

**REHABILITATION OF CPRS THROUGH RE-CRAFTING OF
VILLAGE INSTITUTIONS: A COMPARATIVE STUDY FROM
ETHIOPIA AND INDIA**

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***Triangular Institutional Co-operation between Ethiopia, India and Norway: Fostering
South-South Links in the Management of Natural Resources in Semi-arid Areas***

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Rehabilitation of CPRs through re-crafting of village institutions: a comparative study from Ethiopia and India

Abstract

The study examined approaches and experiences of non-governmental organisations (NGOs) working with social and ecological re-habilitation of common pool resources (CPRs), specifically the Joint Forest Management (JFM) programme in India and the “area enclosures” programme in Tigray, Ethiopia. It involved comparative field-research in the marginal, semi-arid project areas of N. M. Sadguru Water and Development Foundation (SWDF), Dahod District, Gujarat, India and the Relief Society of Tigray (REST), Wori Leke Woreda, Tigray, Ethiopia. A multidisciplinary team of practitioners and researchers carried out field observations, mapping and interviews with households and key informants in two villages from each of the project areas.

Similarities were observed in histories of resource depletion through increasing economic pressures and institutional break-down, as well as present-day community-initiatives to revert negative trends. In both India and Ethiopia the government claimed ownership to the village commons, and in both situations people referred to lack of or unclear property rights and short-sighted CPR policies as the explanation for resource depletion. However, within similar institutional frameworks, local specific histories and empowerment processes shaped contrasting outcomes.

The comparison of the two study villages in India showed a considerable achievement, but also vast untapped potential, for regeneration of commons. Major reasons for the depletion of forest resources and absence of appropriate institutions appeared to be the lack of long-term resource security through CPR ownership or well-defined and substantial usufruct rights. People favoured the re-framing of rules, practices and remuneration patterns which the JFM framework provides. In the specific context, JFM appeared to be the major avenue for the NGO to support management of CPRs. Yet, in spite of the formal instruments, conflicting interests and uneven motivation among government officials continued to create hurdles, uncertainty and conflict.

The area enclosures in Tigray, Ethiopia evolved through a grass-root process. Local people supported it as a positive initiative for soil and water conservation, and it has had a clear bio-physical impact on large parts of the degraded commons. The local government institution (the baito) is empowered to control the management of commons, unlike in India where the formal local government body (Gram Panchayat) was not involved in CPR management under the JFM.

Differences in the empowerment of local institutions are interpreted as one of the main factors responsible for the varying processes and outcomes observed in the two study areas. The political and institutional contexts of the two countries present NGOs with contrasting rules and opportunities, creating a need for a thorough, local-specific understanding of the processes of CPR management. The present South-South cooperation has documented and analysed similarities and differences, and will further pursue their context-specific implications for NGO strategy, advocacy and policy. The study confirmed that partners gain from joint learning and experience sharing on CPR approaches, but also showed that institutional, cultural and economic differences make transfer of experiences, models and practices challenging.

1 INTRODUCTION

1.1 Background

The interplay between socio-economic development and land management has been one of the major issues in the development debate of the recent decades (Blaikie and Brookfield, 1987). Many developing countries experience a development trend that appears to threaten common pool resources management regimes through institutional changes leading to open-access situations or conversion to private property, legally or illegally. State and market failures in securing conservation, resource development and equitable sharing of benefits are widespread. At the same time, unbalanced and locally irrelevant perceptions of a universal “degradation scenario” have been criticised (Fairhead and Leach, 1996; Leach and Mearns, 1996; Benjaminsen, 1998). Positive trends and processes of rehabilitation have tended to receive less attention, with some important exceptions (Tiffen, Mortimore and Gichuki, 1994). Still, it is partly in the context of perceived ecological and socio-economic crises in the drylands of Africa and Asia that the issue of common pool resource (CPR) management has come to the forefront (Bromley and Cernea, 1989, Ostrom, 1990; Singh 1994). In marginal areas, common pool resources often play a major role in local livelihoods and represent a potential for natural resource based development and human empowerment (Jodha, 1994). Linked to critical perspectives on the role of the state the role of non-governmental and community-based organisations (NGOs/CBOs) in natural resource management has been stressed (World Bank, 1997; Carney and Farrington, 1998; Shanmugaratnam, 1996). At the same time, too localised approaches and interpretations are being criticised; cross-cultural comparative studies stress the need to focus on national policy and legislation, on the one hand, and local organisations and institutions on the other (Berge and Stenseth, eds., 1998). Different *co-management* arrangements involving communities, NGOs and government are being tried out (Nagothu, 1999).

