MANAGING VILLAGE PLANTATIONS THROUGH TREE GROWERS' CO-OPERATIVES: EMERGING ISSUES AND POLICY IMPLICATIONS

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Stream: Forestry

ABSTRACT

This paper seeks to examine the issues emerging from the crafting of institutional arrangement for the management of village common lands. This has been done by analysing six Tree Growers' Co-operative Societies (TGCSs), which are contemporary institutions, formed under the aegis of the National Tree Growers' Co-operative Federation (NTGCF). These TGCSs are involved in the rehabilitation and management of degraded village common lands.

The analysis of the sample TGCSs revealed that the various issues confronted in the management of plantations on village common lands are: encroachment of plantation site; distribution of benefits accruing from the new plantations among members and between members and non-members and geographical configuration of hamlets and plantation site. It was found that the formation of TGCSs is hampered by the problems in acquiring degraded revenue village common lands. The analysis of the sample TGCSs corroborates that performance of a TGCS is affected by geographical configuration of forest users from the plantation. These issues are not only related to TGCSs but also to Joint Forest Management (JFM) Programmes implemented in various parts of India. The paper argues that there is a need to clearly define the role of implementing agency and the government agencies. It also argues that the TGCS should be provided more flexibility to tackle these issues and the implementing agencies and Forest Departments should play a facilitating role by removing the obstacles in the way of formation of TGCS.

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1. INTRODUCTION

In most parts of India village common lands are treated like an open access resource in the absence of institutional arrangement for their management, and free riding has been a dominant strategy adopted by the village communities to appropriate most of those lands. This has resulted in the degradation of those lands, which suffer from what Hardin (1968) *called 'The Tragedy of the Commons'*. Of late, realising the need to restore and put a halt to further degradation of these lands. Many local level institutions - the contemporary institutions - are being formed under the aegis of the State Forest Departments, Non-Governmental Organisations (NGOs), National Tree Growers' Co-operative Federation (NTGCF) and other organisations to manage and rehabilitate village common lands. The task of crafting the institutions is to change the incentives so that free riding is no longer the dominant strategy (Ostrom 1990).

In this paper, an attempt has been made to examine the issues emerging from the crafting of institutional arrangement for the management of village common lands. This has been done by analysing six Tree Growers' Co-operative Societies (TGCSs) in the Panchmahals district of Gujarat State. These contemporary institutions have been formed under the aegis of the National Tree Growers' Co-operative Federation (NTGCF). These TGCSs are involved in the rehabilitation and management of degraded village common lands *de jure* either controlled by Village Panchayats or Revenue Department. But *de facto* these lands are left to open access and managed by none.

The paper is organised as follows. The research method is discussed in Section 2. Brief discussion about TGCSs and NTGCF, its origin, evolution and organizational structure are discussed in Section 3. Section 4 describes setting and profile of selected sample TGCSs and the cost of plantation. Issues confronting TGCSs are dealt in Section 5. In Section 6, we summarize the discussion and draw implication for TGCSs and Forest Protection Committees (FPCs) formed under the Joint Forest Management (JFM) programme.

2. RESEARCH METHODOLOGY

This study is part of a larger study, which explores the factors affecting the performance of community forestry management. This study uses the institutional analysis and development framework (IFRI 1996) which hypothesises that three sets of variables affect the performance of any local body of self-

governance. These variables pertain to physical factors, community related factors and a set of variables associated with institutional arrangements that determine the rules of games in any collective endeavour. The present paper however is based on exploratory survey of six TGCSs in Panchmahals district in the Gujarat State in India. The survey marks the beginning of a detailed research study being carried out under the Natural Resource Management Project of Institute of Rural Management, Anand (IRMA). A mix of approaches is being used to identify the impact of each of these sets of variables on community forest management; they include focus group discussion, participatory rural appraisal (PRA), formal surveys and key informant techniques. The study utilises primary as well secondary data. Primary data were collected through group discussions and personal interviews with the TGCS members and NTGCF officials. Secondary data were collected from the sample TGCSs and NTGCF head office at Anand.

3. TREE GROWERS' CO-OPERATIVE SOCIETIES IN INDIA

TGCSs are of a relatively recent origin in India. Fadval Tree Growers' Co-operative Society organised in the mid 1970s in the Surat district of Gujarat is probably the first such society established in India (Singh and Balooni, 1997). There are three models of TGCSs in India (Saxena 1996). However, among these three models, the TGCSs promoted by NTGCF are more wide spread. To organise TGCSs, a national level autonomous organisation, the NTGCF was established in 1986 with its headquarters at Anand. TGCSs formed by NTGCF are an important instrument of promoting afforestation programmes in India, especially on marginal and small farms and village common degraded lands. NTGCF helps the people interested in tree growing by organising and providing them access to institutional finance, technical advice and training, managerial support, production inputs, and national and international markets. By the end of June 1996, NTGCF had organised 362 TGCSs in five states: Andhra Pradesh, Gujarat, Karnataka, Orissa, Rajasthan, and the total membership of all TGCSs stood at 33,467, and had afforested over 5,828 ha of village revenue wastelands (Table 1). The NTGCF is also working alongwith village level institutions involved in the management of forests, e.g., *Van Panchayats* in Uttar Pradesh hills. Recently NTGCF has also started working in the State of Madhya Pradesh. A large proportion of TGCS members belong to the category of scheduled caste and scheduled tribe (22%), and landless households (27%) in the villages (NTGCF 1996).

Table 1: Some Facts about the Performance of TGCS at a Glance

(As on December, 1996)

