that the forest management groups have not crystallized according to revenue village boundaries. The process of group formation has been and continues to be dynamic. Traditional user rights to a given forest area have often determined group boundaries. Thus, user groups sometimes cut across

---

[2]. In village Asundriya, however, no fuelwood cutting was permitted for four years after protection was initiated, since the initial condition of the forest had been highly degraded.

not only revenue village, but even panchayat boundaries. This amply demonstrates that user group boundaries do not always coincide with the boundaries of any administrative unit.

Significantly, none of the groups are interested in raising income from the forests through clear felling operations. Their primary objective in protecting the forests is to provide for their ongoing needs for timber, fuelwood, fodder and other forest produce, in a sustainable manner. This is reflected in the management system adopted by them.

Leadership and Participation in Decision Making : The traditional leadership structure is very much in evidence in the genesis and continuance of these groups. Traditionally, each phaliya has an 'agyavan' or headman (often a hereditary position), who represents the phaliya at the village level. Though all decisions on village matters are taken in meetings attended by all adult males in the village, in a relatively democratic manner, the 'agyavans' play a more important role in decision making. Such meetings are usually held on Holi and Diwali.

The 'agyavans' enjoy great authority and prestige. Few decisions can be taken without their consent. They play a crucial role in defining and enforcing social norms, and in resolving village conflicts. An informal code prevails, which ensures that all households adhere to the social norms set by village agyavans. All 'deviant' and 'undesirable' behaviour meets with social sanction.

In none of these groups has the panchayat, or the representative of any political party, played an important role. Where panchayat members participate, they do so in their capacity as village agyavans.

Existing gender relations define participation in formal decision making, as the domain of men. Women are never invited for any village level deliberations, except when they themselves are part of a conflict. They are usually seen as ignorant and uneducated. Participation in such meetings is seen as 'men's work'. Women are expected to stay home and work in the fields or in the house. It is assumed that the males convey to the women decisions taken at the village meetings, in particular those decisions which women are expected to conform to.

While some men agree that women's participation in forest management is important, it is primarily because they believe that "bairi aur bakri, jungle ke dushman hain" (women and goats are the forests' worst enemies). Women should be 'taught' not to destroy the forests according to this line of thinking. This more or less defines the boundaries of women's participation according to male perception, and casts women more firmly in the role of offenders and thieves.

Sub Groups Without access to Forests: In the process of group formation, those villages or phaliyas which are not close to any forest area, and have traditionally not enjoyed any clear access rights to a given forest area, have suffered. As group after group has closed off its forest area, the deprived sub groups are forced

to meet their forest related needs from the remaining open access forests of distant villages. Forest related conflicts have been aggravated.

Some phaliyas have managed to negotiate access to a forest management group, by agreeing to contribute the backlog of the chowkidars salary. Forest Management groups accept new phaliyas primarily when they are seen as a threat to forest protection. It is felt that if access is denied, stealing and illicit felling may reduce the forests to their previous barrenness. Under the circumstances, only a few phaliyas without membership to a forest management group remain, for instance Sarpanch phaliya of Junakheda. According to informed sources, however, even this group was allowed to cut firewood last year from the forests of the Kotha group, after payment of Rs 25 to Rs 50 per family to the Kotha committee. Some phaliyas like Chari Tal phaliya and Boriya Tal phaliya have not however been so fortunate. The situation faced by one such 'deprived' phaliya is as follows.

Chari Talphaliya: This is the only phaliya in village Chari which has not been included in any forest management group. All the other phaliyas have managed to negotiate access to some forest management group or the other. For instance, Talavadi phaliya had joined the Khokarwa/ Baluji group, Nishal phaliya had joined the Khutkar group and Pagi phaliya has joined the Asundriya group.

For the women of Chari Talphaliya getting even firewood has become very difficult, since all the neighbouring forests have been closed off. They are forced to use cowdung, agricultural residues or wood

from their own trees, to meet their needs for fuelwood. Some families have resorted to buying wood.

The men have been trying in vain to negotiate access to a forest management group. They have already approached the groups of Asundriya, Mor and Kotha, but have been denied access by all. It appears that these groups claimed that their forests were inadequately stocked, and unable to meet the needs of even existing group members. This phaliya then continues to suffer, even though its members are prepared to pay the backlog of the chowkidars wages and to abide by the rules of any group which allows them access.

'Weak' Groups: Not all the groups involved in Forest management have been equally successful. Some groups have not managed to regulate forest users. Such groups include Junakheda, Boriya Tandi phaliya, Sattalav and a few others. The primary reason for their failure in doing so, seems to be factionalism within the village. The forests of these groups stand out in sharp contrast to those of their neighbours- the vegetation is markedly sparser. Such 'weak' groups pose an ongoing threat to the forests of the better functioning groups. Forest offenses by members of these 'weak' groups are frequent, so that an entire village sometimes is labelled as consisting of thieves.

The Forest Department: According to local people the role of the Forest Department, in facilitating the emergence of community based forest management, has been negligible. It is claimed that local people took the initiative into their own hands once it was realized that the Forest Department staff were not only neglecting

their duties, but were in fact facilitating illicit felling. Relationship of the forest management groups with the Forest Department staff is therefore, in most cases, strained.

Recent Developments: That forest management groups have emerged in the area, was first identified by a local NGO, Sarthi, working in the Santrampur Taluka of Panchmahals District, in 1992. The organisation has since been trying to understand the functioning of these groups, and to support, strengthen and democratise their functioning. It has also been exploring how the Gujarat JFM scheme should be modified to accommodate such self initiated forest management groups, rather than how such groups should be fitted into the scheme.

Complex dynamics have been set off by these recent 'outside' interventions. Sarthi has been pushing for an official recognition of the efforts of these groups, and of their right to produce from the forests protected by them. It has therefore forwarded applications to the Forest Department on behalf of the groups, requesting that they be allowed to officially participate in forest management under JFM. It has simultaneously been bringing the issues raised by these groups about lacunae in the JFM GR, to the attention of policy makers.

Critical issues related to the JFM resolution have been raised by the forest management groups in this cluster. These center around the right of villagers to organises themselves, to choose their own leadership, and to determine forest management priorities themselves (Sarin, 1994). They have also demanded that the rights

of villagers to impose sanctions on offenders, be recognised. Representatives of these groups arrived at these demands after a study of the JFM GR, and the conditionalities specified in this. Very recently (March 1995) the groups in the Chari Boriya area have united under an umbrella organisation, to better protect their own interests.

While the Gujarat Forest Department has expressed its support of JFM in theory, there is still some apprehension about the feasibility of devolving power to local communities, for fear that such powers will be misused. Given this background, the applications and the demands forwarded by these groups, were also regarded with some suspicion. Beat guards and foresters were instructed to check the veracity of the groups in the Chari Boriya area. This only fostered factionalism and tension within the groups, since the Forest Department staff primarily contacted those subgroups which have not participated actively in forest management, to establish that the groups are in fact non representative and exist only on paper. However, these attempts by the Forest Department have fortunately not had very negative consequences. In a meeting organised by representatives of these groups with the RFO in October 1994, these issues were cleared. At another meeting held in March 1995 the DFO promised to give recognition to the stronger groups under the JFM scheme, after due verification of their authenticity and representativeness.

However, it appears that the Forest Department, rather than allotting these forest management groups the forest land that they have protected and successfully regenerated, is now in the process

of allotting them 'degraded' forest land, often located at some distance from the user group. This apparently is in keeping with the Gujarat JFM resolution which allows for the allotment of only degraded[3] forest land to village organisations. There is no provision for retrospective recognition of villagers prior efforts at forest protection.

It is evident that the JFM resolution, in its current form, lacks both the flexibility and sensitivity required to nurture and strengthen such community based initiatives in forest management.

Case Study of the Khutkar User Group

A case study of the Khutkar user group in the Chari Boriya cluster is presented, to provide greater detail about the dynamics behind the evolution of the forest management system in a specific village. The Khutkar user group[4] at present consists of village Khutkar and a phaliya of village Chari i.e Chari Nishalphaliya (Map 3.2). Some basic information obtained from a household survey of the group is presented in Tables 3.1 and 3.2.

---

[3].Since the user groups in the Chari Boriya area have been protecting their forests for the past decade or so, their forests no longer qualify as degraded.

[4]. One of the reasons behind choosing the Khutkar user group for closer analysis was also that it has allowed access to the phaliya of another village. The dynamics behind access negotiation are then better brought out.

Table 3.1: Salient Information about Village Khutkar

Tribe	Num of Fam	Num of Persons	Land holding Irr	Land holding Unirr	Av. LH	Av. GCA	Num. Mig	Num. W.Lab	Num. Jobs	Num. S.Emp
BHILS	34	238	107.49	53.23	4.73	11.05	11	11	7	4
PATELIA	3	19	4.00	9.50	4.50	7.17	0	1	0	0
NAIK	31	203	5.00	25.75	0.99	1.31	27	8	3	2
TOTAL	68	460	116.49	88.48	3.03	6.45	38	20	10	6

Source: Household survey

Table 3.2: Salient Information about Chari Nishalphalya

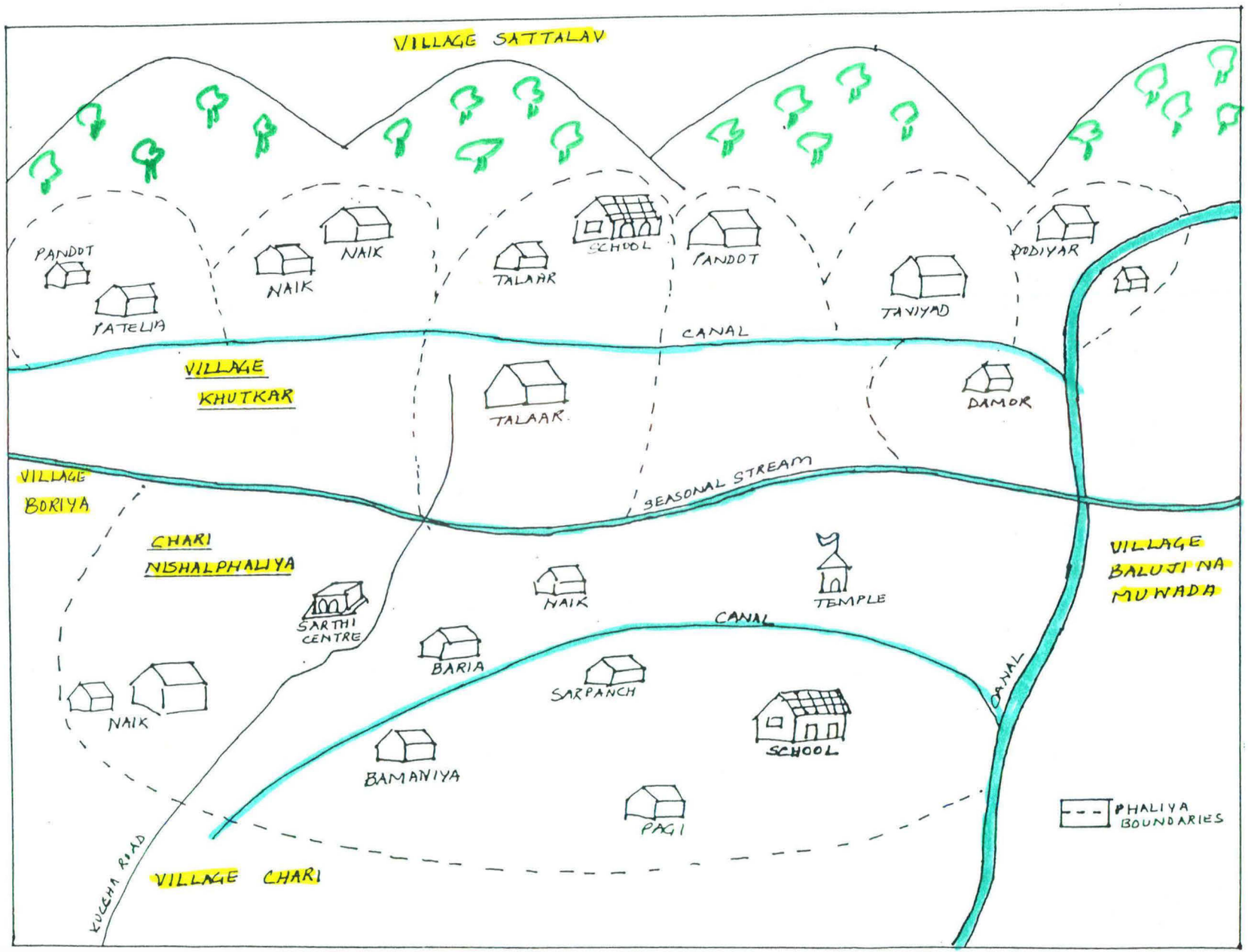
Tribe	Num of Fam	Num of Persons	Land holding Irr	Land holding Unirr	Av. LH	Av. GCA	Num. Mig	Num. W.Lab	Num. Jobs	Num. S.Emp
NAIK	23	199	8.20	34.40	1.85	2.56	15	9	4	2
BHILS	21	134	38.01	46.25	4.01	7.63	2	7	4	5
TOTAL	44	333	46.21	80.65	2.88	4.98	17	16	8	7

Notes
AV LH : Average Size of landholding (in acres)
AV GCA : Average Gross Cropped Area (in acres)
NUM. MIG : Number of families migrating regularly
NUM. WG.LAB: Number of families doing daily wage labour work within the village
NUM. JOB : Number of families with job holding members
NUM. S.EMP : Number of families with a business, or some other means of self employment
Source : Household survey

Several facts are evident from the above tables. Only a small proportion of the families have members either with jobs or with other means of self employment. A majority of the families are dependent on agriculture for their survival. It is also evident that migration and daily wage labour work within the village, are commonly adopted survival strategies. The extent of migration is higher in Khutkar, with almost 56 per cent of the families migrating on a regular basis. Migration is lower in Chari Nishalphaliya.

The Naiks are seen to constitute almost half the population of the user group. It can also be observed that they are economically the

Map 3.2 : Khutkar User Group



most depressed section. They own little land, and only a minority of Naik families have access to irrigation. Migration is seen to be the highest among the Naiks.

Farmers of the Khutkar user group were classified according to gross cropped area (GCA) available to them. This is shown in the following Table.

Table 3.3: Classification of Farmers of the Khutkar User Group According to GCA (in percentages)

	Marginal (<2.5 a)	Small (2.51 - 5.00a)	Medium (5.01 - 10.00a)	Large (>10.01a)
KHUTKAR (68)	47.1	30.9	13.2	8.8
CHARI NP (44)	38.6	29.5	20.4	11.4

Note: Figures in brackets indicate the total number of farmers in Khutkar and Chari NP.
Source: Household Survey

It is evident that a majority of the farmers in the group are in the small or marginal farmer category. Even in the marginal farmer category, a large proportion of farmers have less than one acre GCA available to them. In Khutkar the proportion of farmers owning less than one acre is 22 per cent, while the corresponding proportion is 13.6 per cent in Chari Nishalphaliya. The incidence of landlessness, however, is almost negligible. Only one family has been recorded as landless in the Khutkar group. Given this scenario, it can be inferred that most of the families in the user group need alternative supplementary means of income, other than agriculture.

Khutkar Forests: The total forest area that falls within the revenue boundaries of village Khutkar is 82.76 ha. The per capita availability of forest land for the Khutkar user group therefore works out to 0.10 ha.

The Khutkar forests are surrounded by the forests of Baluji na Muwada on the east, Boriya on the west and Sattalav on the north (See Figure 3.1). Baluji na Muwada was one of the first villages in the area to start protection. While Boriya and Khutkar have since adopted similar forest management systems, the forests of Sattalav continue largely as open access resources. Protection in Sattalav has been initiated only in some patches.