1.2 Triangular co-operation between Ethiopia, India and Norway

This study was carried out under the collaborative project “*Triangular Institutional Co-operation between Ethiopia, India and Norway: Fostering South-South Links in the Management of Natural Resources in Semi-arid Areas*”¹ The programme aims at supporting

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NGOs in natural resource management programmes through South–South experience sharing with respect to field action, human resource development and research/documentation. Research and documentation focus on water resource development and common pool resource management with respect to forest and natural regeneration and shall provide knowledge relevant for management of dryland natural resources, with particular emphasis of the role, constraints and opportunities of the NGOs. The CPR study compares NGO involvement in two specific programmes, the *Joint Forest Management (JFM)* programme in SWDF project area, Gujarat, India and the *area enclosure* programme in REST project area in Tigray region Ethiopia. The objective is to strengthen the understanding of community action in common pool resource management, NGO policies and approaches, and the national/regional institutional frameworks that communities and NGOs work within.

1.3 Context, policy and NGO involvement

1.3.1 Gujarat, India

Joint Forest Management (JFM) in India is a national level policy aiming at protecting and regenerating forests through people’s participation, based on the National Forest Policy adopted in 1988¹ (endnotes p. 27). The policy emphasised that maintenance of environmental stability and ecological balance must be the principal aim, and deriving economic benefits from forests to be considered as a subordinate objective. The Government of India issued guidelines in 1990 to all state governments to involve communities and voluntary organisations in the regeneration of degraded forest lands (GOI, 1990). The Government of Gujarat² followed up the Government of India guidelines on JFM by issuing a Government Resolution in 1991, which has subsequently been amended in 1992 and 1993 and 1994 (GR 1994. English text in SPWD, 1998). The objectives listed by the GR 1994 (§ 2) are:

- *“The main objective of this scheme is to obtain participation of village communities/village organisation in the regeneration, conservation, development and administration of degraded forests.*
- *To meet the requirements of village communities living close to the forest areas by producing grass, firewood, small timber and other forest produce by raising trees and other vegetation on forest lands.*
- *To achieve an environmental balance which is helpful to sustainable production forestry.*
- *To create possibilities of involving village communities in tree based activities.”*

Since 1975 SWDF has worked in the field of land and water resource management in western India (Gujarat, Rajasthan and Madhya Pradesh). The aim is to revive degraded natural resource systems and support community development through an integrated approach,

including forest-related activities that aim to restore the ecological balance and re-establish tree cover in the region to improve people's livelihoods and the environment and economic security of future generations (Annual Report, SWDF, 1999, 17; Shanker, 1998). SWDF works with JFM in a total of twenty-three villages, eleven in Gujarat and twelve in Rajasthan. The forest area covered in the twenty-three villages is 3,554 ha. The total village forest institution membership (households) is given as 3,838 (SWDF, 1999).

Text box 1: SWDF and JFM

“The JFM program this year progressed with a lot of activities which were both development and conflict oriented in nature. Forests for long have been the source of conflicts like other natural resource systems. Breaking the informal networks that exploit village forests and establishing a new system that is equitable and gender sensitive is an extremely difficult task. The so-called second-generation problems which mainly address the usufruct rights of people are predominant in the project villages with the strong presence of fodder grass. This year a total of 1,700 tons of fodder worth Rs 25 lacs [about US\$ 60,000] was harvested in JFM villages. In some areas with the continued protection good growth of trees were observed and the problems of protection are also mounting up. However, well equipped VFIs [village forest institutions] are successfully managing the new resource. The committees are diverse and unique in their approach. The programme (is) expanding at a steady pace with concrete results.”