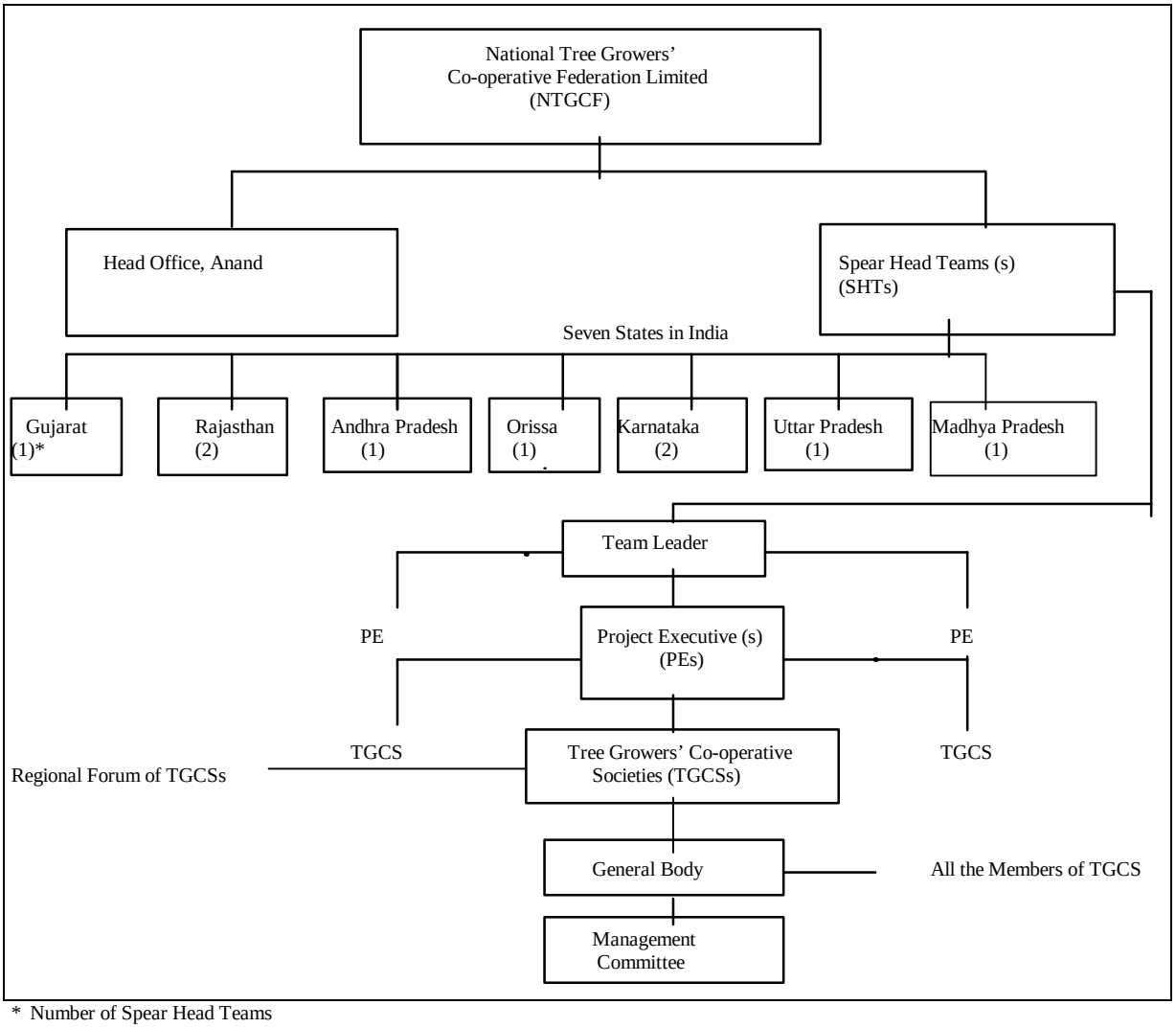
Details	Gujarat	Andhra Pradesh	Karnataka	Rajasthan	Orissa	Total
Total TGCSs organised	78	59	53	118	54	362
Functional TGCSs	67 (85)[1]	48 (81)	40 (75)	89 (75)	43 (79)	287 (79)
Total Membership	7,559 (34)[2]	3,655 (92)	5,027 (69)	11,291 (36)	5,935 (44)	33,467 (43)
Degraded village common lands afforested (ha) by TGCSs	1,264	835	610	1,802	1,317	5,828

Notes: 1. Figures in parentheses are percentage to the total number of TGCSs in the state.
2. Percentage of total households in the villages where TGCSs have been formed.

Source: Records of NTGCF, Anand

The NTGCF has a two tier organisational structure - the TGCSs at the village as the first tier and NTGCF as the second tier. The two tier organisational structure from TGCS at village level to NTGCF at the national level is depicted in Box 1. The NTGCF deploys a Spear Head Team (SHT) for creating awareness among the people about benefits from tree plantation and for organising TGCS. The members of the team organise village level meetings and identify potential leaders and office bearers for the TGCS and train them. The governance structure of a typical TGCS consists of a General Body (GB) and a Management Committee (MC) headed by a Chairperson. The GB comprises all the members of the TGCS and has the supreme powers conferred on it under the Co-operative Societies Act and Rules and it has its own bylaws. The MC is responsible for implementing the policies determined by the GB and for the overall administration and management of TGCS. The day to day matters are looked after by the MC. The NTGCF provides on an average a grant of Indian Rupees (INR) 0.45 million to each TGCS for the initial period of five years for planting trees on a minimum of 40 ha of village wastelands.

Box 1
Two Tier Organisational Structure of NTGCF



* Number of Spear Head Teams

4. PROFILE OF SAMPLE TGCSs AND VILLAGES

Three TGCS each in Lunawada and Godhara Talukas[1] were purposively selected for the study to cover different geographical portions in the Panchamahals district. The Lunawada and Godhara Talukas are located in northern and western portions of the Panchmahals district respectively. The northern part of the district is covered by hills and forests, interspersed with cultivated plains with shallow soils in river valleys, and the normal annual rainfall in this part of the district is about 800 mm (GOG 1982 quoted in Ballabh and Thomas 1996:9). The topography in the western part of the district is flat, punctuated in isolated places by hills, fertile soil with slightly higher annual rainfall than the northern parts of the

district (Ballabh and Thomas, op.cit.). The northern part is relatively dominated by tribal population in comparison to the western part of the district.

The sample TGCSs were organised between the year 1987 and 1991. Some important characteristics of the villages where these TGCSs were organised are given in Table 2. All the villages except the village community of Sukhiapuri had experience of working together before the formation of TGCS in their villages as the village communities had formed dairy co-operatives on the lines of Anand pattern[2]. Namnar and Bhatpura villages also have a drinking water co-operative. There was more than one dairy co-operative in these villages, except the village of Bhatpura. These different dairy co-operatives serve the needs of village communities located in a number of *falias*/hamlets[3] located at some distance from each other. The existence of dairy co-operatives has not only provided an entry point to the NTGCF in these villages but also helped in the formation of TGCSs.

Physical Profile of Sample Plantations

A physical profile of village plantations raised by sample TGCSs is shown in Table 3. The revenue lands (village common lands) rehabilitated by the sample TGCSs were in the category of wastelands prior to taking up plantation. Most of these common lands were without vegetative cover or with sparse vegetation owing to their excessive use in the past in the absence of any institutional arrangement for their management. These common lands were mainly used as grazing grounds for the cattle and collection of fuelwood and non-timber forest produce (NTFP). The depletion of vegetative cover resulted in excessive erosion and hence, formation of gullies and ravines. All the sample villages except Popatpura lie in the catchment area of the river Mahi or Misri. The village plantations of Charangam and Sukhiapuri were along the banks of the river Mahi. The TGCS members of Charangam revealed that earlier their village was situated along the river Mahi. However, some six to seven decades back the village had to be shifted to a distant place, mostly to their agricultural fields as the growing ravines destroyed their habitat. Now the village plantation raised by TGCS is located at the same site.