How protection started: The forests of Khutkar were degraded in much the same manner as those in the surrounding areas, and due to similar reasons (discussed earlier). Protection was first initiated in the mid eighties by a few houses in Taviyad phaliya, at the instance of a woman, Moti ben, and her husband Sukha bhai. However these efforts were limited and remained confined to a few houses in Taviyad phaliya.

The adoption of a forest management system by the entire village appears to have been facilitated by a particular incident, in which men from Khutkar were caught and abused by the chowkidars of the Baluji na Muwada group, while they were collecting poles for roofing from the better stocked Baluji forests. This was taken as an insult to the dignity of the whole village. It forced the people of Khutkar to think seriously about forest protection.

The entire village made a commitment to initiate protection at a village meeting held after Diwali at the Bhati ji ka Juna Mandir sometime around 1988. The proposition to begin protection was placed by a village leader, Surinder Singh Rathore[5], before the general body. All the villagers present, including the other 'agyavans', supported the proposition.

After this meeting five chowkidars were appointed. It was agreed that the chowkidars would be paid five kgs of grain per annum per family. The amount has later been increased to 10 kgs per family per annum[6].

Rules: After protection was initiated, forest usage was controlled, and certain rules and regulations were agreed upon. These rules have, however, been modified, as when required. For instance, while grazing was forbidden in the initial years, it is now permitted, since considerable regeneration has already taken place.

At present, fuelwood cutting is permitted for only one or two days per year on Holi and Dhuleti ('chutti' days). Five persons from

---

[5]. Surinder Singh, a school master in a nearby town, is one of the respected leaders in the village. He has also been active in trying to bring about social reforms such as abolishing the practice of bride price, cutting down unnecessary expenses on birth and death ceremonies, reducing the consumption of alcohol etc. He therefore tends to be a figure of moral, spiritual and economic authority within the village. It is significant that he and his brother, the patwari are the biggest landholders in the village. Between them they own almost 37 percent of the total agricultural land in village Khutkar.

[6]. Given that a kg. of grain costs approximately four rupees, in money terms the total payment being made to the five chowkidars when each family contributes ten kgs of grain, works out to Rupees 4,480. Each chowkidar then receives about Rupees 900 per annum.

each family are allowed to take away as much fuelwood as they can cut in one day. Cutting of teak, and to some extent of timru and khakra, is totally prohibited. Cutting for fuelwood takes place under the supervision of the watchmen and members of the committee. A list of those who have given the agreed annual amount of grain to the chowkidar is maintained. Only such persons are allowed access to fuelwood and other forest produce. For the rest of the year, people are not allowed to enter the forest with any tools which can cause damage to the trees.

Group members are allowed access to all other NTFP's such as timru patta, khakra leaves, dhawra gond etc. In the case of timber, genuine requirements of group members are sanctioned, after due consideration by the village committee[7]. Such decisions are usually taken during village meetings, held on the 10th of every month, to discuss forest management issues.

The Forest Dept: The villagers claim that they have had no support from the Forest Department. In fact, any offenders handed over to the Forest Department by the watchmen, have not been punished. Instead group members have been harassed unnecessarily by the Forest Department staff. However, the relationship with the present beat guard is more cordial, since there is little interference by him in the efforts of the group towards forest protection and management.

---

[7]. For instance, five persons belonging to the poorer sections of the Naik community have so far been given permission to take teak poles for roofing purposes.

Negotiating Access: While Khutkar started protection about six years ago, Chari Nishalphaliya (a phaliya of the adjoining village of Chari) joined the group about four years back. Several incidents seem to have prompted the merger of Chari Nishalphaliya with the Khutkar group. For instance, during the Holi festival prior to the merger, residents of Chari Nishalphaliya had not been allowed to collect firewood for the ritual Holi fire, by any of the forest management groups in the area. They had consequently been forced to collect the fuelwood from their private lands.

Another important triggering event seems to have emanated from women's ongoing need for fuelwood. Three women from Chari Nishalphaliya were caught by the Khutkar chowkidars on three successive days, while they were fetching fuelwood. They were accused of stealing and the wood was confiscated. These women also happened to be the wives of local 'agyavans'. A few days later two women from Naikphaliya of Chari Nishalphaliya were also similarly caught while getting dry wood. This led to a showdown between the mother-in-law of the two women caught, a woman 'agyavan' of sorts among the Naiks, and a chowkidar of the Khutkar group. It is reported that the chowkidar was soundly slapped and abused during the course of the argument.

These incidents forced the people of Khutkar and Chari Nishalphaliya to decide on a course of action. A meeting was held in Khutkar at this juncture to discuss the incident and to consider Chari Nishalphaliyas request for inclusion. Chari Nishalphaliya had earlier made a request for inclusion to the Baluji na Muwada group. They were, however, denied access during a large village meeting.

This was taken as an insult by the entire phaliya. It was only then that Chari Nishalphaliya approached the agyavans of the Khutkar group. Since the Khutkar forests are closer to Chari Nishalphaliya, and the phaliya had, in any case, enjoyed the right to collect mahuwa flowers from the Khutkar forests even during rajwadi times, their request for inclusion could not be treated lightly.

It appears that the representatives of Chari Nishalphaliya, while requesting access to the Khutkar forests, at the same time also emphasized that if their phaliya was denied access, they would resort to stealing and illicit felling. The Khutkar agyavans realised the real danger that this veiled threat presented. While most people from Khutkar were not willing to allow access to Chari Nishalphaliya, the agyavans succeeded in convincing them of the wisdom in doing so.

It was agreed that Chari Nishalphaliya would pay half the backlog of the chowkidars wages- only half because the phaliya had not taken any benefits from the forests in the previous years. It was agreed that Chari Nishalphaliya would enjoy the same benefits[8] from the forests that were available to the people of Khutkar.

Crisis periods: Recently, in 1994, in an attempt to regulate the cutting of fuelwood on 'chutti' day, the Khutkar group had decided to allot a forest area and a specific date to each of the five main

---

[8]. Obviously Taviyad Phaliya of Khutkar is still not very comfortable with this. In Taviyad Phaliya we were told that Chari NP had been asked to pay the backlog of two years grain to the chowkidar, and had been permitted access to only `kada' (a fuelwood species) for firewood on the `chutti' day, and not to tomber.

phaliyas of Khutkar and Chari Nishalphaliya. Information about this was conveyed to phaliya 'agyavans', who were supposed to inform the members of their respective phaliyas. On the first four days the phaliyas of Khutkar cut fuelwood without any mishap. However, it appears that the agyavans of Chari Nishalphaliya were either not informed of this decision, or they neglected to inform their phaliya persons, who therefore did not turn up on the fifth day, i.e the day allotted to Chari Nishalphaliya. On the seventh day some of the residents of Chari Nishalphaliya realised that they had lost out on their entitlement to fuelwood. Five women from the Bariya phaliya of Chari Nishalphaliya then went to cut their legitimate share of fuelwood. However, they were stopped when the chowkidar found them to be cutting even teak. Further cutting was suspended with immediate effect, and all the wood cut by them was confiscated and donated to the school. The above incident left many in Chari Nishalphaliya feeling rather agitated and cheated.

A few months later (i.e. in August 1994), two of the chowkidars of the Khutkar group were found to be indulging in the illicit felling and sale of timber. The chowkidars belonged to Talaar phaliya of Khutkar, and were found stealing from the area near Taviyad phaliya. This incident sent shock waves throughout the group, and almost succeeded in splintering it. Taviyad phaliya contemplated breaking away from the Khutkar group. Chari Nishalphaliya, already disillusioned after the 'chutti' incident, felt even more convinced that their phaliya was not being given its due, and that people from Khutkar were enjoying all the benefits from the forest using unfair means.

Fortunately, measures to regain the trust of the different actors in the group were immediately taken. At a meeting attended by representatives from each phaliya in the group, two of the chowkidars found to be stealing were dismissed. Three new chowkidars were appointed in their place. At the same time, instructions were issued to the chowkidars to catch all forest offenders, and to hand them over either to the forest arbitration committee appointed by the group, or to the Forest department. An arbitration committee to resolve forest related conflicts was appointed, with representatives from all phaliyas. Fines for all future forest offenses, especially relating to the felling of teak, were fixed. This meeting seems to have succeeded in restoring the trust of all the sub groups concerned, and in averting a major crisis.

The above account highlights the importance of efficient and rapid mechanisms of conflict resolution, also perceived as fair by the rest of the user group. In the absence of such mechanisms, it is likely that even a lush well protected forest can be reduced to barrenness overnight.

Decision Making and the Role of Women: As mentioned earlier, traditionally, all decision making has been considered the domain of men. On the suggestion of Sarthi (a local NGO), the new committee appointed by the group in May 1994, consists of eleven men and eleven women. This has helped facilitate a marginally greater participation of women in group meetings, especially in comparison to the earlier scenario where women were never even invited to such meetings.

Though the women of the Khutkar group have, in the past, been denied a role in formal decision making, they have on no account remained passive spectators. In fact they have played a rather vital role in initiating and shaping the system of forest management. As mentioned earlier, in Khutkar it was a woman, Moti ben of Taviyad phaliya, who first motivated the people of her phaliya to begin protection. Similarly, it was the spirit shown by the women of Chari Nishalphaliya, when they were caught and abused by the chowkidars of the Khutkar group, which prompted the men of their phaliya to negotiate access to the Khutkar group.

That the problem of fuelwood and fodder faced by women on a regular basis remains inadequately addressed, is resented by them. Since women have not, till recently, been provided the space to express their views openly, or to incorporate their priorities in the management system adopted, this resentment often takes the form of stealing from the protected forests. The substantial number of conflicts between group chowkidars and women 'offenders' bears witness to this.

The Vankdi Cluster:

The hamlet based system of forest protection is very much in evidence in the villages of the Vankdi cluster. A brief historical account of the forests in this area is provided, to provide the background for the evolution of forest management initiatives.

Forest History: The forests in the Vankdi area have a similar history to the forests in the Chari Boriya area. These too were the domain of the ruler of the Santrampur State. Though there was only

one guard in this entire forest stretch during the rajwadi period, fear of the ruler was effective in checking forest destruction. Cutting of trees was strictly controlled, and passes had to be obtained to cut any good timber species.

According to local people the forests were cut atleast once, and perhaps twice during the rajwadi period. People claim that the pace of forest destruction has increased after Independence. Most forests in the valleys have been cleared legally, or illegally, for agriculture. People report that the destruction in the surrounding villages (outside this cluster) has been far greater since the forests there were located on flat or gently sloping land, suitable for agriculture. Even in the Vankdi area, it has been largely the forests on the steeper slopes that have remained, while those on the gentler slopes have been converted to agricultural fields. Forest felling by the Forest Department has also accounted for part of the deforestation.

From all accounts the forest cover today is sparse in comparison with the situation at the time of Independence. It is reported that forest cutting accelerates during the frequent droughts faced in the area. (In the eighties itself there have been two severe periods of drought). However, though the vegetation has reduced considerably, the forests have never been reduced to total barrenness, as have the forests of the Chari Boriya cluster. Availability of timber, of fuelwood, and of NTFP's has gone down, but these products have not become totally inaccessible. For instance, even now a minimum of twenty types of Non Timber Forest Produce (NTFP) of commercial importance are available and utilised

by people in the Charada area. These include gum from the dhawra, moona, gadiyari,gugal and kaledi; leaves of timru, jhinjhwi, khakra etc; fruits such as jamun, sitaphal and timru; honey; aval leaves; flowers and seeds of the mahuwa tree; seeds of kanjdi, neem and puwad; and several other produce.

Since most of the villages outside this cluster have little or no forests left, the pressure on the forests in the Vankdi cluster has increased greatly. The pressure is primarily from the surrounding villages of Godhar, Machod, Kalibel, Padariya, Gamdi, Chutha na Muwada, Sarsan etc. People from these villages often have to walk from three to six kms to reach the forests in the Vankdi area.

Emergence of the Phaliya Based System of Forest Management, and its Current Form: It appears as if protection was initiated by different phaliyas at different periods, even within the same village. Some families or phaliyas have been protecting the forests adjacent to their agricultural fields for over a decade if not more. Most protection efforts, however, seem to be of more recent origin, initiated in the late eighties. The drought years (1984-87) had seen the reckless destruction of forests, and people had been exposed to an acute shortage of forest produce, especially of green fodder. It is claimed that the Forester at that time (R. P. Damor) also played an important role in motivating people to begin protection. He is said to have held many village meetings to encourage people, assuring them that they would be the first to benefit if they succeeded in regenerating the forests. Many of the phaliyas began protection at that time. Phaliyas which had already

initiated protection, increased and systematised their efforts under Damor's guidance.

Despite the increase in the number of phaliyas taking to forest management, large parts of the forests in this cluster remain unprotected. For instance, it is unlikely that of the 212.4 ha of forest land in village Vagphal, more than one fourth is under protection. The situation is similar in all the other villages. It appears that phaliyas identify forest patches in the vicinity that can feasibly be protected by them, and that are adequate for meeting the needs of phaliya members for forest produce. The rest of the forest area continues as an open access resource.

The protection system is informal, and is based on the social recognition of the claim of a particular phaliya on a particular patch of forest area. No 'outsider' is allowed access to fuelwood, timber etc from the 'protected' patch. However timru and khakra leaves, sitaphal etc. can be freely collected. The basic idea seems to be the prevention of any cutting which can prove detrimental to the health of the trees.

Protection of these patches has by no means been easy according to local people. Persons caught while stealing, abuse them, and question their claims to forest land. A woman from Vena Charelphaliya mentioned that she always had to be on the alert, and run to the forest everytime she heard anything suspicious. According to her **the protection role is mainly shouldered by women since they are usually in the house.** Men, on the other hand, are frequently away.

The phaliya based protection system has prompted the emergence of a very unique feature, where degradation is most acute not in inhabited areas, but in those areas where there is no habitation and thus nobody to protect the adjacent forest area.

It is significant, however, that protection has not been undertaken by all the phaliyas in any of these villages. The forests near some phaliyas continue as degraded open access resources. Residents of these phaliyas pose a constant threat, since they attempt to meet their needs from the 'protected' forest patches. In village Vena, for instance, people from Pagi phaliya have not initiated protection of the forests near their phaliya. Villagers claim that this phaliya commits the maximum forest offenses, destroying the 'protected' forests of other phaliyas.

Recent Developments: The existence of the phaliya based system of forest management was first noticed by Sarthi (an NGO) in 1992. Sarthi has since been organising meetings in such villages where this system is in evidence. The basic objective of these meetings is to encourage villagers to systematize their forest management efforts, to make it village rather than phaliya based, and to increase the forest area under protection. It has also been informing people of the benefits that can be derived from the JFM scheme.

Several villages, such as Anjanwa and Vagphal, are actively considering the adoption of a village based system of forest management. Village Charada claims to have already adopted such a system. If a village based system is effectively adopted even by

the neighbouring villages, the impact on those far off villages which currently depend on the forests of the Vankdi cluster, is likely to be great. It is likely that such actions will trigger of a chain reaction in surrounding villages. But that remains to be seen.

Several issues seem to be hindering the group formation process. While phaliyas which have been protecting their forests from before find it difficult to trust those whom they perceive as forest offenders, the latter find it difficult to believe that under a village based system the 'protecting' phaliyas will forfeit their proprietary rights to the forest patches they have been protecting for several years, and share the produce from it with the rest of the village.