Source: SWDF, 1999

1.3.2 Tigray, Ethiopia

According to the *Environmental Policy of 1997*, biodiversity conservation, land husbandry and local ownership go hand in hand (FDRE, 1997). Forestry issues are further addressed in the *Ethiopian Forestry Action Program* (EFAP, 1994). While the area enclosures in Tigray have initially spread as a community-based and NGO supported venture since the late 1980s, the Regional Government of Tigray has adopted the approach (with some modifications) and to some extent given it a policy framework in the *Tigray Forestry Action Program* (TFAP, 1996). 143,000 hectares have been enclosed in the Tigray region and the regional government planned to establish further 128,000 ha during five years from 1997 (ibid.). The TFAP states that there are three forms of forest/tree ownership in Tigray: state, community and private, and it refers to area enclosures, as common lands protected for natural regeneration. They are normally found within the boundaries of the village (*tabia*) and are to be used communally by local people, but may include larger forest lands sharing borders among two or more *tabias* or *woredas* (districts) (ibid.). Since enclosed land is usually degraded forest, the objective is mainly environmental rehabilitation along with the provision of tree products. The area enclosures have not been studied, with a few exceptions (Kindeya, 1997; Mitiku and Kindeya, 1998).

REST was established in 1978 to assist the war and drought affected population of the areas of Tigray that the *Tigrayan People's Liberation Front* (TPLF) controlled. During the war with the *Derg* (military regime), REST lead famine relief operations and repatriation programmes. After the victory by TPLF in 1991, REST gradually changed its approach from relief to rehabilitation and development³. Since 1985, REST has worked with local communities on rehabilitating degraded commons through creating area enclosures. Area enclosures in this context refer to protected sites for natural regeneration found in different villages for conservation, fuel wood, fodder and other products to benefit the adjoining community (see Appendix 1). By the end of 1998, REST estimated that 58,000 hectares of land in its intervention area had been developed under area enclosure with REST support. The enclosures were distributed on a total of about 1,242 sites in REST project area.

2 METHODOLOGY

2.1 Theoretical framework

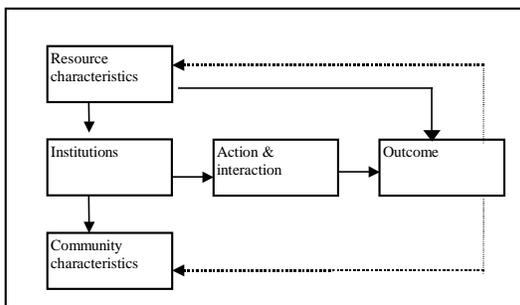
The study of common pool and common property resources has developed rapidly over the past couple of decades as an interdisciplinary field bridging economics, sociology, political science, the natural resource management disciplines and others. A core assumption in the debates on property rights and environmental issues is that lack of, or unclear, ownership is an important factor in processes of environmental degradation and a disincentive for resource development. Typologies of property rights (private, state, common property, open access) have been one of the analytical entry points (Bromley, 1987). In most real world situations a combination of property rights apply and resources may be located somewhere on a continuum from open access to common pool, common property, state and private property. Effective arrangements are therefore normally complex and situation specific:

Open-access resources - those characterised by no property rights - will be overused, will generate conflict, and may be destroyed. All types of property-rights regimes - including private property, common property and state property, whether locally selected or externally imposed - may reduce the costs of open-access regimes, but perform differentially depending on the attributes of the resource, the local community, and the specific rules used. Thus evolved or self-consciously designed property-rights regimes are essential to regulate the use of natural resource systems (Ostrom and Schlager, in Hanna et. al., 1996).