Table 2: Some Important Characteristics of Sample Villages

Characteristics	Tree Growers' Co-operative Society					
	Namnar	Lunawada Charangam	Agarwada	Bhatpura	Godhara Popatpura	Sukhiapuri
Population	2,600	2,300	3,000	1,400	1,300	600
Number of households	295	250	400	160	200	110
Major agricultural crops	Custard, Pulses, Rice, Maize. Wheat, Mustard, Millets, Sunflower	Rice, Maize, Pulses, Custard, Cotton, Mustard, Millets, Wheat	Maize, Pulses, Wheat, Millets	Rice, Maize, Wheat, Pulses	Groundnut, Maize, Wheat, Pulses, Castor, Cotton	Rice, Maize, Groundnut, Millets, Pulses
Means of irrigation	Private wells, Lift irrigation coop. and minor canal	Private wells and Minor canal	Lift irrigation coop.	Lift irrigation coop.	Private wells	Minor canal
Distance from nearest market	17 km. (Balasinor)	19 km. (Balasinor)	22 km. (Balasinor/ Lunawada)	8 km. (Vejalpur)	8km. (Godhara)	6 km. (Mehlol)
Other coops. in the village[1]	3 Dairy Coop. (175 members), 1 Drinking Water Coop., Namnar Sewa Sahkari Mandli (all coop. running in loss)	5 Dairy Coop. (300 members), 1 Drinking Water Coop.	2 Dairy Coop. (270 members), 1 Drinking Water Coop. Agarwada Sewa Sahkari Mandali	1 Dairy Coop. (110 members),	1 defunct Dairy Coop. (owing to lack of fodder availability)	---

Note: 1. In some villages there are more than one dairy co-operative (in different hamlets/falias).

Table 3: A Physical Profile of Village Plantations Managed by Sample TGCSs

Characteristics	Tree Growers' Co-operative Society					
	Lunawada			Godhara		
	Namnar	Charangam	Agarwada	Bhatpura	Popatpura	Sukhiapuri
Revenue wastelands acquired for plantation (ha)	25.22	80.00	17.00	32.25	16.50	31.55
Area planted by TGCS (ha)	25.22	78.00[1]	17.00	32.25	16.50	31.55[2]
Number of trees planted	95,460	1,69,514	66,839	1,30,700	72,090	1,20,772
Natural regeneration (No. of trees)	3,856	6,146	725	1,800	45	1,275
Survival (%) as on 1995-96	47.70	36.60	28.73	25.78	27.12	20.74
Number of trees/ha	1,824	776	1,172	1,100	1,187	835
Number of species planted	**11**	**14**	**24**	**13**	**5**	**14**
-Fuelwood	5	5	7	4	3	4
-Fodder	2	2	3	2	0	3
-Fruit	2	3	4	1	0	0
-Medicinal	3	3	5	1	0	2
-Timber	5	5	7	3	2	4
-Other	3	5	3	2	0	1
Some of the tree species planted by sample TGCSs	*Acacia catechu, Acacia nilotica, Acacia tortilis, Ailanthus excelsa, Albizzia lebbeck, Azadirachata indica, Cassia simea, Dalbergia sissoo, Moringa oleifera, Pithocelebium dulse, Pongamia pinnata, Prosopis juliflora, Prosopsis cineraria, Leucanea leucocephala, Tamarindus indica, Zizyphus jujuba*					

Note: 1. Two ha area was left for natural regeneration.
2. In addition to this, the Panchayat of Sukhiapuri permitted plantation by TGCS on 3 ha of Panchayat land.
Source: Records of NTGCF, Anand

In village Sukhiapuri, the plantation raised by TGCS has checked further conversion of agricultural lands into ravines. The members of sample TGCSs revealed that before taking up plantation activities, soil conservation structures were built in the plantation area to check further erosion, however, these structures were not maintained properly. The survival rate of the plantation was as high as 47.7 per cent in the village Namnar and as low as 20.74 per cent in village Sukhiapuri. However, if our discussion with the people of these villages is any indication, they considered it satisfactory performance primarily due to very poor condition of soils prior to plantation.

A combination of fuelwood, fodder, fruit, medicinal and timber yielding tree species have been planted by the TGCSs on village common lands. Some of the tree species in the village plantations managed by TGCS of Charangam and Sukhiapuri have reached the stage whereas some of the trees can be harvested. However, owing to the fear of conversion of plantation sites into ravines again, the villagers have postponed the harvesting of trees.

The costs involved in undertaking various plantation activities on the village common lands in the sample TGCSs are given in Table 4. The various plantation activities have resulted in generation of gainful employment to the people of the participating villages. The number of man-days generated from various plantation activities is also shown in Table 4. More than 80 per cent of the expenditure is incurred on land development/soil and water conservation structures and plantation and after care in all the TGCSs (Balooni 1997). These two plantation activities are labour intensive and account for a large proportion of the employment generated.

Table 4: Costs Incurred in Raising Village Plantations by Sample TGCSs (INR)

Characteristics	Tree Grower' Co-operative Society					
	Lunawada			Godhara		
	Namnar	Charangam	Agarwada	Bhatpura	Popatpura	Sukhiapuri
Area planted (ha)	25.22	80.00	17.00	32.25	16.50	31.55
Expenditure on plantation						
-Land development	63,867	62,321	50,449	56,079	32,635	41,186
-Plantation/After care	1,14,159	1,59,398	72,457	2,01,339	1,03,088	1,77,257
-Managerial subsidy, equipment, records, rent	43,471	33,666	45,301	39,996	29,563	37,881
Total	2,21,498	2,55,387	1,68,208	2,97,416	1,65,288	2,56,325
Average plantation cost/tree raised	4.80	4.10	8.44	8.38	8.43	9.74
Average plantation cost/ha	8,699	3,192	9,894	9,222	10,017	8,137
Employment generation						
-Men	6,937 (63.9)	8,167 (60.9)	4,833 (60.9)	9,381 (59.9)	4,581 (522)	4,376 (50.1)
-Women	3,913 (36.1)	5,241 (39.1)	3,095 (39.1)	6,268 (41.1)	4,181 (47.8)	4,355 (49.9)
Total	10,850	13,408	7,928	15,649	8,762	8,731
Average employment generated/ha	430	168	466	485	531	277

Note: Figures in parentheses are percentage to the total employment generated. Source: Records of NTGCF, Anand.