Case Study of Village Charada:

A case study of Charada (Map 3.3), a village in the Vankdi cluster, is presented, to better describe the dynamics underlying the evolution and present form of the phaliya based system in a specific village. Some basic information about Charada, obtained from a household survey, is as below:

Table 3.4: Salient Information about the Charada Group

Tribe	Num of Fam	Num of Persons	Land holding Irr	Land holding Unirr	Av. LH	Av. GCA	Num. Mig	Num. W.Lab	Num. Jobs	Num. S.Emp
BHILS	71	448	96.25	115.65	2.98	4.34	17	3	13	8
NAYAK	10	64	3.50	4.65	0.81	1.16	9	3	0	4
HARIJAN*	1	8	0.00	0.00	0.00	0.00	0	0	0	1
PATHAN*	1	9	0.00	1.00	1.00	1.00	0	0	0	1
TOTAL	83	529	99.75	121.30	2.66	3.86	26	6	13	14

Notes
* : Non tribals
AV LH : Average Size of landholding (in acres)
AV GCA : Average Gross Cropped Area (in acres)
NUM. MIG : Number of families with members migrating regularly
NUM. WG LAB: Number of families doing daily wage labour work within the village
NUM. JOB : Number of families with job holding members
NUM. S.EMP : Number of families with a business, or some other means of self employment
Source : Household survey

It can be observed that few families have members with jobs, or with some means of self employment. The dependence on agriculture continues to be high, though the average size of landholdings is small. Almost one third of the population resorts to migration on a regular basis.

The Naiks form a much smaller proportion of the population than in the Khutkar group, though even in Charada their economic position is seen to be precarious, with smaller landholdings and frequent migration.

Farmers of the Charada group were classified according to gross cropped area (GCA) available to them. This is shown in Table 3.5.

Map 3.3 : Charada User Group

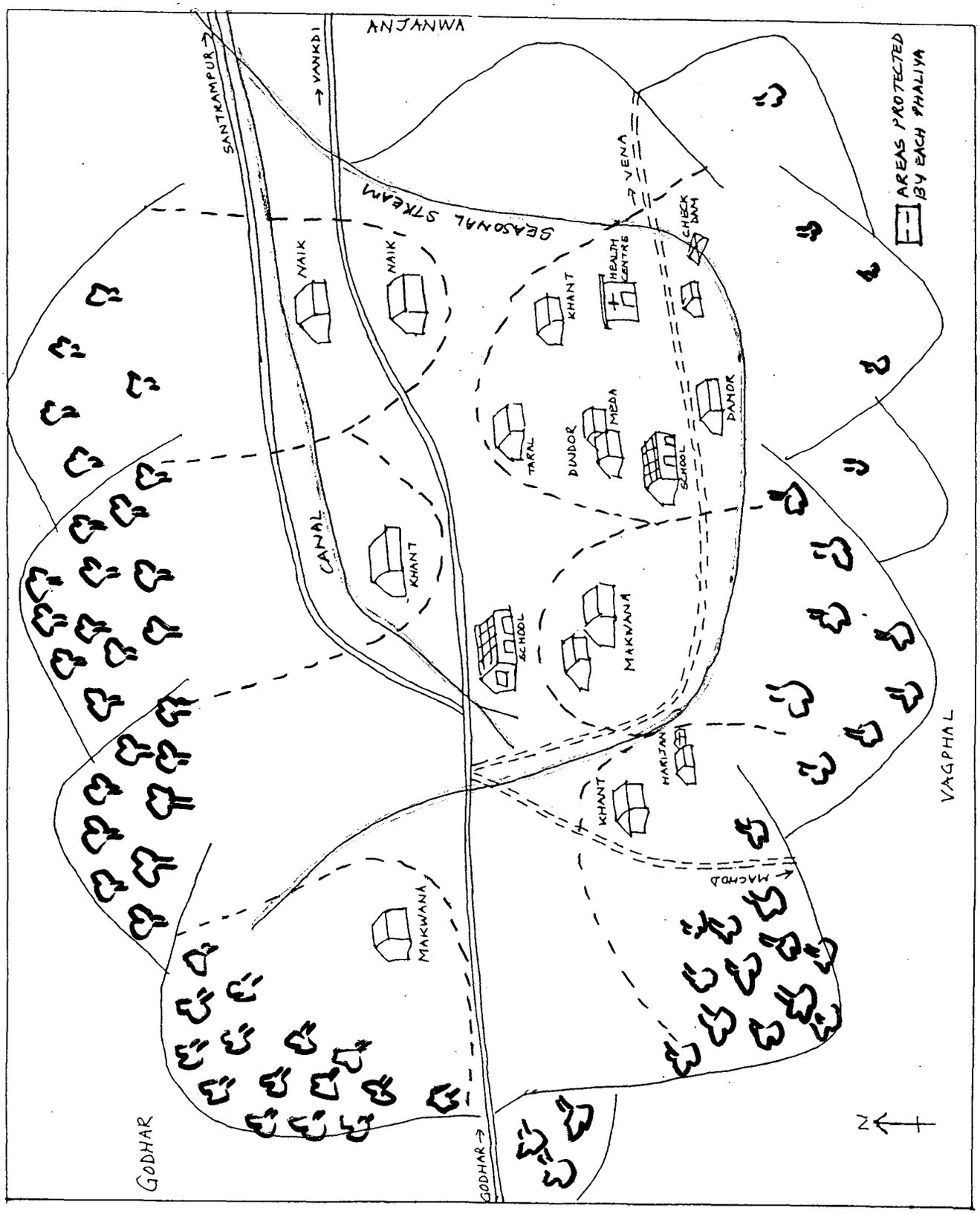


Table 3.5: Classification of Farmers of Charada According to GCA (in percentages)

	MARGINAL (<2.5 a)	SMALL (2.51 - 5.00a)	MEDIUM (5.01 - 10.00a)	LARGE (>10.01a)
CHARADA (83)	45.8	25.3	25.3	3.6

Note : Figure in bracket indicates the total number of farmers in Charada
Source: Household survey

As in the Khutkar user group, a majority of the farmers are seen to belong to the small or marginal farmer category, though only 7 families (8.4 per cent) own less than one acre GCA. Two families are landless. It is evident that for most families returns from agriculture are inadequate for survival, and that other supplementary sources of income are required.

About the Village Community: By all accounts the Naik community was the first to settle in Charada. It is claimed that about 140 years ago the Naiks were the sole inhabitants of the village. There were over a 100 Naik families. In fact the village owes its name to a Naik called Hathi bhai. However since the Naiks were illiterate and poor they found it difficult to represent their problems before the ruler. They therefore invited the Tarals (a Bhil clan) to their village so that the 'Police Patel' could be appointed from their phaliya. At that time, as against a hundred Naik families, there were only five Taral families. The Bhil clans of the Makwanas and the Khants were the next to come.

At present there are only 10 Naik families in Charada. It appears that the rest of the community moved away to some other village. It sounds as if the Naiks were a nomadic, forest dependent community before Independence. Not being an agricultural community they had never really considered it important to establish their rights over any land. It is because of this that the Naiks today have some of the smallest land holdings, and derive only a small proportion of their total income from their land. It is also for this reason that forest degradation has had the most severe impact on their livelihoods.

The Talaars, the Pathan and the Harijan families, are the only ones to have come after Independence. It is thus evident that a majority of the population of this village has been here for several generations, and is likely to continue here in the foreseeable future. There is thus a stake in the sustainable and sensible use of resources.

There are two clear social groupings within the village. While the Khants and the Makwanas belong to one such group, the Talaars, the Naiks and the Dindors belong to the other. What this implies in practical terms is that these two groups celebrate some festivals like Diwali separately, though the entire village gets together on Holi. Similarly, in marriage and death ceremonies the participation of the same social group is greater. Thus within the same village there exist two different cohesive social groups with distinct identities, again highlighting the point made earlier that the boundaries of an administrative unit in many cases does not define the boundaries of a cohesive social unit or community group. Among

other things this has implications for the design of community based institutions for natural resource management from the 'outside'.

Charada Forests: The total forest area falling within the revenue boundary of this village is 241.41 hectares. The per capita availability of forest land is therefore 0.46 ha, much higher than for the Khutkar user group. These forests form part of a much larger forest belt, and are surrounded by the forests of Anjanwa, Vagphal and Machod. The forests of Charada more or less surround the village on three sides, but are not of uniform density. While some patches are totally degraded, in parts the vegetation is quite dense. For instance, patches near Makwana and Khant Phaliya are relatively better protected and have a better forest cover, as compared to the forests near Talaar phaliya, where protection is of much more recent origin.

How Protection Started: As mentioned earlier, protection was started at different periods by different phaliyas. Makwana phaliya is said to have been the first phaliya to initiate protection. Apparently what triggered off the decision to protect was an incident before the Holi festival about 10 to 12 years ago. At that time 100 to 150 persons from the villages of Siyal and Gamdi had come to collect wood for the ritual Holi fire. They had cut nearly a truckload of wood before they were spotted by the Forester and the Beat guard. The Forest Department staff called the people of Charada to help them. About 25 men from Makwana phaliya went to assist, and together they succeeded in driving away the looting mob. The next day a village meeting was held for Holi. The need for

initiating forest protection was discussed primarily so that the resources of their village could be protected from outsiders. At that time everybody agreed to start protection. However in practice it was only the people of Makwana phaliya who began to protect forest areas close to their houses and fields.

The next to start were the Khant and Taral phaliyas. According to a man from Makwana phaliya, some men of Khant phaliya were found stealing wood from the forests near Makwana phaliya, and were beaten up. This insult prompted Khant phaliya to start protection. More recently in the late eighties, due to the efforts of the Forester, R.P. Damor, others like the Naiks and the Dindors have started protection. However some of the forest patches near the Talaar and Dindor phaliyas still remain degraded.

It is also significant that there is a cremation area on the fringes of Charada, where people from surrounding villages come to burn the dead. Wood from the Charada forests is used for the purpose. While it is not considered appropriate to stop such felling by the 'mourners', people of Charada nevertheless recognise this as an important factor contributing to deforestation. It appears that they have brought this to the notice of the Forest Department, but there is as yet no solution in sight.

Thus in contrast to the situation in Chari Boriya where it was primarily the scarcity of forest produce which prompted people to begin protection, in this area the motivating factors seem to differ. People seem more concerned that the resources of 'their' village will be looted by outsiders if an effective protection

system is not in place, and in the ultimate analysis they will be the sufferers.

Recent Developments: Charada has recently decided to initiate a village based forest protection system. This decision was taken at a village meeting in August 1994. Five chowkidars representing different phaliyas have been appointed, though their wages have not yet been decided. Letters have been sent by the village body to the surrounding village panchayats of Godhar, Chutha na Muwada, Moila, Bariya na moila, Padariya and Kalibel, informing them of the decision, and issuing a warning that any forest offenders will be caught and punished. The forest area under protection has been increased, though the entire forest area of Charada has not been taken up for protection. According to the villagers area under protection will be increased gradually.

However, it appears that the protection system has gradually reverted to its earlier phaliya based form, after a brief spell during which protection was undertaken jointly by the village group. Villagers however continues to maintain that the protection system is now village based. It is likely that this insistence is motivated by the desire to participate in, and to benefit by, the Gujarat JFM scheme. An important clause under the JFM resolution stipulates that in order to participate in JFM, at least 60 per cent of the population of a village must be part of the forest protection group[9].

---

[9]. In a recent development the DFO has given an assurance that the FD will also provide recognition to phaliya based groups.

The distinctive geographical and social features of the clusters, as well as of the forest management systems evolved by the people of these clusters, are summarised in Table 2.6.

SECTION II: AN ANALYSIS OF THE REASONS BEHIND THE EMERGENCE OF LOCAL INITIATIVES IN FOREST MANAGEMENT

This section attempts to explore the micro and macro level factors behind the recent trends toward forest protection and management in the area, both individual and community based, and discusses the reasons for the emergence of different forms of community based forest protection within the same Taluka.

As mentioned earlier, the taluka has seen the rapid decimation of forest cover in the decades since Independence. It had earlier been highlighted that factors other than population growth had also contributed significantly to the decline in forest cover. These included deforestation caused by the implementation of 'developmental' projects such as dams, an increased exposure to the commercial market economy with the construction of proper roads, felling by the Forest Department for commercial purposes, illicit felling facilitated by corrupt Forest Department staff, and so on.

It is important to consider these factors against the background of macro policies for the management of forest resources. As discussed earlier, the nationalisation of all forest resources effectively alienated forest dependent communities, by reducing them to 'concessionaries', with no role to play in the management of the very resources on which their livelihoods depended to such a significant extent.

It is not surprising then that the people of this area tended to be silent witnesses to the forest destruction, and even participated in the free-for-all.

What then prompted local people to take matters into their own hands and initiate forest protection and management, at the individual or community level? One of the most crucial factors appears to be the fact that the inhabitants of this area have not only lived here for several generations, but are likely to continue doing so in the conceivable future. This gives them a clear stake in the protection and regeneration of resources, and in using the resources available in a sustainable manner. There is a 'long term orientation', as people desire not only to meet the forest related demands of their own generation, but also to provide for the needs of future generations. Broad (1994), in his study of environmental activism in rural communities across the Phillipines, has also identified 'a sense of permanence' as an important factor which prompted poor people to become environmental protectors.

It is probably this sense of permanence that is behind the fact that even after several decades of control of forests by the Forest Department, people still continue to perceive the forests as belonging to 'their' village, and see illicit fellers from 'outside' as a threat to their own wellbeing, as well as to the wellbeing of future generations.

Table 3.6: Distinctive Features of the Two Forest Management Systems

	Chari Boriya Cluster	Vankdi Cluster
Type of FM system	Formalised, large user group	Hamlet based, informal
Population	Primarily Tribal	Primarily Tribal
Leadership	Traditional agyavans	Traditional agyavans
Availability of Irrigation	Primarily canal irrigation	Wells and ponds
Nature of forest	Compact, contiguous patch	Vast stretches, with settlements dispersed within
Traditional user rights	Rights of each village and phaliya well defined	Rights of each village and phaliya well defined
Initial Condition of forest	Degraded, almost barren	Degraded, but not badly
Initial Experience of deforestation	Sudden experience of scarcity, extreme hardship	Anticipation of future scarcity in view of destruction in open access areas
Motivation for starting protection	Acute scarcity of forest produce	Threat from 'outside' illicit fellers, desire to provide for future needs
Criteria for membership	Traditional user rights, users with access to no other forest area included when seen as threat to resource	Membership of phaliya
Size of group	Large, members often from more than one village or Panchayat	Smaller, members usually from one phaliya
Rules	Formalised, more stringent	Informal, more implicit
Meetings	Regular	None/ infrequent[10]
Protection system	Chowkidars appointed and paid by group	Informal, each family keeps an eye open for offenders
Sanctioning system	Offenders fined or punished by group	None, offenders driven away
Role of Forest Department	Negative, negligible	Positive, Forester as motivator

[10]. In some villages where phaliya based forms of forest management are prevalent, a system of regular monthly meetings has recently been initiated, at the instance of the Forest department and/ or Sarthi (an NGO).

Another important reason is that for a majority of the population in the taluka, forest resources continue to be vital for survival. Most farmers, even comparatively larger farmers with access to irrigation, continue to depend on forests for fuelwood and fodder at least to some extent, if not for supplementary sources of income, nutrition and employment. This aspect will be discussed in more detail in the next chapter. Researchers such as Wade (1988) have also identified greater dependence on a resource as an important factor facilitating action on environmental issues.

The experience of acute scarcity of a resource, and the immediacy of the threat to survival due to this, has also been seen as an important factor stimulating environmental action (Agarwal,1992, Broad,1994). The acute shortage of fodder, fuelwood and other forest based resources, aggravated by two periods of drought in the eighties, has probably been an eye opener for most of the people in this area. During these drought periods fodder, especially green fodder, was at a premium, even in relatively forest abundant areas like the Vankdi cluster. Despite Government run cattle and fodder camps, the livestock population in the Taluka dwindled considerably. Similarly, though fuelwood continues to be the single most important source of cooking energy, its increasing scarcity is reflected by the rise in fuelwood prices in the local market[11]. Thus the experience of scarcity and hardship is likely to have stimulated local people to take positive action to prevent the situation from recurring again.

---

[11]. While a headload of fuelwood weighing about 20 kgs cost between 3 to 4 rupees in the local market in the early nineties, the price now varies between 6 to 10 rupees.

While all of the above factors are likely to have prompted local people to become environmental protectors, the motives or the reasons behind the adoption of individual or community based forms of forest management are likely to have been different.

As mentioned earlier, under private systems of management, forest patches adjoining the fields of individual farmers have been taken up for protection. Apart from the fact that the geographical distribution of forests may be such that it is more feasible for individual families to start protection, due to the factor of sheer proximity of the resource, what motivates families to undertake such protection? The usual response to such queries is that protection is undertaken so that the fuelwood and timber needs of the family concerned, and that of future generations, can be met. Another factor, though rarely articulated, is the hope that such claims will some day get recognition from the Government. In village Bhamri of Santrampur Taluka, people were clearly hopeful that the Government would actually allot such land to individual farmers for agricultural purposes. This is especially true where forests are on fertile and relatively flat lands, suitable for agriculture. The above situation needs to be seen in the macro context, where Government policy over the last few years has resulted in the regularisation of several such claims on forest land. It also needs to be seen in the context of the Indian Forest Policy, which has consistently marginalised the claims of local people on forest produce, and has considerably reduced their stakes in maintaining the forest base. Under the circumstances, it might just be a far more rational strategy for individual farmers to attempt to privatise such forest lands, and to enjoy a certain

security of tenure and of returns. In some cases of individual protection then, it is likely that forest protection is based on the hope of private title to land, and not on any environmental awareness.

Several features unique to this area are likely to have facilitated collective action, whether at the phaliya, or the larger user group level. As mentioned earlier, there are certain traditions that such user groups seem to have built upon. For instance, there is already a strong tradition of meeting at all social functions and festivals. Village level issues and matters of social reform have always been discussed during village meetings held on festivals. In fact, in all the groups visited, the idea of starting protection was first mooted and discussed during such meetings.

At the same time, user group boundaries and rights to a particular forest patch, has often been defined by tradition, even though these may have been weakened by government policies pursued over the past several decades.

Bina Agarwal (1992) has referred to the fact of relatively lower levels of social and economic differentiation in hill and tribal communities, to account for the greater participation in environmental movements observed in these regions. According to her, since such communities are more homogeneous, they are more cohesive. Cooperative efforts in the study area have also, no doubt, been facilitated by the fact that villages, especially the predominantly tribal villages, are relatively homogeneous from a social and an economic perspective.

All these groups have also drawn on the traditional leadership structure, and on conflict resolution mechanisms already in place, mechanisms which have social acceptability.

While all of the earlier mentioned factors may be common to other villages in the vicinity, even to those where environmental action has not been initiated, the presence of appropriate and inspired leadership in the forest management groups studied, is likely to have been a vital factor facilitating collective action.

Has the Forest Department staff played any role in facilitating such initiatives? The answer seems to be complex. In some villages Forest Department staff have motivated village groups to begin protection. People have taken up the suggestion, fully aware that without their cooperation, the Forest Department by itself, cannot succeed in regenerating the forests. They have been motivated by the hope that the benefits of regeneration would accrue to them. In a majority of villages, however, it has been the negligence, inability and /or corruption of the Forest Department staff which has prompted people to take control, despite not having the legal sanction to do so. The relationship with the Forest Department in such cases, is antagonistic.

What are the factors that have led to the emergence of different forms of community based forest management, in areas which are essentially similar in so many other respects? To begin with, it needs to be mentioned that the incidence of the phaliya based system is far more common in the Taluka. In fact, the more formalised system found in the Chari Boriya area, is not found in

any other part of the Taluka. This is not surprising, given the fact that **the phaliya tends to be the most cohesive social unit in a village.** As mentioned earlier, a phaliya is often, though not always, peopled by persons of the same clan (atak). In fact, it is not uncommon to find that a majority of the phaliya consists of members of an extended family. The phaliya then becomes the 'natural' unit to initiate action on a common problem. Even in the larger and more formalised system of Chari Boriya, membership to the user group is on a phaliya, rather than an individual basis. Thus, in the case of the Khutkar group, members of Chari Nishalphaliya sought entry as a phaliya, rather than as individual families.

Given this background, it would be useful to understand the unique configuration of factors that facilitated the emergence of a larger, and more formalised system of forest management, in the Chari Boriya cluster.

It is likely that the most important factor is the **nature and the characteristics of the resource itself,** which determines to some extent the management system appropriate for its governance. As described earlier, the forests of the Chari Boriya area are confined to a contiguous belt, encircling about nine revenue villages. While this feature facilitates a clearer partitioning of the resource between villages or between larger user groups, it also compels those phaliyas with no forest patch adjacent to it, to negotiate access to a forest area. In the Vankdi cluster on the other hand, forests are relatively abundant, so that it is possible for each hamlet to define and protect a forest patch close to it.

Other 'unprotected' patches continue as open access resources. Were protection to be taken up at the village or larger user group level, it is likely that the costs[12] incurred for instituting a common protection and management system, would far outstrip the benefits.

The distinctive characteristics of the forest resource in the two clusters, discussed earlier, have probably played a role even in defining traditional use rights and user group boundaries. Thus, even traditionally user groups were probably larger in the Chari Boriya cluster than in the Vankdi cluster.

It needs to be emphasised that it is the size of the user group that has been an important factor influencing the need for the adoption of formal rules and regulations. In the phaliya based system, where the number of families in each user group is much smaller, the need for formal rules has not been felt. Rules therefore tend to be more implicit. However in the Chari Boriya cluster, where the size of the group often exceeds hundred families, the need for formal and generally accepted rules and procedures, has been dictated by the size of the group.

The process and the causes of deforestation have also differed in the two areas, and may have contributed to the evolution of

---

[12]. Costs, such as the cost of organising regular meetings, of instituting an effective common system of protection, of monitoring, etc., which are borne by the community, are usually not accounted for, and remain hidden. Enlisting 'community participation' in forest protection is commonly advocated on the dubious grounds of it being a more economic option. What is not mentioned is that costs of protection and management are often simply transferred to the community, without their economic value being acknowledged.

different management systems. It is claimed that it was the acute shortage of forest produce faced by local people, consequent to the wanton destruction of forests due to the construction of the Panam dam, that led different communities in the Chari Boriya cluster to articulate the need for forest protection. During the construction of the dam in the seventies, the forests are said to have been reduced to stony barrenness. The **simultaneous experience of hardship** by all the communities in the cluster facilitated the emergence of a community based system. Had any phaliya attempted to stake an exclusive claim over already scarce forest resources at that time, it is likely that this would have resulted in greater conflict. This is borne out by the events in village Asundriya, as mentioned earlier, where Damor phaliya staked its claim before the rest of the village, and the situation remains conflict ridden to this day.

In the Vankdi area on the other hand, forest destruction has not been so dramatic and sudden. At the same time, at least for people living in the area, the experience of scarcity of forest produce, has still not been so acute. The need for taking concerted and combined action, therefore, never arose with the same urgency. As mentioned earlier, the motivation to begin protection was more the need to prevent their resources from being depleted by outsiders.

Also, if as claimed, Baluji na Muwada in the Chari Boriya cluster had initiated a rudimentary form of community based forest management prior to the construction of the Panam dam, then it is not surprising that the system was adopted by the other villages in

the immediate vicinity. It served as a model that could be readily adapted.

The availability of irrigation in large parts of the Chari Boriya cluster from the Panam dam, has been another factor which has helped reduce pressure on forest resources, thereby facilitating the emergence of a community based management system. Irrigation has not only increased local employment opportunities, but also the availability of green fodder and cooking fuel from crop residues. The space needed by the forests for regeneration has thus been provided.

What seems clear is that once a system has evolved, and some parties have developed stakes in its continuance, it is difficult to change. In the Vankdi area, where a few phaliyas now have some of the best forest patches in the areas protected by them, it is unlikely that they would be willing to relinquish their claims on them.

To conclude, it is evident that common property resource management systems have been operational in this area for some time now. Where they have emerged , they have been very effective in protecting and regenerating the forest resource base, even where they have received no cooperation from State agencies. There is however no denying the fact that the lack of official recognition of the efforts of these groups, has the potential of undermining their stability and sustainability. Ostrom (1990), on the basis of her analysis of enduring self governing institutions, has emphasised, for instance, that most successful institutions have in common the

fact that they have been accorded a minimal recognition of their rights to organise by external government authorities. Similarly, Wade (1989) observes that the chances of community based institutions succeeding in their efforts increases, to the extent that the State does not undertake to undermine their efforts. Therefore, if these initiatives have to be nurtured and strengthened, a recognition of their rights to organise, and to manage and control their resources, needs to be accorded by the state.

The above discussion also highlights that no 'blueprint' or standard model, for the most appropriate form of community based institutions for forest management, can be prescribed. It has been seen that within the same Taluka and in almost adjacent areas, the systems evolved by local people have differed, according to the situation and the context, i.e. there is a congruence between the resource and the management regime. Several 'lessons' for externally promoted natural resource management systems can be drawn. The limitations of state JFM resolutions, with their fixed and rigid stipulations regarding the membership and structure of forest protection and management groups, their insistence on the use of administrative boundaries, and on the manner in which forests should be managed and exploited, become only too evident.

Chapter 4

DIMENSIONS OF CLASS AND GENDER IN FOREST DEPENDENCE AND MANAGEMENT

The previous chapter explored the factors behind the spontaneous emergence of efforts towards forest protection and management in Santrampur Taluka, and the reasons for the different forms taken by them. Detailed studies of two user groups, representing two different forms of community based forest management, were presented, to substantiate the analysis.

This chapter further analyses data from the two user groups selected, to understand the extent and patterns of dependence on forest resources in both user groups, as well as the relevance of forests to these groups, in the present context. The manner in which factors of class and gender shape and structure the relationship of people with forest resources, is explored. The extent and form of participation of different sub groups within the user group in forest management, and the impact that the system adopted has had on them, and on the forest resource base, is then discussed. The links between issues of equity, and those of the efficiency of the forest management system and the sustainability of the institutional arrangement, are also explored.

It needs to be emphasised that throughout the analysis, village Khutkar and Chari Nishalphaliya have jointly been referred to as the Khutkar user group. As far as possible data for Khutkar and Chari Nishalphaliya has been analysed separately, since, as mentioned in the previous chapter, Chari Nishalphaliya has been a

more recent entrant to the Khutkar user group, a factor which possibly influences forest usage and dependence.

SECTION I : DEPENDENCE ON FOREST PRODUCE IN THE TWO USER GROUPS

In the discussion that follows dependence on forest produce is categorised into:

(a) dependence for domestic purposes, and
(b) dependence for commercial purposes.

Domestic purposes: This includes usage of forests and forest produce for fuelwood, fodder, timber, and grazing of livestock. It also includes the collection of fruits, seasonal vegetables, medicinal plants etc. for use within the household.

A household has been considered to depend on forests for domestic purposes, if it has regular forest usage for one or more of the purposes mentioned above.

Commercial purposes: This refers to the collection of commercially useful forest produce such as timru leaves, sitaphal (a fruit), firewood, timber, and seeds of various plant and tree species, for sale.

Households that reported collection of forest produce for sale, have been taken as dependent on forests for commercial purposes.

This categorisation has been adopted to better understand the extent to which forests contribute directly (in money terms) and/ or indirectly, to the income and economy of a village or a household.

Table 4.1 shows the proportion of households that depend on forests for domestic and/or commercial purposes, in both the user groups. As can be expected, a greater proportion of households depend on forests for fuelwood, fodder, small timber etc. for direct consumption, while a relatively smaller proportion earn a cash income from the sale of forest produce, with or without processing. It is evident, however, that forests play a significant role in the economy of both user groups. Only a minority of the households in both these groups claim to receive no benefit from the forests.

Table 4.1 : Proportion of Households Reporting Dependence on Forests in the Two User Groups

USER GROUP	VILLAGE/ PHALIYA	NO. OF HH	DEPENDENCE ON FOREST PRODUCE (IN %)	
			DOMESTIC	COMMERCIAL
KHUTKAR	KHUTKAR	68	88.2	63.2
	CHARI NP	44	79.5	47.7
CHARADA	CHARADA	83	100	86.7

Source: Household survey

It would appear that both the availability and the accessibility of the resource are factors which contribute towards shaping dependence on forest produce. In Charada, for instance, where forests are relatively more abundant, a far greater proportion of the user group benefits from the resource. On the other hand, it is significant that approximately 20 per cent of the households in

Chari Nishalphaliya claim no benefit, direct or indirect. It needs to be recalled that Chari Nishalphaliya has no forest area of its own, even though it has sought and gained membership in the Khutkar group. That the forests are at some distance from Chari Nishalphaliya, and in any case are not very well stocked, might have deterred some households from using the forests. At the same time, most of the forests in the vicinity, including those of Khutkar, are protected, and therefore relatively inaccessible. The closest open access forest area is atleast one to two hours walk from Chari Nishalphaliya.

The sample survey conducted in both the user groups, gave some indication of the extent of dependence on forests to meet domestic requirements of fuelwood and fodder. Information obtained indicated that, depending on the number of members, each household required between 100 to 200 headloads of fuelwood per year (each headload of approximately 20 kgs). It was reported that much more fuelwood was required during the winter and monsoon months, and that fuelwood was collected mainly during the winter months, when agricultural work was relatively less. Most households reported that agricultural residue from tuar (a pulse grown during the monsoon on both irrigated and unirrigated land), provided fuel for about a month or two, but that for the rest of the year they had to get fuelwood from the forests. Only a few farmers with large land holdings reported that they were able to meet most of their fuelwood requirements from their own fields. A few households in Chari and Khutkar claimed that they used cowdung to supplement fuelwood.

Table 4.2 presents information collected on the per capita annual consumption of fuelwood in the two user groups.

Table 4.2 : Per Capita Annual Consumption of Fuelwood (in headloads*)

USER GROUP	VILLAGE/ PHALIYA	PER CAPITA CONSUMPTION OF FUELWOOD	
		FROM FORESTS	FROM OWN FIELDS
KHUTKAR	KHUTKAR	23	2
	CHARI NP	14	6
CHARADA	CHARADA	26	1

Note : * Each headload weighs approximately 20 kgs
Source : 10 per cent sample survey conducted in both user groups.

The table substantiates some of the trends noticed in Table 4.1. Reported consumption of fuelwood is seen to be higher in Charada, where forests are relatively better stocked and more accessible. At the same time, households in Chari Nishalphaliya and Khutkar report that they meet a greater proportion of their fuelwood requirements from their own fields. It needs to be recalled that more than half the area of the Khutkar user group receives canal irrigation, a factor which helps increase availability of crop residue for fuelwood.

Households with large number of livestock reported dependence on forests for fodder. According to the information obtained, fodder is collected mainly during the winter and summer months from November to May/June. Though requirements varied with the number of livestock, households with livestock surveyed collected between 100 to 180 headloads of fodder (each of approximately 20 kgs) per annum. Farmers with large, irrigated landholdings, or with fewer

livestock, were able to meet fodder requirements from their own fields. All livestock owning households also reported extensive use of forests for grazing of livestock, especially during the non monsoon months.

Estimates of the average income earned from the direct sale of forest produce for both the user groups, are shown in Table 4.3.