5. ISSUES IN MANAGING VILLAGE PLANTATIONS BY TGCSs

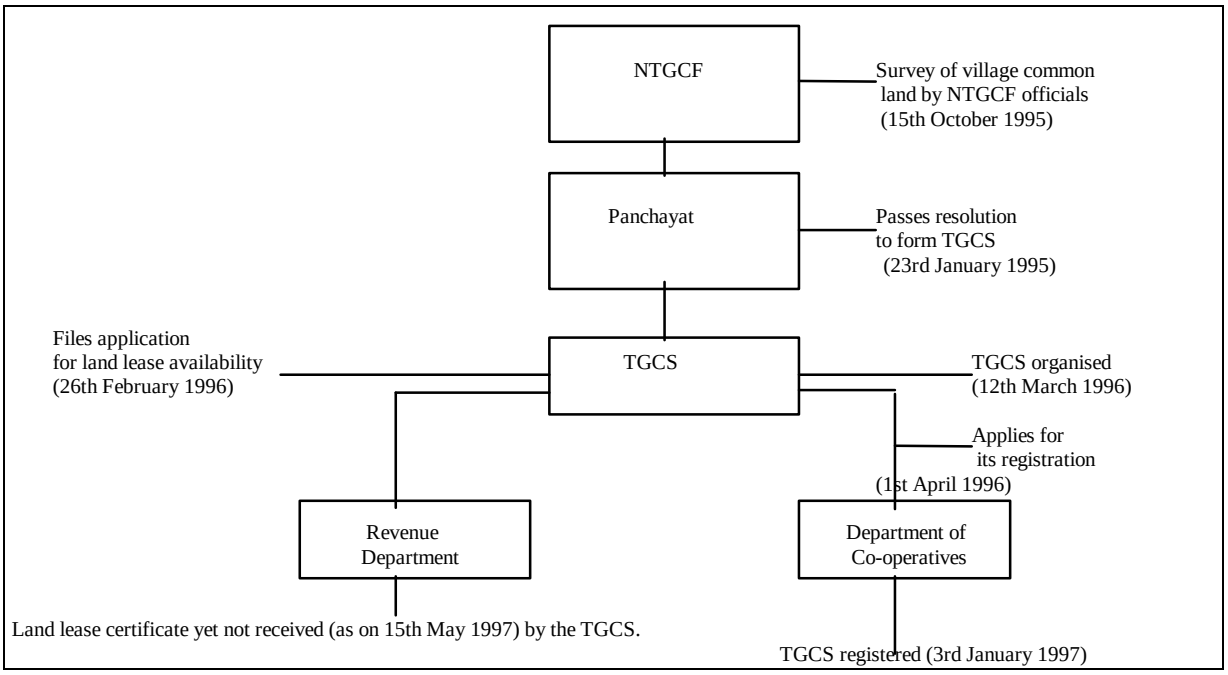
Problems in Acquisition of Land

The acquisition of degraded village common lands (revenue wastelands) owned by the revenue department on lease for afforestation by a TGCS is a very complex process. The TGCS face bureaucratic hassles in getting the lease of village common lands (Mishra 1992, Raju and Sarabhai 1992, Singh and Balooni 1997). In Box 2, the chronological sequence of the various steps and government departments involved in the formation of TGCS in village Dhamaniya in taluka Lunawada in district Panchmahals of Gujarat are given. The first step in the formation of TGCS is survey of village common land in the village, which was done by the NTGCF on 15th October 1995. This was followed by village panchayat's resolution on 23rd January 1996 to form a TGCS in the village and other steps for registration of TGCS and acquisition of village common lands for afforestation. But as on May 1997, when the data was collected for this study, the TGCS of Dhamaniya had not yet acquired the village common land for village plantation. An application for land lease by a TGCS has to pass through several officials starting from the lowest rank of the revenue department, the patwari/talati, to the revenue minister (Mishra 1992). A perusal of Table 5 further confirms that on an average there was a delay of more than one year in getting the lease of revenue wastelands from the Government of Gujarat (GOG) after the organisation of sample TGCSs. This explains the prohibitive transaction cost associated with acquiring land lease for the formation of TGCSs.

The case of Dhamaniya TGCS or the other TGCSs in Panchamahals district are not isolated ones as almost all the TGCSs encounter similar problems in other states also. Out of the total 362 TGCSs organised by the NTGCF till 1996, only 79 per cent are functional whereas the rest of them are either non-functional or defunct. Some of the TGCSs became non-functional after their formation, as they were not able to acquire revenue wastelands on lease for afforestation. There was a big lag period in the organisation of the TGCSs to their registration and also between the registration of the TGCSs to lease of land by the State Governments (Figure 1). On an average there was a lag period of 118 days and 309 days between the organisation of the TGCSs to its registration and between the registration of the TGCSs to lease of land by the State Governments respectively in the five states of Gujarat, Andhra Pradesh, Karnataka, Rajasthan and Orissa. The delays in the registration and lease dampen the enthusiasm of the village communities involved in the formation of TGCSs (NTGCF 1996:2). This is a major constraint faced by the NTGCF in the formation of TGCSs in all the five states.

Box 2

Chronological sequence of the various steps involved in formation of TGCS in village Dhamaniya in Taluka Lunawada in District Panchamahals, Gujarat

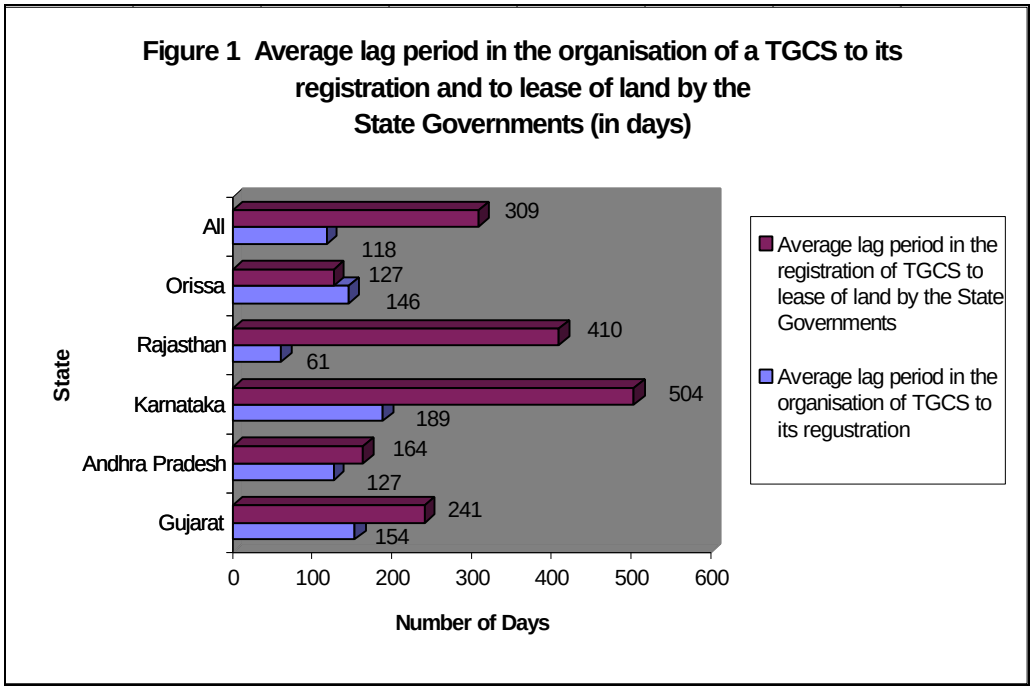


Note: **Prepared on the basis of the records of NTGCF, Anand.**

Table 5: Time lag in organising sample TGCSs and the grant of land lease to the TGCSs