Table 4.3 : Average Annual Income Per Family from Forest Produce

USER GROUP	VILLAGE/ PHALIYA	AVERAGE ANNUAL INCOME PER FAMILY (RS)		
		NAIKS	OTHERS	TOTAL
KHUTKAR	KHUTKAR	207 (31)	113 (37)	156 (68)
	CHARI NP	34 (23)	260 (21)	142 (44)
CHARADA	CHARADA	658 (10)	369 (73)	404 (83)

Notes : (1) Figures in brackets indicate number of households in each category
: (2) All figures rounded off to the nearest rupee
Source: Household survey

From the table it is evident that earnings from sale of forest produce are higher in Charada, where the forest vegetation is more abundant. From a commercial perspective, the most important NTFP in this area is the leaf of the timru tree, used in the bidi industry. More than half the earnings in both the user groups, are from the sale of timru leaves.

The returns accruing to Naik households have been computed separately, since the Naiks have traditionally been a forest dependent community, and by all accounts continue to be so. Except

in Chari Nishalphaliya, returns to Naik households are seen to be greater.

It should however be noted that the figures in the table are definitely underestimates. They do not include, for instance, the income earned from the 'illegal' sale of firewood and timber, which were not captured during the survey, for obvious reasons. Unofficial sources however claim, that at least 10 per cent of the households in each of the user groups, engage in the sale of firewood, timber and charcoal, on a fairly regular basis, especially during the agriculturally lean season, and that the income from this constitutes a significant proportion of the total income of such households. Most people claim that it is primarily the Naiks who engage in such activities, but the possibility of other economically backward households supplementing their income from sale of firewood etc., cannot be ruled out. Besides this, there can have been some under-reporting, either due to recall lapses, or due to an unwillingness to share information.

The following table indicates that a greater proportion of households in Charada receive direct economic benefits from forests.

Table 4.4 : Income to Households of the Two User Groups from Commercial Forest Produce

USER GROUP	VILL/ PHALIYA	PERCENTAGE OF HOUSEHOLDS				
		NO INCOME	UPTO RS. 400	BETWEEN RS 400-500	BETWEEN RS 500-1000	ABOVE RS 1000
KHUTKAR	KHUTKAR (68)	36.7 (25)	51.5 (35)	4.4 (3)	2.9 (2)	4.4 (3)
	CHARI NP (44)	52.3 (23)	31.8 (14)	4.5 (2)	9.1 (4)	2.3 (1)
CHARADA	CHARADA (83)	13.2 (11)	44.6 (37)	24.1 (20)	8.4 (7)	9.6 (8)

Source: Household survey
Note : Figures in brackets indicate total number of households in each category.

The table indicates that at least 42 per cent of the households in Charada earn an income of over Rs 400 per annum from sale of forest produce. In both Khutkar and Chari Nishalphaliya the proportion is much lower i.e. 12 per cent in Khutkar and 16 per cent in Chari Nishalphaliya. On the other hand, almost half the households of the Khutkar user group claim that they receive no direct monetary benefits from the forests.

It is evident from the above discussion that households in both user groups draw considerable benefits from forests and forest produce. While only the direct contribution of forests to household income has been estimated, there is no doubt that the 'indirect' benefits received by households, are far more substantial and indispensable for household survival and wellbeing. It therefore appears that the role of forests in the economy of both user groups continues to be significant, even in the present context.

It needs to be noted that the quality and the extent of forest dependence can be better understood by estimating, both the variety and the quantity of forest produce collected, as well as the frequency and the intensity of forest usage, by different groups of resource users.

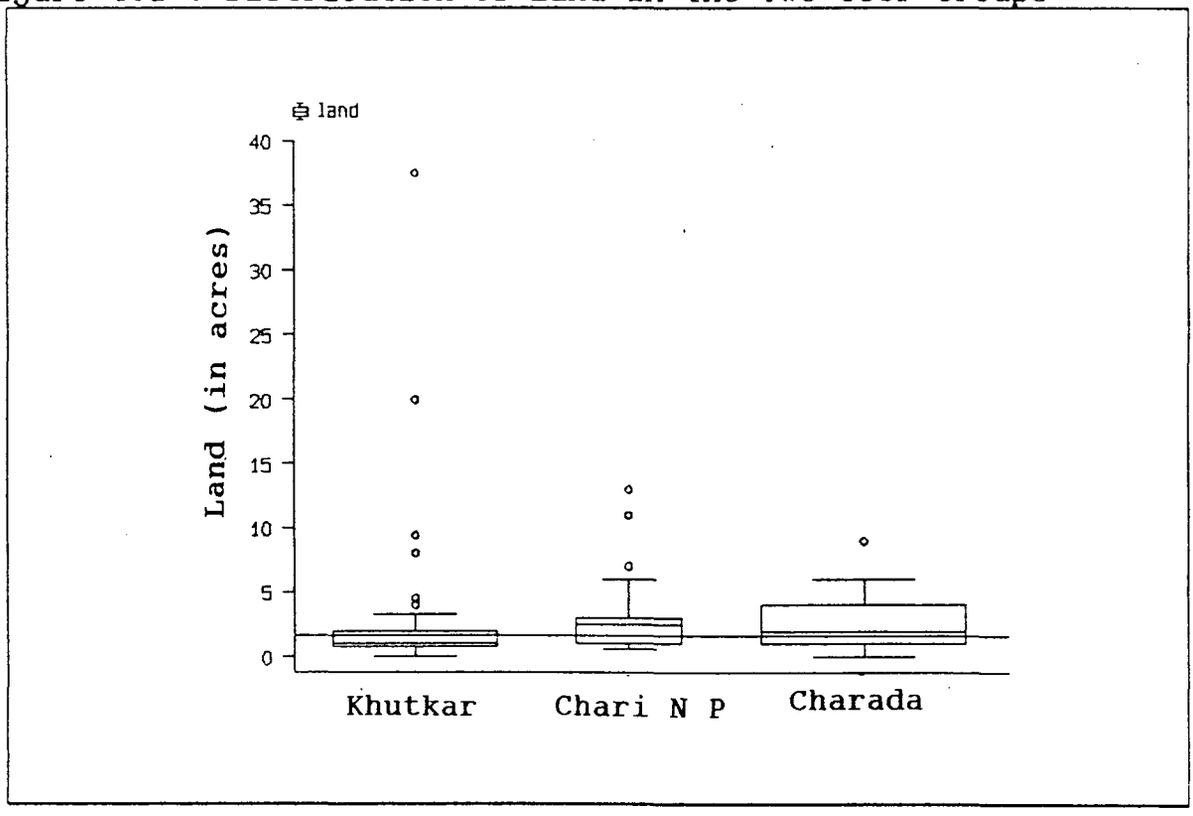
It is also relevant to note that the quality and the extent of dependence on commercial forest produce, changes with circumstances. For instance, during the survey many households claimed that they had been unable to participate in the timru season in the current year, because of other pending commitments- construction of house, sickness in the family, and so on. During drought years the dependence on forests, as a source of income and sustenance, increases manifold. Dependence is not then a static concept. Its character is influenced by changes in micro as well as macro level conditions. This has obvious implications for research based on cross sectional data, since the period in which data is collected can influence the conclusions of the study significantly.

SECTION II : DIMENSIONS OF CLASS AND GENDER IN FOREST DEPENDENCE

Previous research has indicated that factors of class and gender are instrumental in shaping the relationship of users with natural resources, and that the dependence of the rural poor, and of poor women in particular, on common pool resources such as forests, is much higher. This section will explore the manner in which these factors play a role in influencing the relationship of the members of the two user groups, with their forest resources.

The *relationship between class and forest dependence* will be explored first. As discussed in Chapter II, research has emphasised that there is no reason to view tribal societies as homogeneous, classless entities, and that tribal societies are, in fact, characterised by significant differences in the ownership of the means of production. Given the fact that agriculture continues to be the most important occupation in the area for over 80 per cent of the population, it would be useful to study the extent of differentiation in land ownership within the two user groups, and whether in fact employing a class perspective in analysing forest dependence in the two user groups, is justified.

Figure 4.1 : Distribution of Land in the Two User Groups



Note : Khutkar and Chari Nishalphaliya belong to the Khutkar user group
Source: Household survey

Figure 4.1[1] indicates that inequality in distribution of land is greatest in Khutkar, with relatively few farmers owning most of the land, while a majority of the farmers own less than 1.5 acres of land. In Charada, on the other hand, distribution of land holdings, is more homogeneous.

Table 4.5 provides a comparative view of inequality in land distribution in the two user groups vis a vis Gujarat and India. It is evident that inequality in distribution of land is much greater in Khutkar, and less so in Chari Nishalphaliya. Distribution of land in Charada appears to be more homogeneous.

Table 4.5 : A Comparative View of Inequality in Land Ownership

	% OF HH OWNING > 10 ACRES OF LAND	% OF LAND CONTROLLED
INDIA	2	20
GUJARAT	4.6	21
KHUTKAR	4.4	46
CHARI NP	4.5	19
CHARADA	0	0

Note : Village Khutkar and Chari Nishalphaliya are both part of the Khutkar user group
Source: Table 6.03(b), Fertiliser Statistics, 1990-91 & Household survey.

The above data indicates that, while some degree of inequality is evident in both user groups, it is present to a greater extent in the Khutkar user group. An analysis of forest dependence by class would therefore be revealing.

---

[1]. For more details about the box and whisker plot shown in Figure 4.1, see Appendix 2.

The dependence of different categories of households by wealth on forest produce, is shown in Table 4.6

Table 4.6 : Dependence of Different Categories of Households on Forest Produce

	KHUTKAR		CHARI NP		CHARADA	
	DOM.	COMM.	DOM.	COMM.	DOM.	COMM.
VERY POOR	90.6	75	100	52.6	100	84.4
POOR	95	35	64.3	28.6	100	91.3
AVERAGE	90	90	66.6	66.6	100	79.2
WELL OFF	50	33.3	60	60	100	100

Notes : (1) All figures in per centages;
(2) Khutkar and Chari Nishalphaliya constitute the Khutkar user group;
(3) Dom : For domestic purposes;
(4) Com : For commercial purposes.
Source: Household survey

It can be observed that, where dependence for the fulfillment of domestic needs is concerned, a pattern is visible. In the case of the very poor in both the user groups, dependence for domestic needs like fuelwood, small timber etc. is seen to be uniformly high. This clearly indicates that, for the very poor, who are unable to meet even a part of such needs from their private lands and who have few other alternatives, common pool resources like forests continue to be indispensable. This aspect has also been emphasized by Jodha (1986) and Iyengar (1989). In the Khutkar (Khutkar and Chari Nishalphaliya) user group, the comparatively 'better off' categories on the other hand, are seen to have a marginally lower dependence on forest produce for the fulfillment of household needs. This would indicate that, at least some of the

'better off' households are able to meet their domestic needs from other sources, such as their private agricultural lands, the market, and so on. This is seen to be especially true of the well off category.

In Charada, on the other hand, where forest resources are far more accessible and comparatively abundant, the dependence on forests for domestic purposes, is uniformly high across categories. Possible reasons for this can be explored. It needs to be recalled that in contrast to the Khutkar group, no farmer in Charada owns above 10 acres of land. This, combined with the fact that a smaller proportion of the agricultural land in Charada is irrigated, could well contribute to the greater dependence of the Charada households on forests. Another reason could well be that the people of Charada have not experienced scarcity of forest resources to the same degree as have the people of Khutkar. Since forest produce has been available with relative ease, the necessity of searching for alternative sources of cooking energy, fodder, and so on, has never been felt with the same urgency. Thus, it would appear that **dependence on forest resources is also a function of its availability, and not only of the economic condition of the household.**

However, a greater dependence of the poor on forest produce as a source of income, as existing literature in the field would lead us to expect, is not in evidence. A look at Table 4.6 would suggest that no clear pattern is discernible.

Table 4.7 presents the average annual income from sale of commercial forest produce accruing to households belonging to different wealth based categories.

Table 4.7 : Average Annual Income Per Household from Commercial Forest Produce

	KHUTKAR		CHARI NP		CHARADA	
	NUM FAM	AV.INC	NUM.FAM	AV.INC	NUM.FAM	AV.INC.
VERY POOR	32	191	19	51	32	431
POOR	20	59	14	130	23	430
AVERAGE	10	150	6	206	24	312
WELL OFF	6	313	5	440	5	470

Notes : (1) All figures rounded off to the nearest rupee;
(2) Khutkar and Chari Nishalphaliya constitute the Khutkar user group;
(3) No. Fam : Number of families;
(4) Av. Inc : Average income.
Source: Household survey

The above Table suggests that even the families of the well off are benefiting, in monetary terms, from sale of NTFPs, in both user groups. **The dependence of even the better off sections on forests as a source of income, is therefore in evidence.** The extent to which income from sale of forest produce contributes to the total income of households belonging to different wealth categories, was estimated for a sample of the households of both user groups. The findings are presented in Table 4.8.

Table 4.8 : Contribution to Total Income of Household from Sale of Forest Produce

	KHUTKAR USER GP		CHARADA USER GP	
	AV. INCOME PER HH FROM FOR. PROD.	% TO TOTAL INCOME	AV. INCOME PER HH FROM FOR. PROD.	% TO TOTAL INCOME
VERY POOR	320	3.2	345	4.6
POOR	300	2	917	8.1
AVERAGE	800	4.1	583	8.3
WELL OFF	540	2.2	1000	4.4

Source : Sample survey.
Note : All figures for income rounded off to the nearest rupee.

From the table it can be seen that income from the sale of forest produce contributes to the income of households belonging to all categories, in both user groups. In the Khutkar user group, income from sale of forest produce is seen to contribute between 2 to 4 per cent of total household income, while the corresponding proportion for Charada is between 4 to 8 per cent.

These findings are not entirely in keeping with the findings of earlier research. The earlier mentioned study by Jodha (1986), in the dry tropical regions of the country (including Gujarat), found, for instance, that the dependence of the rural rich on common pool resources (for domestic or commercial purposes), was very marginal. He also found that for poor households, income from village commons accounted for 9 to 20 per cent of total income, while the

corresponding proportion for the non-poor households, was only 1 to 4 per cent[2].

What accounts for this relative uniformity in dependence on forest produce for income, seen across categories in this area? Why do the 'well off' continue to depend on forests as a source of income? It seems likely that a combination of factors can account for this phenomenon. Firstly, it needs to be emphasized that the well off in this area are not comparable to the rural rich in some other parts of India. In other words, they are 'well off' in the relative rather than the absolute sense. While inequality no doubt exists, it appears to be of a far more subdued nature. Information from the sample survey indicated that, even the well off did not receive an annual income of much over Rs. 35,000 per annum, while the poorer families earned an annual income of between 8,000 to 10,000 per annum. To an observer, living conditions of families belonging to the various categories do not appear to differ greatly. For example, except for two families in Khutkar, no other family in either of the user groups, has a cemented house. Secondly, while forests were a source of regular employment a few decades back, this is no longer the situation[3]. Earnings from daily wage labour work, especially from migration, provide a far more stable source of income for the economically weak. Income from seasonal forest

---

[2]. It needs to be noted that the results of Jodha's study are not strictly comparable since he has used size of landholdings as a basis to classify households into poor and non poor, whereas this study has used a wealth based classification.

[3]. In the early decades after Independence regular employment was provided to local people from rotational forest felling operations undertaken by the FD/ contractors. At the same time forest produce was far more abundant providing a ready source of income.

produce can, at best, supplement the income from agriculture and other sources. This explains why a greater dependence of the poor is not in evidence, while at the same time the 'better off' continue to see forests as a source of supplementary income. Thus, in areas where alternative sources of more lucrative and stable employment are available, a greater dependence of the poor on common pool resources as a source of income, may *not* be in evidence.

The findings of the present study then seem to indicate, that the relationship between class and dependence on forest based common pool resources, is complex and context specific, and certainly not as straightforward as might be expected.

What factors, other than that of economic class, then influence a households dependence on forest resources? A comparative analysis of families whose direct earnings from forests are high, with those who claim to have not benefitted at all in monetary terms, is revealing. It is observed that there are few job holders in the former category. It would therefore appear, that if a family has a person with a regular job, providing a stable source of income, the dependence of that family on forests as a source of supplementary income, reduces. On the other hand, the dependence of a 'well off' agriculturalist, belonging to the same broad economic category, tends to be high. Thus occupation appears to be an important factor mediating dependence on forest resources for income.

The traditional occupational pattern of a tribe or sub group, appears to be another important factor influencing the quality and

extent of dependence on forest resources. As mentioned earlier, the Naiks were never an agricultural community, and were earlier totally dependant on income from sale of forest produce, or on daily wage labour. Traditionally, the Naiks have collected various types of forest produce for sale. This included, 'gum' from the dhawra and the moona, honey, leaves of khakra, fruits such as amla and jamun and leaves of the ankda plant (used in tanning leather). They have also been skilled at making charcoal for sale. In fact, some of the above activities, such as collection of gum or honey for sale, are popularly considered as the work of the Naiks, and even today a non Naik considers it almost a stigma to engage in these.

The Naiks continue to look upon forests as an important source of income, often buying the days rations from the money they earn the same day, from the sale of forest produce.

It would appear, therefore, that **sub groups that have traditionally depended on the collection and sale of forest produce, and have developed their skills at the same, continue to show a higher dependence on forest produce, even in the present context.**

The next part of the discussion will focus on the ***gender dimension of forest dependence***. As mentioned earlier, much has been written about the greater material dependence of women, especially poor women, on forest resources, a dependence which GED (Gender, Environment and Development) approaches emphasize, is rooted in the way in which wider social relations of gender structure resource

use, rather than in any 'special' affinity of women with the environment, as claimed by ecofeminists.

Information about the way in which gender defined the division of responsibilities with respect to forest usage, was obtained through focus group discussions, household interviews with men and women, and through questionnaire surveys.

It would appear that in this area too, the prevailing gender based division of labour within the household, defines several tasks related to the collection of forest produce for domestic purposes, as women's work. This includes the task of fuelwood and fodder collection. A sample survey of households from different wealth based categories revealed that in all households, women are primarily responsible for fuelwood and fodder collection, though sometimes assisted by male or female children. In only one household, belonging to the 'average' category, was the task of fuelwood collection shared by the male adults of the house. This was because the family brought back several cartloads of wood from a distant forest several times a year, to last the whole year. On such occasions, several members of the family, including the males, went together for the expedition.

Men, on the other hand, were found to be responsible for meeting the comparatively intermittent, timber related needs of the household. According to local custom, after marriage a son moves out of his parents house into his own house. Building of houses is thus quite a regular activity, for which timber is gathered gradually over the years. Similarly, small timber is required every

year or two, to fashion out the plough and other agricultural implements.

It is significant that the tasks assigned to women are of a regular and recurrent nature. Fuelwood and fodder is required with relentless regularity, requiring almost a daily expenditure of energy. For instance, women of Khutkar and Chari Nishalphaliya spend between 2 to 4 hours daily, for six to eight months per year, collecting fuelwood. Due to the more formalised protection system in Khutkar, the women of this user group are forced to go to the open access forests of Sattalav and Bhatpura, a distance of 2 to 3 kilometres. Most of these forests, being open access, are in a highly degraded condition, and fuelwood collection often involves digging out the remaining roots of trees and shrubs. Fuelwood collection is relatively less time consuming in the Charada area.

Not only is fuelwood collection an arduous, ongoing task, it is also hazardous. Women of both groups reported harassment by either the Forest department staff, or the chowkidars of their own or adjoining user group.

Women from livestock owning families are also responsible for fodder collection, an equally time consuming and arduous activity. Fodder collection often involves climbing trees and perching there precariously, in an attempt to cut leaves for fodder. Fodder collection activities continue daily, throughout the winter and summer months. This is especially true for women belonging to families which own no irrigated land, and consequently are unable to grow green fodder in the dry periods of the year. As with

fuelwood, collection of fodder too takes between 2 to 4 hours per day for women of the Khutkar user group, and between 1 to 2 hours for the women of Charada.

It is thus evident that there is a clear demarcation of labour between men and women, where forest usage for meeting domestic requirements is concerned, and that the greater dependence of women on forests is rooted in the prevailing gender based division of labour.

It had earlier been discussed that gender linked differences in rights to private property influences the relationship of women with common resources. It had been suggested that for women who have little or no access to any other source of income, given that income from private property is controlled by the male heads of the household, income from common pool resources has a special significance. Information on this aspect was obtained through the household and sample surveys, and through group discussions with the men and women of both groups. It would appear that a gender linked pattern to dependence on forest resources for income, is very much in evidence. Information obtained indicated, for instance, that it is primarily women and children that engage in the collection and sale of timru leaves during the timru season. This was substantiated through discussions with the village agents responsible for purchase of timru leaves from the villagers. A partial list of villagers who had sold timru bundles to an agent in Khutkar, was obtained[4]. In this list, 43 per cent were women, 28

---

[4]. It needs to be pointed out that the sellers of the timru bundles are not always the ones who actually collected the leaves. During the timru season, family members often divide between themselves the various tasks involved in leaf collection, bundling and sale.

per cent were children, and the remaining 28 per cent were men. While the women and children belonged to all wealth based categories, including the 'well off', almost all the men belonged to the economically backward Naik community. It was reported that males engage in timru leaf collection only if other avenues for income and employment, such as daily wage work, are not available. Since the timru season falls in summer, when migration is at its peak, few able bodied men from the economically weaker sections remain in the village, unless there are some compelling circumstances. It can therefore be inferred that it is the resource poor whose dependence on forests as a source of income is greater. Even women of better off families in this area can be considered resource poor, as discussed earlier, given women's limited rights to income from private property and other productive resources.

Through talks with women it appeared that the income thus obtained was used by them in different ways. While some women used it to run the household, others treated it as their 'own' income, buying jewellery or clothes with it. According to a woman from village Khutkar, women and children often used the income from timru to buy clothes and jewellery for the marriage season, which also falls in summer at about the same time. A man from Charada commented, that women valued the timru tree primarily because it provided them with income to buy bangles and earrings. The point that emerges is that the income women and children in this area, earn from common pool resources such as forests, tends to be their own income. These findings support earlier research on this issue (Agarwal, 1992; Sarin, 1995).

This study thus indicates that women in this area, even women belonging to 'well off' families, do have a greater material dependence on forests, both in order to meet the sustenance need of their families, as well as to meet their own needs for an independent source of income.

SECTION III: ISSUES OF EQUITY, EFFICIENCY AND SUSTAINABILITY IN COMMUNITY BASED FOREST MANAGEMENT

From the earlier discussion it is clear, that the patterns of dependence on forests, and consequently the patterns of forest usage, differ by gender, and to some extent by class, and by traditional and present occupation. The priorities and needs of different subgroups within a village community, or within a household, are therefore anything but homogeneous.

Not only are there multiple users of scarce forest produce, but very often each species has multiple (and often conflicting) uses. The dhawra, for instance, is valued by the Naiks for its gum, and by women for its high quality fuelwood. Teak is valued by men for its timber, by women for fuelwood, and by the Naiks as a quality input for charcoal making. In such a situation it is revealing to study which user, and which usage, is prioritised in the forest management system adopted.

While on the surface it would appear that for both groups the system adopted has been reasonably equitable and successful, a closer analysis would be useful. How in fact have the various sub groups benefitted from the system? What has been the participation of different sub groups in decision making? What has been the

impact of the management system adopted on the different resource users and on the forests?

The Khutkar user group will be discussed first. By all accounts, in comparison with the scenario in the early eighties, the forests of the Khutkar user group have shown considerable improvement. Significantly, the forests have regenerated naturally, only through protection. With the regeneration of forests, the availability of fuelwood and fodder has increased, as has the availability of NTFP's, such as timru and khakra leaves.

The forest vegetation is dominated by young teak trees. There are timru, khakra, neem and aledi trees in fewer numbers. Dhawra and a few other species survive, but in a highly mutilated condition. There is some undergrowth of kada, a fast growing fuelwood species, which shows evidence of being badly hacked. The vegetation in fact tells its own story.

While teak has always been the dominant species in the area, local and historical accounts maintain that there have been a diversity of other species, few of which remain today. It is not difficult to understand the reasons behind the limited biodiversity found presently. There is an overwhelming emphasis on the protection and regeneration of teak, almost to the exclusion of all other species. Teak has been declared a protected species by the user group. Limited protection is enjoyed by timru and khakra. Dhawra, kada and almost all other species are seen as fuelwood species, the branches of which can be cut during the yearly 'chutti' (holiday) provided for fuelwood collection.

It is interesting and revealing to explore how such rules have come about, who has framed them, and whose priorities they meet.

As mentioned earlier, the existing gender based division of labour allocates the task of timber collection to the males. It also needs to be recalled, that the decision making structure is totally male dominated. In Khutkar, male representatives of every phaliya take part in the decision making. Given this scenario it is but natural to expect that the views and priorities of males, especially those from economically better off families, are represented more in the forest management plan. It is not surprising therefore, that such emphasis has been placed on the protection of teak. While there is no doubt that teak does meet very crucial local needs for timber, and is a tree of great commercial importance, it definitely does not meet any of the ongoing needs of the various other subgroups. Its use as firewood, for instance, is totally prohibited, and women found cutting teak are strongly sanctioned, both by the watchmen, and within the house by their husbands.

The case of the dhawra tree illustrates the manner in which existing power relations within the village influence the decisions taken, and the priorities decided upon, for forest management. Dhawra is considered a special tree by the Naiks, because of the income (from sale of gum) that it provides on a regular basis. However, non- Naiks usually consider it a fuelwood species. During a discussion with Naik families in Chari Nishalphaliya, the Naiks observed that they would prefer that dhawra also be declared a protected species, like teak. They felt, however, that they were not in a position to impose their priorities on the rest of the

group. They had never managed even to raise the issue in a village meeting, the general attitude being that "even if we do, who will listen to us". This is very much in keeping with the hierarchy of social relations observed within the village, where the Naiks are considered socially 'inferior'. The dhawra, therefore, continues to be considered a fuelwood species.

The greater dependence of women on forests for fuelwood and fodder was discussed in the earlier section. Women's interests and priorities obviously lie in devising forest management systems that increase both the availability and the accessibility of firewood and fodder. However, given the social reality where women are excluded from all village decision making structures, their priorities have evidently not been addressed adequately. From the point of view of the males, women's priorities have, in fact, been taken care off, since fuelwood cutting is permitted for two to three days in a year. However, discussions with women reveal that the firewood that can be cut in such a short period does not last for more than a month at the most. For the rest of the year the problem of fuelwood still remains.

The fact that the forests have been closed off completely (except for one or two days a year) implies, that most of the costs of the decision to undertake protection are, in fact, borne by women. Women are not only forced to go to more distant forests, they now also face additional harassment from the chowkidars of their own village, those of neighbouring villages, and by the men within their families, if they are caught 'stealing' firewood from the protected forests. This is in addition to the harassment they had

already been exposed to, from the forest department. The decision to close off the forest without providing for adequate alternatives, has left women in a precarious position. They are forced to steal if they are to meet the family's demand for cooking energy. Conflicts between women and the watchmen are consequently on the increase. It is not surprising that women have been popularly labelled as thieves, and as destroyers of the forests by the male members of the group. The role of women as 'destroyers' in this context is incompatible with ecofeminist perceptions of women as 'protectors' and 'nurturers' of the environment. The response of women can only be understood if located in the existing relations of gender. While women bear a major portion of the responsibilities for collection of forest produce, they enjoy few rights in decision making with respect to the management of these resources, leaving them with little option but to engage in petty stealing.

Instances of petty thieving and stealing by women, and by the other poor members of the group, can also be seen as 'weapons of the weak' (Scott,1985), i.e. petty acts of resistance which are resorted to by the 'less powerful'. Such acts of resistance reflect the resentment harboured by marginalised sub groups, resentment which cannot be articulated openly for fear of sanction. Scott has pointed out that, in many instances, it is precisely such petty acts of defiance and non compliance, which have been responsible for changing unpopular systems. That the issues of equity discussed above, have implications for the efficiency and the sustainability of the institutional arrangement, can then be inferred. As long as the interests of some sub groups continue to be marginalised, theft and illicit felling will continue. For instance, if gond from the

dhawra tree is not available during a crisis period, a Naik family might have little option but to sell a bundle of fuelwood stolen from the forests instead. Similarly, women will continue to cut for fuelwood on the sly, if it is not accessible otherwise. It is this sort of illicit felling which is likely to prove most detrimental to the health of the forest, and to the sustainability of the forest management system adopted.

Also, as mentioned earlier, the forest management priorities adopted by these groups, have had a negative impact on biodiversity. As long as timber related needs continue to be prioritised over the needs of other sub groups, teak and other timber species will predominate. This may lead to the eventual eradication of all other species, a process which is already well underway. It would then appear that incorporating the needs and priorities of the various groups of resource users would also be in the interests of biodiversity i.e equity issues are related to those of environmental biodiversity.

At the same time 'closing off' a particular forest area, in effect, transfers the pressure for forest produce to other open access areas in the vicinity. This has serious implications for the long term sustainability of the forest management system, as well as for the health of the ecosystem. What will happen when these open access areas are totally degraded? Will theft and conflicts within the group increase, so that its very existence is threatened? Sarin (1995a), in the context of the neglect of women's priorities so commonly observed in forest management initiatives, notes that 'a community based system of forest management which compels half the

community to meet its needs from the other, yet unprotected forest areas, can only be sustained for as long as there continues to be such other forest areas'.

Evidently then, ignoring the priorities of women and other marginalised groups, can prove detrimental to the sustainability and efficiency of the forest management system, as well as to environmental biodiversity.

In the case of the **Charada user group** too, the hamlet based relatively informal forest management system in prevalence, has definitely had a positive impact on the forest resource base. Forest patches under protection are visibly better stocked than those which continue as open access resources. It is significant, however, that even here teak is the most prominent and visibly better protected species. Most other tree and shrub species have been subjected to harsh and indiscriminate treatment. The reasons behind this are similar to what have been already discussed for the Khutkar group.

The impact on women has not been quite as dramatic as discussed for the Khutkar user group, due to the relative abundance of forests in the Charada area. However, since the cutting of teak is prohibited, and few other species have been allowed to remain, women often do not benefit from the forests supposedly protected by them, and closest to them. For fuelwood they often have to go some distance away to an open access area, since few or no fuelwood species remain in their own patch. Thus a task which may have taken about half an hour, might well take over an hour under the circumstances.

In a visit to the thickly forested village of Vena (near Charada), women were seen to be going to an open access area to cut fuelwood. Paradoxically, some of the seemingly best forests in the area were right behind their houses, and under their protection. It is evident that management interventions are not designed with the priorities of women in mind, even in the Charada area.

Thus, while women bear most of the costs of protection, given a scenario where men are often away from their houses and women have to bear the responsibility of driving away the intruders from the forest patches protected by them, they seem to be enjoying few of the benefits. The gap between gendered responsibilities and rights is very much in evidence.

What the above analysis essentially points to is that unequal social relations are often reproduced in community based initiatives for the management of natural resources such as forests, and that such issues of equity have obvious implications for the efficiency and the sustainability of the management system.

If issues of equity are indeed linked with those of efficiency and sustainability, as this study seems to suggest, it would be useful to explore the implications of this insight for policy. Given the social reality in most of urban and rural India where gender, class and caste inequities are deeply entrenched, there is no doubt that no policy level change by itself can alter this macro reality. However, appropriate changes at the policy level can at least facilitate change in the desired direction. The recent Panchayati

Raj Amendment, for instance, which ensures that one third of the seats in Panchayat bodies are reserved for women, is likely to facilitate the greater representation of women in other village level institutions also. Similarly, in instances where norms for the participation of communities in natural resource management are being formulated by the Government, as under JFM, explicit efforts to ensure the equal representation of women and other marginalised sections in decision making and in the sharing of costs and benefits, need to be made. This will ensure that such sub groups are not legally barred from access to such resources.