Particulars	Tree Growers' Co-operative Societies					
	Namnar	**Charangam**	**Agarwada**	**Bhatpura**	**Popatpura***	**Sukhiapuri**
TGCS organised in the year	Nov. 1990	Jan. 1987	Oct. 1988	Dec. 1989	Dec. 1988	Jan. 1991
Land lease granted to the TGCS in the year	Oct. 1991	Nov. 1988	Jan. 1990	May 1990	Feb. 1990	Feb. 1992
Time lag in organising TGCS and the grant of land lease	11 months	1 year and 9 months	1 year and 2 months	4 months	1 year and 1 month	1 year

*Defunct TGCS
Source: Records of NTGCF, Anand



Source: Based on the data provided by NTGCF.

The terms and conditions of lease also vary significantly across these states, viz., duration of land lease varies across the states; uniform standard for allocation of land irrespective of differences in quality and productivity. In some states TGCSs are asked to pay land revenue at rates significantly higher than those paid by individual private landowners for better quality land (Mishra 1992).

This issue has already started showing signs of apprehension among the members of TGCS of Sukhiapuri about the future of village plantations managed by them. The officials of the MC of TGCS of Sukhiapuri revealed that the Revenue Department, Government of Gujarat (GOG) was planning to settle the people affected by the construction of Narmada Dam at the plantation site managed by the TGCS.

These issues are not faced by TGCSs/NTGCF only, NGOs involved in implementing the JFM programmes currently underway in different parts of the country on degraded forests area in the vicinity of the villages likewise face bureaucratic hassles from the forest department in acquiring those lands (Balooni 1997, Raju 1997:7). Even in the case of JFM programmes co-ordinated by the State Forest Departments[4] - the owners of forests in the country, there are apprehensions about the tenurial security. JFM activities presently derive their legal legitimacy from the resolutions issued by the State Governments. However, these resolutions do not have a statutory basis and therefore, are easily reversible (Agarwal and Saigal 1996:18, Hobley 1996:168-9). This creates uncertainty in the tenurial rights of the village communities involved in forest protection and TGCSs.

Defunct TGCSs

Some of the TGCSs became defunct after their formation. The reason attributed to the failure to sustain the TGCSs is the lack of arrangements for resolving various conflicts of interests of members that arise in the process of managing the affairs of TGCS. The conflicts sometimes reach the zenith and result in the collapse of the TGCS. In Box 3, we have presented the case of village Popatpura where TGCS became defunct due to encroachment of plantation area and internal conflicts among the members of TGCS. This case demonstrates that ill-defined property rights and lack of statutory support to enforce these rights lead to conflicts. These conflicts are further accentuated due to variability within the village community leading to diverse interests and competing claims on common resources. A resolution of such conflicts necessitates that nascent institutions like TGCSs and FPCs are provided necessary support to enable them to enforce their property rights.

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Box 3

A Case of Defunct TGCS

The Popatpura TGCS was organised in the year 1988. An amount of INR 1,65,288 was incurred by NTGCF to afforest 16.50 ha of village common land in the village Popatpura. The various plantation activities generated gainful employment of 15,649 man-days. However, the TGCS of Popatpura has now become defunct. A group discussion with the TGCS members revealed that about 5 ha of village plantation area was encroached by a few households with the help of a person of the village. This person first provoked some tribals living in the vicinity of the village plantation area to encroach some portion and gradually increased the encroachment. Out of the nine executive members of the TGCS, only the Chairman and the Secretary came forward to resist the encroachers. TGCS members did not come forward to prevent encroachment. The village plantation became an open access resource and it has again been converted into a degraded land.

Revival of TGCS of Popatpura seems to be a remote case, as the government department concerned is not taking any legal action against the encroachers. The TGCS cannot evict the encroachers since it is not empowered to do so. The TGCS officials have complained to the local authorities a number of times but in vain. Even an encroachment case has been registered by the TGCS officials in the Police Department. The higher authorities in the government department concerned are of the view that once the village common land is leased to them, it becomes the responsibility of the TGCS to manage it. This case demonstrates that a TGCS needs statutory support.

Distribution of Benefits from the Plantation:

Members and Non-members

After a decade of the implementation of community plantation programmes in India as well as in other countries, the issue of distribution of benefits from plantations has started showing signs of restiveness among the forest users (Hobley 1996:129, Balooni 1997, Singh and Balooni 1997). This is a serious issue threatening the sustainability of community plantation programmes and is now a matter of deep concern to the implementing agencies.

The analysis of the sample TGCSs revealed that the proportion of the households in the village to the total membership of TGCSs varied from 60.25 per cent in Agarwada TGCS to 82 per cent in Charangam TGCS (Figure 2). The group discussions with the TGCS officials revealed that at the initial stage many households were not interested to become member of TGCSs. However, once TGCS was formed and plantation carried out, the membership of TGCS was on the increase for six to seven years after the formation of the sample TGCSs as non-members started showing interest in the community/village plantations after observing successful management of the village common land (Table 6). After six to seven years of the formation of TGCS, the membership again stagnated due to lack of interest among founder members for enrolling new members in the TGCS. The logic given by the founder members was that the latter had not contributed during the formation of TGCS and in the plantation activities. However, the non-members claim a right on the village plantation on the grounds that plantation managed by the TGCS was a common land prior to plantation done by the TGCSs.