These policy thrusts are especially crucial, given that the above analysis suggests that as and when an open access resource is brought under a common property regime, the possibility of the rights of the resource poor (including of women) being reduced considerably, is very real, further strengthening institutional barriers to the access of these sections to such resources. While there is enough evidence pointing to the fact that the privatisation and nationalisation of common pool resources has, in effect, reduced the access of marginalised sections to such resources, this study suggests the likelihood of the same process recurring in instances where such resources are brought under common property regimes. This has serious implications for policy. Thus, while common property regimes for the management of common pool resources such as forests are certainly desirable, in that the power to control and manage such resources is devolved to local communities, so that resource users are simultaneously resource managers, the possibility of such regimes marginalising the resource poor, needs to be guarded against.

Chapter 5
SUMMARY, CONCLUSIONS AND IMPLICATIONS FOR POLICY

In the context of the rapid degradation of forest resources the world over, and the negative impact of this process on forest dependent communities and on the environment, the need to evolve alternative strategies for forest management has increasingly been articulated. In several countries, including India, the negative repercussions stemming from the nationalisation of forests, are being recognised. Community management of natural resources is being advocated as a viable alternative strategy under certain circumstances, to nationalisation and privatisation.

This study focused on the spontaneous emergence of individual and community based efforts towards forest protection and management, in the Santrampur taluka of Panchmahals district, Gujarat. These efforts have been remarkably successful in protecting and regenerating degraded forests. The study clearly indicates that common property resource management systems can, in certain situations, be extremely effective.

Some of the ***conditions which favoured environmental action*** (both individual and community based) in this area have been identified. These include:

(a) People have lived in the area for several generations and are likely to continue doing so in the foreseeable future. There is therefore a sense of permanence, and a definite stake in the conservation and sustainable use of local resources.

(b) A majority of the local (especially tribal) population continues to be highly dependent on forests as a source of fuel, fodder, nutrition, timber and supplementary income.

(c) Deforestation, aggravated by two periods of drought in the eighties, has resulted in a scarcity of forest produce. The experience of scarcity, and the resulting immediacy of the threat to survival, has prompted positive environmental action.

(d) There is also a simultaneous recognition of the fact that if further forest degradation is to be checked, the initiative will have to be taken by local people themselves, since the forest department staff is either unable to play this role effectively, or is linked with vested interest groups which are actually promoting deforestation.

In addition, certain pre-existing characteristics of the local community structure and its interface with the resource, have facilitated *collective action*. These include:

(a) Strong community ties, and a tradition of meeting regularly on social and festive occasions.

(b) The presence of highly respected traditional leadership, and the existence of well defined mechanisms for conflict resolution.
(c) A relatively homogeneous social structure, with low levels of social and economic differentiation.

(d) Traditionally well defined boundaries of the resource, and of the user group dependent on it.

Some of the factors which have contributed to the *emergence of different forms of community based management* i.e. the more formalised user groups with a larger membership, and the smaller, more informal, hamlet based systems, have been the following:

The nature and characteristics of the resource itself has influenced the choice of the management regime appropriate for its governance. In the Vankdi cluster, the relative abundance of forest area, as well as the dispersed and scattered pattern of settlement, has facilitated the emergence of smaller, hamlet based systems. On the other hand, the consolidated patches of forest in the Chari Boriya cluster, and the relative scarcity of forest resources, has forced people to negotiate access even to distant forest patches, and has encouraged the emergence of larger user groups.

A related factor has been the basis on which traditional user rights to forest resources have evolved in the two areas. Due to forest resources being in consolidated patches surrounding a cluster of villages in Chari Boriya, each phaliya has probably had to negotiate access to at least some forest area over the years, especially phaliyas with no forest patch adjacent to them. The size of the user group has then, even traditionally, been larger in the Chari Boriya cluster. In the Vankdi cluster, people have traditionally only utilised the forest patches adjoining their

houses or hamlets to meet their requirements for forest produce, given the relative abundance of forests in this area.

The size of the user group has influenced the need for the adoption of formal rules and regulations. The larger size of the user group in the Chari Boriya area, has necessitated the adoption of clearer and more formalised rules.

The rapid destruction of the more limited forest resources in the Chari Boriya cluster, resulting in the simultaneous experience of a scarcity of forest produce, prompted collective action by a larger user group. Such acute scarcity has still not been experienced by the people of the Vankdi cluster, thereby obviating the need for collective and organised environmental action.

At the same time, canal irrigation to a large part of the Chari Boriya area, by increasing production of green fodder and cooking fuel from non forest lands, has enabled user group members to forsake/ reduce extraction from forests to facilitate regeneration. This has helped facilitate the adoption of forest protection and management in a relatively friction free manner.

An analysis of the *extent of dependence on forest resources* has revealed that the majority of households in both user groups depend on forests for meeting at least a part of their domestic requirements of fodder, fuelwood, fruits and seasonal vegetables, and for the grazing of livestock. While the dependence on forests as a source of direct income is marginally lower, the analysis indicates that forests continue to play a significant role in the

economy of both groups, both directly and indirectly, even in the present context. Income from sale of forest produce was found to be higher in the Charada user group where forest resources are relatively more abundant. Thus the analysis indicated that dependence on forest resources is also a function of the availability and accessibility of the resource. It was noted that dependence was a dynamic rather than a static concept, the extent and quality of which changes in response to economic, political and social changes at the micro and the macro levels.

An analysis of the *extent of dependence on forest resources, by class*, revealed that the poorer sections are more dependent on forests for meeting domestic requirements of fuelwood and fodder, as compared to the better off sections. However, the extent of dependence on forest produce as a source of income did not vary across wealth based categories in any significant manner, a finding not entirely in keeping with some of the conclusions of earlier research on the subject. This was attributed to the fact that (a) the extent of social and economic differentiation in this area is not very high, because of which some of the better off tribal families, especially the women from these families, continue to see forests as a source of supplementary income; and (b) that forests are no longer a source of regular and stable income, so that the poorer sections prefer to take up the more lucrative employment options available through migration. That dependence on forests is also a function of the availability of alternative employment options in the area, was highlighted.

The analysis therefore indicated, that the relationship between economic class and forest dependence is complex, dynamic and highly situation specific, influenced by both micro and macro level factors. Besides class, factors of present and traditional occupation were seen to be important in determining forest dependence. For instance, the forest dependence of families with job holding members was seen to be marginal. The dependence of families belonging to tribes (such as the Naiks), whose dependence on forests has traditionally been greater, was found to be higher even in the present context.

The *patterns of dependence on forest resources, by gender,* were also explored. Patterns of usage, and consequently forest management priorities, were found to differ significantly, by gender. As far as dependence on forest resources for domestic requirements is concerned, it was observed that women are primarily responsible for tasks such as the collection of fuelwood, fodder and other subsistence goods, tasks of a more recurring and arduous nature. Men, on the other hand, are seen to be primarily responsible for meeting the comparatively intermittent, timber related needs of the household.

The dependence of women on Non Timber Forest Produce as a source of income was also higher. Income from forests was observed to have a special significance for persons with little access to private assets and sources of income. In the studied user group they comprised women, children and men from economically backward families. The analysis therefore indicated, that the dependence of the resource poor on common pool forest resources is greater. The

category 'resource poor' includes women, even those from better off families whose control over productive resources is minimal. Interacting and overlapping layers of class and gender are more appropriately seen as influencing dependence on forest resources.

Equity issues within community based forest management systems were explored, to understand how conflicting interests of the multiple users of scarce forest resources, are being reconciled in these initiatives. It was found that the forest management systems developed by both clusters have prioritised the timber related needs of the most powerful section in the social hierarchy, i.e. the non- Naik males. As a consequence, teak was observed to be the predominant and visibly better protected species, while other species, with the exception of timru and khakra, were often mutilated and badly hacked. Few systematic efforts had been made to incorporate the priorities of women or the Naiks, in the forest management practices adopted by either cluster. Thus, while most of the costs of the decision to begin protection have been borne by women and the economically weak, the corresponding benefits accruing to these sections have been of a limited magnitude. It was concluded that existing social inequities tend to get reproduced in community management initiatives, influencing the priorities decided upon for forest management.

That *issues of equity are linked to the efficiency and the sustainability of the institutional arrangement*, was also discussed. It was pointed out that illicit felling, thieving and other environmentally destructive practices, tend to increase when the priorities of certain sub groups are ignored, threatening the

very stability of the institutional arrangement evolved. Further, inequitable forest protection regimes often survive, because of the presence of open access areas in the vicinity, to which pressure for forest produce can be transferred. However, once such open access areas are also destroyed, the sustainability of such forest management systems can be threatened. Also, an exclusive focus on the priorities of only certain sub sections, can prove to be detrimental for maintaining biodiversity and ecological balance.

It was emphasised that while common property regimes for resource management are desirable, in that power for the management and control of resources is devolved to local communities, the possibility of these regimes marginalising the rights of the resource poor, especially of women, needs to be guarded against.

POLICY IMPLICATIONS

This study establishes that common property regimes for forest management not only exist, but have been remarkably successful in regenerating degraded forests where they are functional. Since the desirability of the emergence of such community based initiatives in forest management cannot be disputed, especially in the context of India's rapidly deteriorating natural resource base, some of the policy measures that need to be adopted to nurture, strengthen and sustain these initiatives, in Gujarat and in other Indian states, are suggested.

* An unambiguous official recognition of the rights of such groups to organise, to manage and control their resources, and to derive benefits from them, needs to be accorded.

* At the same time policy measures that accord recognition to such spontaneous initiatives, should be flexible and sensitive enough to accommodate the diversity within them, rather than attempting to 'straitjacket' them into uniform institutional structures.

* It is also important that policy measures recognising common property regimes in natural resource management, ensure that the rights of women and of marginalised sections, do not get 'legislated out' under such regimes.

This study of community based initiatives in forest management also suggests 'lessons' for policy makers. As efforts to elicit community 'participation' in the management of natural resource such as forests, groundwater, fisheries and common lands, are of late gaining legitimacy even in government circles, it is useful to identify some pointers for the design of interventions from the 'outside'.

* The study clearly indicates that the nature and characteristics of the resource itself influences the nature of the regime appropriate for its governance. Given that the physical characteristics of a resource may vary within and between regions, there can be no standard 'model' or

'blueprint' institutional structure which is appropriate for the governance or management of all similar resources. The limitations of any policy which stipulates in advance the appropriate institutional structure at the village or panchayat level for the management of a resource, thus become evident.

* Self initiated management groups often build upon existing leadership structures and community institutions. Any policy designed to garner the 'participation' of the user group, should make a serious attempt to identify and strengthen such institutions if they exist, rather than create new institutional structures. The very process of creating new institutions in such situations, may weaken or destroy, existing, more durable ones.

* Resource use patterns established through tradition, or over time, play an important role in determining the boundaries of a user group. Instead of stipulating that the boundaries of the user group must coincide with the boundaries of an administrative unit (such as a revenue village or a panchayat), any policy framework should permit flexibility to accommodate local variations in user group boundaries, as defined by the users themselves.

* This study also suggests that bringing *de facto* open access forest resources under common property regimes may strengthen institutional barriers to women's access to such resources. Policy aimed at facilitating community management of natural

resources must ensure that women, in their own right, are not institutionally debarred from participation in management and decision making, and in using and benefiting from such resources.

* Local resource users have a stake in the regeneration and the sustainable use of the resource. Their interests may often conflict with the revenue orientation of the state. To elicit people's genuine participation and cooperation, state policies for natural resource management need to give priority to the interests and needs of local users, a point that has been repeatedly articulated by the user groups in the Chari Boriya cluster. Revenue generation should be considered only in situations where there is surplus production, in excess of local requirements. Profits from such surplus should be shared with the user groups on a mutually accepted basis.

To conclude, policy measures can play an important role in supporting and strengthening community based initiatives in forest management. At the same time, policy makers can draw from such local initiatives, while designing appropriate interventions for increasing 'community participation' in the management of forests and other natural resources. It is obvious that policy level interventions need to be both flexible, and sensitive to local variations in the characteristics of the resource and of the user group. The desirability of devolving control and management of natural resources to local level bodies, best equipped to respond to local variations, is evident.

Appendix 1

Research Methods Used in the Study

Key Informant Interviews: Interviews with several knowledgeable people in the two clusters were conducted to gain information on several issues. Persons from the older generation were able to reconstruct the history of the forests and of the community. Village leaders traced out the evolution of the present forest management system. Phaliya leaders, especially those belonging to marginalised groups such as the Naiks provided the views of their phaliya about forest management.

Household Survey: A complete household survey of all the families in both user groups was conducted to gather basic socio economic data. The survey collected basic information on:

(i) Family size and composition;
(ii) Size of landholding, and availability of irrigation;
(iii) Number and composition of livestock;
(iv) Main and subsidiary sources of income;
(v) Details about migration;
(vi) Details about collection of forest produce for domestic and/or commercial purposes.

Household Interviews: Household interviews were conducted in both user groups to gain information on several issues. These included the distribution of responsibilities with respect to forest usage within the household, the views of the different members of the household about the forest management system evolved by the group, etc.

Spatial Methods: Participatory mapping tools were employed, drawing from the work of Chambers (1985).

Focus Group Discussions: Several focus group discussions were included primarily to gather information about the views of different sub groups about the forest management system and to identify the priorities of different sub groups vis a vis forest management. Separate focus group discussions were conducted with the women and men belonging to different phaliyas and with the Naik community.

Wealth Ranking: A modified form of the wealth ranking method proposed by Grandin (1988) was used. Households in both the user groups were first classified into four categories[1] based on Gross Cropped Area(GCA) available to them. GCA was used as a basic indicator since the primary occupation of a majority of the population in the area continues to be agriculture. This categorisation was then shared with three to four knowledgeable persons from each user group. They were asked whether the GCA based classification of households was in accordance with their perception and knowledge of the economic status and general wellbeing of the concerned households.

The purpose of the exercise was twofold: (a) To classify the members of both user groups according to their socio economic

---

[1]. The following categorisation was adopted:

Category 1: GCA less than 2.5 acres
Category 2: GCA between 2.51 and 5.00 acres
Category 3: GCA between 5.01 and 10.00 acres
Category 4: GCA over 10.00 acres

The logic used to arrive at the above categories was as follows. On the basis of the information collected from the primary survey it was observed that, in general, for most households with GCA below 2.5 acres, recourse to migration and to daily wage labour was an essential survival mechanism. Households with GCA between 2.5 and 5.00 acres were commonly seen to resort to daily wage labour, but within the village. Many households with GCA between 5 to 10 acres were capable of making ends meet, while those with GCA above 10 acres were better off than the rest. Of course there were exceptions to this general pattern, as when a household with low GCA had a member with a well paid job.

status; and (b) to gauge the extent to which classifications based on land ownership are valid.

On the basis of the suggestions offered by the informants certain households were reclassified. The main reasons used for reclassification were as follows:

(i) Households with an important source of income other than from agriculture, such as from a job, a business, practice of a skill (masonry, carpentry etc.) were assigned to a higher category;
(ii) Households with able bodied workers within the family were `pushed up' while widows with small children, or families with a greater number of dependents were `pushed down';
(iii) Households with industrious or hard working members were ranked higher;
(iv) Families with alcoholics, or with mentally retarded or mentally ill members were ranked lower;
(iv) Households in debt were ranked lower.