Figure 2 Total number of households in the villages and total membership of the sample TGCSs

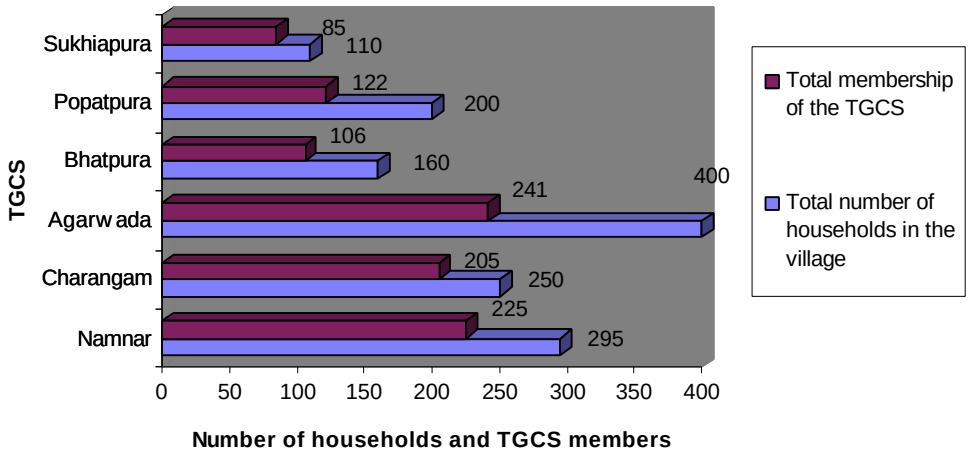


Table 6: Year-wise total membership of the sample TGCSs

	Tree Growers' Co-operative Society					
`Year	Namnar	Charangam	Agarwada	Bhatpura	Popatpura	Sukhiapuri
1988	-	161	-	-	52	-
1989	-	161	105	25	90	-
1990	130	161	151	25	122	50
1991	145	179	159	50	127	52
1992	197	193	211	70	127	69
1993	215	198	228	106	127	69
1994	225	205	239	106	127	85
1995	225	205	241	106	127	85
1996	225	205	241	106	127	85
1997	225	205	241	106	127	85

There are two cost functions in organising any collective endeavour - an external cost function (protecting property right) and a decision-making cost function (co-ordination cost) (Buchanan and Tullock 1965). In the case of sample TGCSs, as gradually the number of TGCS members increased over the years, there was reduction in the external costs, viz., protection costs, few cases of pilferage of forest produce. Whereas, the increase in the TGCS membership over the years resulted in increase in the decision-making costs. However, with the realisation that the benefits they have to forgo may be much larger than the cost of protection and enforcement of their property rights, the TGCS stopped admitting new members once it reached a critical mass. This decision, arrived at by the TGCS members, is also supported by the logic that the benefits should accrue to the same people who bear the costs of management rather than to different people.

The bylaws of a typical TGCS stipulate that profit earned by it from sale of fodder, timber and other tree produce be distributed in the following manner: twenty five per cent to be transferred to its reserve fund, a certain amount determined in accordance with the Co-operative Societies Act and Rules should be set aside for the co-operative education fund, and a sum not exceeding 12 per cent of the paid up share capital should be earmarked for payment of dividend to the shareholders. Of the balance left after the above deductions, 65 per cent should be distributed as bonus among the members in accordance with the value of trees/grass and any other produce sold by the members to or through the society; 5 per cent should be set aside for community development work; 10 per cent for bonus to the society's staff; 15 per cent for soil, water and energy conservation and wasteland development fund; and 5 per cent for co-operative propaganda fund (Singh and Balooni 1997). The main reason for some non-members becoming interested in TGCS in the later stages was that they have started perceiving benefits from the village plantation as the trees have reached harvestable stage. So the monetary gains from the harvest of trees has motivated the non-members of the village to become TGCS members.

Distribution of benefits from the final harvest of the village plantation is one of the major issues faced by the TGCSs and its promoter NTGCF since they started forming TGCSs in the year 1986. The issue

of membership (members vis-à-vis non-members) further aggravates this. The NTGCF is also trying to evolve a distribution mechanism, wherein all the members of TGCS would be given a share from the total output value of final harvest from the village plantation in accordance with the year of their becoming TGCS members. For this purpose the NTGCF is trying to include all the non-members of the village in the TGCS to solve the management problems which are expected to arise from the issue of distribution of benefits from the village plantation among the participating members.

Geographical Configurations

It was found that the location of the village plantation from the users' (people of the village who have a stake in the plantation) habitat is one of the major issues in their management. Locational differences among users' of village/community plantation complicate the functioning of the institutions managing natural resources. The degree of people's participation in management and protection of village plantation is inversely related to distance between plantation and their habitats and directly associated with illicit harvesting. The distance from hamlets to the plantation site is given in Table 7. It may be seen from the Table that the distance between plantation site and hamlet varies from maximum of 5.5 kilometres (kms) to almost nil.

The people of three villages namely Bhatpura, Bhalania and Sardarpura have their traditional rights on the common land afforested by the TGCS of Bhatpura. There were 106 members in TGCS of Bhatpura. However, out of this 106 TGCS members there were only 7 and 10 members from the villages of Bhalania and Sardarpura respectively, and the rest of the members were from village Bhatpura. During the formation of TGCS for rehabilitating the common land through afforestation, mostly the people of the village Bhatpura came forward for taking up various plantation and management activities. The reason for this lack of interest by the people of other two villages is owing to the relatively more distance of their habitats from the plantation site. Villages Bhalania and Sardarpura are located approximately 1 km. and 1.5 km. away from the plantation respectively, whereas the village Bhatpura is adjacent to it (only 0.5 km away) (see Table 7). The same observation was also made in the case of TGCS of Charangam. Box 4 shows the location of five participating villages from the village plantation managed by the TGCS of Charangam. Thus, the residence in geographic proximity to a forest area is a major factor weighing in favour of practical involvement and commitment to sustainable management (Sarin 1993).

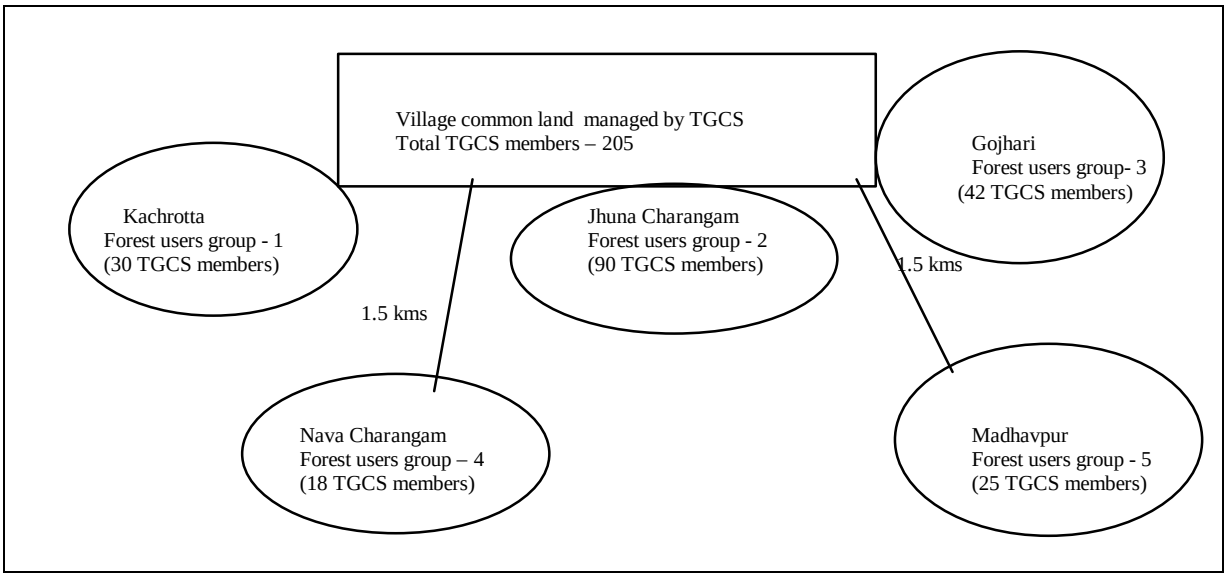
Table 7: Distance of Villages/Hamlets or User Groups from the Village Plantation