It is significant that the informants used several other criteria other than size and quality of landholdings to arrive at a consensus. They arrived at an estimate of status and wealth using a long term perspective, and by taking many facets including family expenditure patterns into account. Thus for instance a contractor or a migrant labourer whose earnings in the current year have been substantial, but whose earnings are variable or precarious in the long run, was not seen as `well off' by the informants. It is unlikely that the type of information used by them to arrive at an estimate of wealth would have emerged in a typical income survey, which arrives at an estimate of economic status using a limited information base and a short term perspective.

Sample survey: A sample consisting of 10% of the households belonging to different wealth categories was selected through

stratified random sampling procedures. The following information was obtained:

(i) An estimate of the total income of the family from various sources;

(ii) forest produce being collected for commercial purposes and the proportion of the households income being met through sale of forest produce;

(iii) forest produce being collected for domestic consumption, and the approximate value of this;

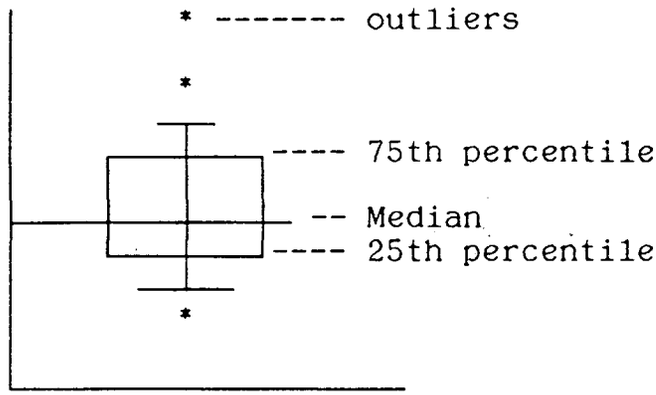
(iv) patterns of dependence on forest resources within the household by gender.

Activity Profile: This method, proposed by Overholt et al (1985), was employed for households selected for the sample survey, to obtain the gender based division of labour within the household, with respect to forest usage and collection of forest produce.

Appendix 2

The Box and Whisker Plot

The Box and Whisker plot shows summary statistics for a distribution. It plots the median, the 25th percentile and the 75th percentile, as well as values that are far removed from the rest (outliers). The figure below shows a typical box and whisker plot.



The plot provides information about the distribution of observed values. If the distribution is symmetric about the median, then the median cuts the box in half. The length of the box corresponds to the interquartile range, and indicates the spread or variability of the observations. These plots are particularly useful for comparing the distribution of values in several groups.

Appendix 3

Botanical Names of Selected Tree and Shrub Species

Amla	:	Emblica Officinalis
Awal	:	Cassia Auriculata
Dhawra	:	Anogeissus Latifolia
Gugal	:	Boswallia Serrata
Jamun	:	Syzygiun Cumini
Kada	:	Holarrhena Antidysenterica
Khakra	:	Butea Monosperma
Mahuwa	:	Bassis Latifolia
Moona	:	Lanea Grandis
Neem	:	Azadirachta Indica
Puwad	:	Cassia Tora
Teak	:	Tectona Grandis
Timru	:	Diospyros Melanoxylon

Glossary

Agyavan	: Traditional leader
Atak	: Clan
Baj Dona	: Cups and plates made from the leaves of the khakra tree.
Bidi	: Tobacco rolled in timru leaves
'Chutti'	: Literally means holiday. In the Chari Boriya groups fuelwood cutting is permitted only on certain days a year, locally referred to as 'chutti' days.
Chowkidar	: Watchman
Dhuleti	: The day following the Holi festival
Diwali	: A festival
Gond	: Edible gum collected locally, primarily from the dhawra. Also from trees like moona and aledi.
Holi	: A festival
'Kuccha' road	: Non metalled road
Panchayat	: Village council, an elected body
Patta	: Leaf
Patwari	: Person responsible for maintaining revenue records at the panchayat level
Phaliya	: Hamlet
'Pucca' road	: Metalled road
Rajwadi times	: Period prior to Independence, when this Taluka was a princely state

BIBLIOGRAPHY

Agarwal, Anil and Narain, Sunita (1989) : ***Towards Green Villages***, Centre for Science and Environment, Delhi.

Agarwal, Anil and Narain, S (1991) : "Strategies for the Involvement of Landless and Women in Afforestation: Five Case Studies from India", ***A Technical Cooperation Report, WEP, ILO***, Geneva.

Agarwal, Bina (1992) : "The Gender and Environment Debate: Lessons from India", ***Feminist Studies***, 18, No. 1.

Arnold, J.E.M. and Campbell, J.G (1986) : "Collective Management of Hill Forest in Nepal: The Community Forestry Development Project", in National Research Council (ed) ***Proceedings on the Conference on Common Property Resource Management***, National Academy Press, Washington D.C.

Arnold, J.E.M. and Stewart, W.C (1989) : "Common Property Resource Management in India", ***Report to India Agriculture Division, World Bank***, Washington D.C.

Arnold, J.E.M. and Stewart, W.C (1991) : "Common Property Resource Management in India", ***Tropical Forestry Paper No. 64, Oxford Forestry Institute***, Oxford University, Oxford.

Arnold, J.E.M (1990) : "Common Property Management and Sustainable Development in India", **Working Paper 9**, ***Department of Forest Resources***, University of Minnesota, USA.

Bose, P.K (1978) : "Stratification Among the Scheduled Tribes in the Vadodara, Sabarkantha and the Dangs District of Gujarat", ***Working Paper, Centre for Social Studies***, Surat.

Bannerjee, N (1987) : "Women's Work and Family Strategies- A Case Study from Bankura", ***Mimeo, CWDS***, New Delhi.

Berkes, F. et al. (1989) : "The Benefits of the Commons", ***Nature***, Volume 340.

Berkes, F (ed) (1989) : ***Ecology and Community Based Sustainable Development***, Behaven Press, London.

Broad, Robin (1994) : "The Poor and the Environment: Friends or Foes", ***World Development***, Volume 22, No.6.

Bromley, D.W (1991) : ***Environment and Economy: Property Rights and Public Policy***, Blackwell Inc. MA, USA.

Bromley, D.W (1989) : Property Relations and Economic Development: The Other Land Reform", ***World Development***, 17 (6), June 1989.

Bromley, D.W.,Cernea, M.M (1989) : "The Management of Common Property Natural Resources: Some Conceptual and Operational Fallacies", *World Bank Discussion Paper No. 57*, World Bank, Washington D.C.
Centre for Science and Environment (1985) : *The State of India's Environment 1984-85: The Second Citizen's Report*, CSE, New Delhi.

Chambers, R (1985) : "Shortcut Methods for Collecting Social Information for Rural Development Projects" in Cernea, M (ed) *Putting People First*, John Hopkins Press, Baltimore.

Chopra, K et al. (1989) : *Participatory Development: People and Common Property Resources*, Sage Publications, New Delhi.

Ciriacy-Wantrup,S.V. and Bishop, R.C (1975) : "Common Property as a Concept in Natural Resource Policy", *Natural Resources Journal*, (15), October.

Colchester, Marcus (1992) : "Sustaining the Forests: The Community based Approach in South and South-East Asia", *United Nations Research Institute for Social Development*, Geneva, Switzerland.

Commander, S (1986) : "Managing India's Forests: A Case for the Reform of Property Rights", *Development Policy Review*, (4).

Dasgupta, P and Naler, Karl-Coree (1990) : "The Environment and Emerging Development Issues", *London School of Economics and Political Science*, University of London.

Deliege, R (1985) : *The Bhils of Western India*, National Publishing House, New Delhi.

Doshi, J.K (1969) : *Social Structure and Cultural Change in a Bhil Village*", New Heights Publications, New Delhi.

Enthoven, R.E (1909) : *Imperial Gazetteer of India*, Provincial Series, Vol I and II, Usha Publications, New Delhi.

Feder, E (1977) : "Agribusiness and the Elimination of Latin America's Rural Proletariat", *World Development* (5).

Fernandes, W. and Kulkarni, S (1982) : *Towards a New Forest Policy*, Indian Social Institute, Delhi.

Fertiliser Association of India (1991) : "Fertiliser Statistics", *Fertiliser Association of India*, New Delhi.

Forest Survey of India (1989) : "The State of Forest Report", *Ministry of Environment and Forests*, GOI, Dehradun.

Forest Survey of India (1991) : "The State of Forest Report", *Ministry of Environment and Forests*, GOI, Dehradun.

Gadgil, M and Guha, R. (1993) : *This Fissured Land: An Ecological History of India*, Oxford University Press, Delhi.

Ghate, R.S (1992) : *Forest Policy and Tribal Development*, Concept Publishing Company, New Delhi.

Goodland, R. et al. (1989) : "Meeting Environmental Concerns Caused by Common Property Mismanagement in Economic Development Projects", in F. Berkes (ed), *Common Property Resources: Ecology and Community Based Sustainable Development*, Belhaven Press, London.

Government of Bombay (1926) : *Gazetteer of the Bombay Presidency*, Volume VI-B, Rewakantha, Bombay and Surat Agency, Government of Bombay.

Government of Bombay (1927) : *Gazetteer of the Bombay Presidency*, Vol III-B, Kaira and Panchmahals, Government of Bombay.

Government of Gujarat (1972) : *Gujarat State Gazetteers: Panchmahals District*, Government of Gujarat.

Government of India (1988) : *National Forest Policy Resolution*, Government of India.

Government of India (1992) : "A GIS Based Approach for Forest Working Plan Revision- A Case Study in Santrampur Taluka, Panchmahals District, Gujarat", *Space Application Centre*, Ahmedabad.

Grandin, Barbara E (1988) : *Wealth Ranking in Small Holder Communities: A Field Manual*, Intermediate Technology Publications Limited, UK.

Hardin,G (1969) : "The Tragedy of the Commons", *Science*, (162).

Hardin,G (1994) : "The Tragedy of the Unmanaged Commons", *Trends in Ecology and Evolution*, (9).

Iyengar, Sudershan (1989) : "Common Property Land Resources in Gujarat: Some findings About their Size, Status and Use", *Gujarat Institute of Area Planning*, Ahmedabad, Gujarat.

Jackson, C (1993) : "Environmentalism and Gender Interests in the Third World", *Development and Change*, (24).

Jodha, N.S (1985) : "Population Growth and Decline of Common Property Resources in Rajasthan, India", *Population and Development Review*, (11).

Jodha, N.S (1986) : "Common Property Resources and Rural Poor in Dry regions of India" *Economic and Political Weekly*, (21).

Jodha, N.S (1991) : *Rural Common Property Resources: A Growing Crisis*, Gatekeeper Series No. SA 24, IIED, London.

Kaur, Ravinder (1991) : "Women in Forestry in India. Policy, Research and External Affairs", *Working Paper, Women in Development, World Bank*, Washington D.C.

Kelkar,G.and Nathan, D (1991) : *Gender and Tribe: Women, Land and Forests in Jharkhand*, Kali for Women, New Delhi.

Keshane, R; McGinnis, M; Ostrom, E (1992) : *Proceedings of a Conference Linking Local and Global Commons*, Harvard University, MA, USA.

Kulkarni, S (1989): "Forests: Law versus Policy", *Economic and Political Weekly*, April 22, (24).

Leach, M (1991) : "Women and the Environment: Traps and Opportunities", *Development in Practice*, March 1992.

Leach, M; Joekes, S; Green, C (1995) : "Editorial: Gender Relations and Environmental Change" ,*IDS Bulletin*, (26).

McKay, B.J. and Acheson, J.M (1987) : *The Question of the Commons: The Culture and Ecology of Communal Resources*, Tuscon, University of Arizona Press, USA.

McKean,M. and Ostrom, E (1995) : "Common Property Regimes in the Forest: Just a Relic From the Past", *Unasylva*, (46).

Misra, Rekha (1993) : "Gender in Community Development and Resource Management: An Overview", *International Council for Research on Women*, Washington.

Nadkarni, M.V et. al (1989) : *The Political Economy of Forest Use and Management*, Sage Publications.

Nath, Y.V.S (1960) : *Bhils of Ratanmal: An Analysis of the Social Structure of a Western Indian Community*", The MS University, Baroda.

Oakerson, R (1986) : "A Model for the Analysis of Common Property Problems", in National Academy of Science" (ed), *Common Property Resource Management*, National Academy Press, Washington D.C.

Ostrom, E (1986) : "An Agenda for the Study of Institutions", *Public Choice*, (48).

Ostrom, E (1985) : "The Rudiments of a Revised Theory of the Origins, Survival and Performance of Institutions for Collective Action" , *Working Paper 85-32, Indiana University*, USA.

Ostrom, E (1990) : *Governing the Commons: The Evolution of Institutions for Collective Action*, Cambridge University Press, New York.

Ostrom, E (1992) : *Crafting Institutions for Self Governing Irrigation Systems*, Institute for Contemporary Studies Press, California, USA.

Overholt, C. et. al (1985) : *Gender Roles in Development Projects: A Case Book*, West Hartford, Connecticut, Kumarian Press.

Quiggins, J (1993) : "Common Property, Equality, and Development", *World Development*, (17).

Rao, A (1986) : *Tribal Social Stratification*, Himanshu Publications, Udaipur.

Richards, John H. and Richards P. Tucker (1988) : *World Deforestation in the Twentieth Century*, Duke University Press, Durham.

Rocheleau, D.E (1995) : "Gender and Biodiversity: A Feminist Political Ecology Perspective", *Institute of Development Studies Bulletin*, (26).

Runge, C.F (1986) : "Common Property and Collective Action in Economic Development", in National Research Council (ed) *Proceedings on the Conference on Common Property Resource Management*, National Academy Press, Washington D.C.

Sarin, M and Khanna, R (1993) : "Women Organise for Wasteland Development: A Case Study of SARTHI in Gujarat", in Singh and Burra (ed) *Women and Wasteland Development in India*, Sage Publications, New Delhi.

Sarin Madhu (1995) : "Community Forest Management: Where are the Women?", *Hindu Survey of the Environment.*

Sarin, Madhu (1995a) : "Regenerating India's Forests: Reconciling Gender Equity With Joint Forest Management", *Institute of Development Studies Bulletin*, (26).

Saxena, N.C (1994) : "Panchayats and Common Land Afforestation" in Mukherjee (ed) *Decentralisation: Panchayats in the Nineties*', Vikas Publishing House Pvt. Ltd, New Delhi.

Scott,J.C (1985) : *Weapons of the Weak: Everyday Forms of Peasant Resistance*, Yale University Press, London.

Shah, Ghanshyam (1976) : "Stratification Among the Scheduled Tribes in the Bharuch and Panchmahals Districts of Gujarat", *Working Paper, Centre for Social Studies*, Surat.

Shah, P.G (1959) : *Naik - Naikdas: A Gujarat Tribe*, Gujarat Research Society, Bombay.

Sharma, K (n.d): "Macro Policies for Natural Resource management-Marginalisation of Poor Rural Women", *Occassional Paper 14, Centre for Women Development Studies*, New Delhi.

Shiva, V (1989) : *Staying Alive: Women, Ecology and Development*", Zed Books, London.

Singh, C (1986) : *Common Property and Common Poverty: India's Forests, Forest Dwellers and the Law*, Oxford University Press.

Singh, Katar (1994) : *Managing Common Pool Resources: Principles and Case Studies*, Oxford University Press, Delhi.

Tang, Shui Yan (1992) : *Institutions and Collective Action: Self Governance in Irrigation*, Institute for Contemporary Studies Press, San Fransisco, California.

Venkateswaran, S (1995) : *Environment, Development and the Gender Gap*, Sage Publications, New Delhi.

Wade, Robert (1988) : *Village Republics: Economic Conditions for Collective Action in India*, Cambridge University Press.

Watson, Dwight J (1989) : The Evolution of Appropriate Resource Management Systems" in Berkes (ed) *Ecology and Community Based Sustainable Development*, Behaven Press, London.

Westoby, Jack (1987) : *The Purpose of Forests*, Basil Blackwell, Oxford.