TGCS	Villages/hamlets having stake in plantation	Number of TGCS Members	Total TGCS members	Approximate distance of village/hamlets from plantation site (s)[1] (kms)				Remarks
				Plot No.1	Plot No.2	Plot No.3	Plot No.4	

Namnar	Jhuna Namnar	88		1.0	0.8	0.5	0.1	Non-TGCS members of the Todia falia pilferage tree products from plantation site.
	Nishal	36		0.8	0.7	0.3	0.3	
	Namnar	53	225	0.5	0.2	0.1	1.0	
	Laljipur	22		1.5	1.0	1.0	1.5	
	Todia	26		0	0	0.2	1.0	
Charangam	Jhuna Charangam	90		0				People of the Jhuna Charangam, Gojhari and Kachrotta falia pilferage tree products from plantation site & involved in illicit grazing.
	Nava Charangam	18	205	1.5				
	Madhavpura	25		1.5	-	-	-	
	Gojhari	42		0				
	Kachrotta	30		0				
Agarwada	Jhuna Agarwada	67	241	0.1	0.2	0.6	-	-
	Nava Agarwada	174		1.0	1.0	1.0	-	
Popatpura (defunct)	Sarpanch	56		2.0				Some households of Kakri-khan and Gam-Taliya falia have encroached the plantation site.
	Navi Nagri	26		2.0				
	Kakri Khan	3	122	0	-	-	-	
	Gam Taliya	5		0				
	Chakado Vass	7		0.1				
	Damor Vass	25		0.2				
Bhatpura	Bhatpura	79		0.5				
	Bhalania	5	106	1.0	-	-	-	-
	Sardarpura	22		1.5				
Sukhiapuri	Sukhiapuri	85	85	5.5	0.3	-	-	-

Note: 1. In Namnar, Agarwada and Sukhiapuri villages, the plantation sites/village revenue (common) lands managed by TGCSs are located at different sites in the village.

Box 4
Location of forest user groups from village common land managed by TGCS of Charangam

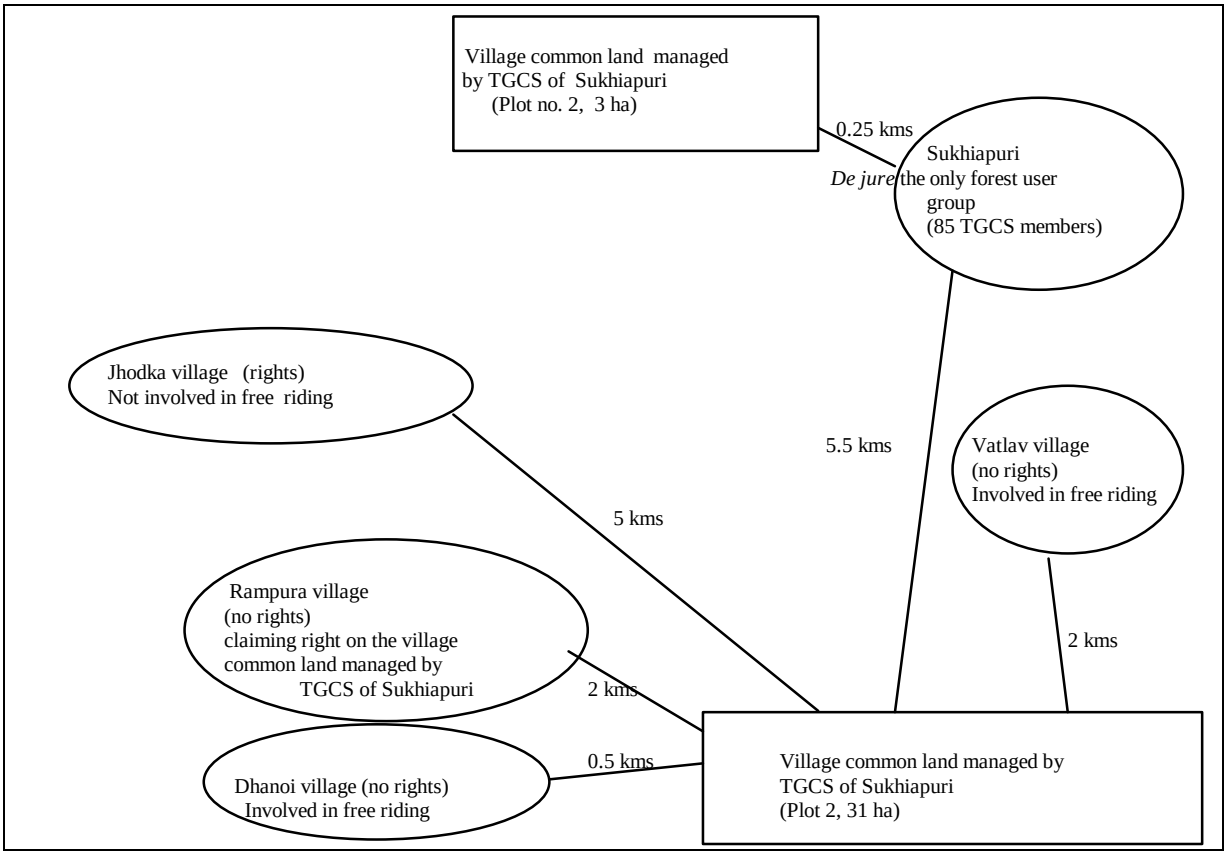


Notes: People of the adjoining villages to the village common land were involved in pilferage of fuelwood & illicit grazing.
Forest users group 4 and 5 were least interested in the management of village common land.

The village plantation managed by the TGCS of Sukhiapuri consists of two plots (see Box 5). One plot of 3 ha is located in the vicinity of the village. No management problems were reported in managing this plot. The other plot of 31 ha is located about 5.5 kms away from the village. Owing to the greater distance of this plot from the village, there are a number of problems in managing it. Only the people of village Sukhiapuri are involved in the management of this plantation whereas people of the nearby village, Jhodka, have no stakes in the plantation. Similarly, the people of the villages Rampura, Vatlav, Dhanol located near to village plantation managed by TGCS of Sukhiapuri have no right in the plantation.

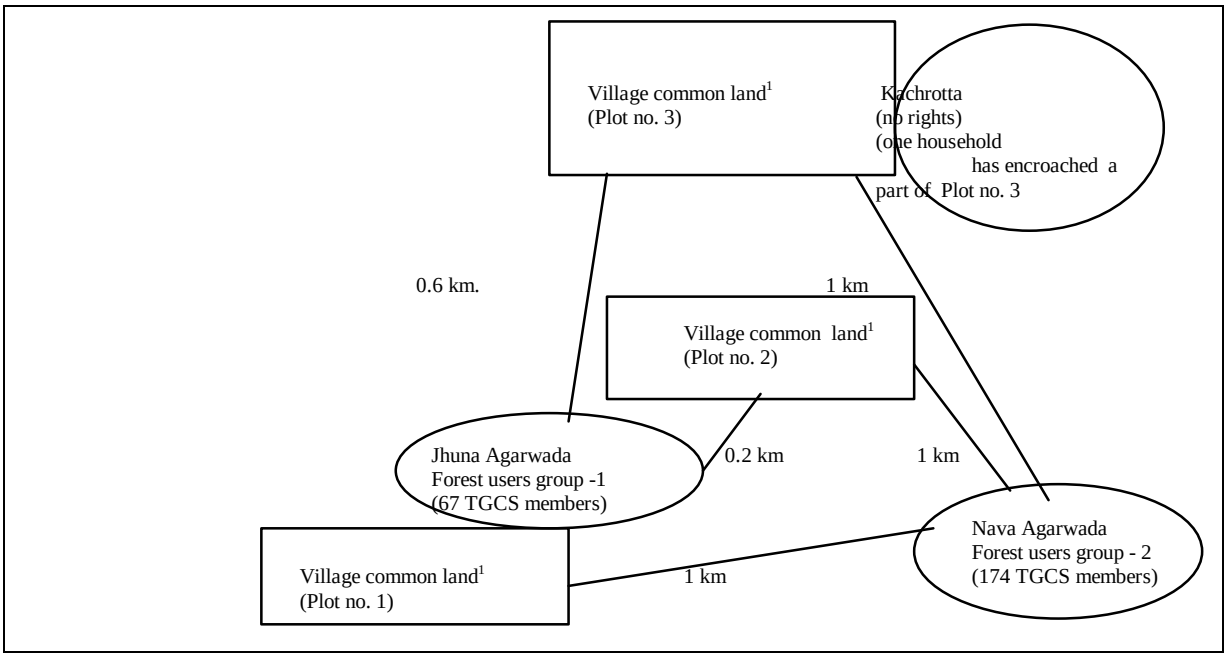
After the establishment of village plantation by TGCS of Sukhiapuri, the people of the village Rampura have started staking claim on this plantation. The TGCS officials revealed that the process of the land settlement has not yet been completed in this area. This has resulted in the claim on the plantation by the people of village Rampura also. This issue is still unresolved. As the plantation of 31 ha area is far away from the village of Sukhiapuri, its protection has become a major management problem to the TGCS.

Box 5
Location of forest user groups from village common land managed by TGCS of Bhatpura



In the case of TGCS of Agarwada, the village common land managed by the TGCS is divided into two plots (see Box 6). This village is divided into two hamlets. The village plantation is well protected and managed. The persons indulging in pilferage of tree products are fined by the TGCS. One of the plots of village plantation is in the vicinity of village Kachrotta. Recently, one household from this village has encroached a small portion of the plantation and has built his own house. The TGCS of Agarwada tried to pursue the encroacher to evict the encroached land but in vain. The TGCS members revealed that as the encroached land is far away from the village, they were unaware of this issue. The TGCS officials have also complained to the government authorities concerned but they have shown apathy in this matter. The lack of communication among participating villages/hamlets/user groups owing to locational difference can be attributed for the conflicts in management of village plantation.

Box 6
Location of forest user groups from village common land managed by TGCS of Agarwada



Note: 1. Village common land managed by TGCS of Agarwada

The demarcation and confusion over the boundary of common resources continue to be a major source of conflict. The NGOs, Forest and Revenue Departments generally prefer to allocate resources

according to the administrative boundaries determined in the settlement plans. These settlements were done during the 19th century. The ground realities of use and management of these resources have changed quite considerably. These changes need to be incorporated for proper management of plantation areas and a negotiated settlement between different villages and hamlets within a village need to be arrived at for effective management.

6. CONCLUDING REMARKS

The analysis of the sample TGCSs revealed that the various issues confronted in the management of plantations on village common lands are: encroachment of plantation site; distribution of benefits accruing from the new plantations among members and between members and non-members and geographical configuration of hamlets and plantation site. It was found that the formation of TGCSs is hampered by the problems in acquiring degraded revenue village common lands. The analysis of the sample TGCSs corroborates that performance of a TGCS is affected by geographical configuration of forest users from the plantation. These issues are not only related to TGCSs but also to Joint Forest Management (JFM) Programmes implemented in various parts of India. Nearly 15,000 community groups are managing over 1.5 m ha of state forest lands under various JFM programmes in 16 states of India (Agarwal and Saigal 1996). These 16 states have 74.6 per cent of the country's 75 m ha of public forest land and 91.4 per cent of the country's population (Sarin 1995 quoted in Hobley 1996:61). Similar issues are also reported from other South Asian countries (Hobley 1996:129).

If programmes like JFM or TGCSs have to succeed, they need to be provided enough flexibility to build institutional arrangements that are sustainable. The role of public agencies like Forest Department should be redefined and they should play a facilitating role and remove obstacles in the way of the formation of FPCs and TGCSs. The NTGCF has a significant impact not only in the formation of TGCS but also in providing opportunities to the people to develop institutional arrangements for managing village plantations. The NTGCF has also borne most of transaction cost associated with negotiation and acquisition of land and establishing village level institutions. These transaction costs could be reduced considerably provided a pragmatic view is taken and methods to acquire land by people's institutions are simplified.

NOTES

1. Taluka is an administrative unit of a District comprising a number of Panchayats.

2. The Anand pattern co-operative has a three tier structure: Dairy Co-operative Societies at village level, Milk Producers Co-operative Union at the district level, and Milk Marketing Federation at the state level.

3. Most of the villages in this region of the country have a number of *falias*/hamlets named after a particular caste/sub-caste residing there, viz., Patel *falia*, Domar *falia*.

4. In the case of JFM programmes currently underway in different parts of the country. The acquisition of degraded forest lands by village level institutions responsible for the management of degraded forest lands is theoretically presumed not to be a constraint on such programmes solely co-ordinated by the State Forest Departments - the owners of forests in the country.

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