The study reflects the shift from a “pure” analysis of property rights to complex situations of institutional arrangements, rights and management practices. It focuses on *Common Pool Resources* (CPRs), defined as resources that are accessible to and jointly used by people living in a particular geographical location such as a village or a cluster of villages (Singh,

1994, p.6). Further characteristics are: 1) it is costly to develop institutions to exclude potential beneficiaries from them, and 2) at least one of the valued resource units obtained from a common pool resource are not available to others (Ostrom and Schlager, in Hanna et. al., 1996). *Common Property Resources (CPrR)* are resources to which ownership and use rights are shared co-equally and are exclusive to a well-defined group of people (after Singh, 1994, p. 5). In both the Indian and Ethiopian context, we are looking at natural resources that represent a common pool to more or less well-defined groups of people, but with ownership in both cases resting with the state. Also in both cases, we find that successful institutional development comes close to a common property arrangement, with clear definition of the right-holder groups and equality in the distribution of rights and benefits.

Figure 1: Framework for analysis



Source: *The multiple use framework*, Edwards and Steins, 1998, 368 (simplified version)

The team used a few references for guidance on concepts and theory, including Knudsen, 1995 and Shackleton, Maltitz and Evans, 1998. We used a framework to structure information about factors in the generation of the “outcome”, the CPR management situation taken from Oakerson’s Dynamic Framework as developed by Edwards and Steins (1998), although in a less elaborate version.

2.2 Study area

2.2.1 Gujarat, India

The study area falls within Jhalod sub-district of Dahod District, Gujarat State, India. It is a semi-arid region located in the southern part of the Aravalli Hill ranges with an annual rainfall of approx. 750 mm, and the bulk of the precipitation occurring during the south-west monsoon from July to September. The terrain is undulating and soils are coarse and shallow (6 to 10 cm depth). Evaporation and run-off through ephemeral streams and rivers are high, partly related to the degraded vegetation cover on large tracts of common lands. The erratic nature of the rainfall often leads to severe drought conditions and high run-off, eroding the shallow soils. The natural climax vegetation is classified as dry deciduous forest, dominated by teak (*Tectona grandis*). Root stock of forest still exists in some areas, with scope for regeneration. Some survived specimen of *Diospyros Melamoxylon* and *Butea monosperma* are

also found. According to local people, there were thick forests with a rich flora and fauna some four to five decades back.

2.2.2 Tigray, Ethiopia

Tigray is the northern most region of Ethiopia with a total land area of approximately 50,230 km² and bordering with Sudan in the west and Eritrea in the north. The population is estimated to be 3.13 million and the average population density about 43 persons per km² (CSA, 1995). The average annual rainfall for the period (1961-1987) was 578 mm (REST/Noragric, 1995), the main rainy season being from June to August. The variability of rainfall is high, as totals vary from 56% to 183% of the mean. The topography is characterised by a mountain plateau with undulating terrain in the central highlands, at a general altitude range of 2,000 m to 3,000 m, and plain lowlands in the eastern and western escarpments (Mesfin, 1972). Natural closed forests are almost non-existent due to the impact of human activities, including the spread of agriculture (Huntings, 1978; Breitenbach, 1963; TBNRDEP, 1994). Forest generally refers to patches of woodland around churches and in remote places, constituting 8.6 % of the land. Troll and Schettenloher (1939, quoted in Tekie and Smith, 1989) indicated that undisturbed vegetation of the region consisted of *Acacia spp.*, *Croton macrostachys*, *Ficus spp.*, *Cordia africana*, *Juniperus excelsa*, *Olea africana* and others. About 52% per cent of the total area is agricultural land and more than 85% of the population depend on agriculture for its livelihood (Amare, 1978), livestock husbandry playing a central role. *Teff (Eragrostis teff)*, wheat and barley, millets, sorghum, pulses, maize and beans are important crops. Crop and livestock production for a growing human population create a high pressure on land and loss of soil fertility, deforestation and shortage of animal feed have been cited as severe constraints. The dependence on highly variable rainfall makes the farming systems vulnerable and parts of the region regularly suffer food deficits (Amare, 1978; REST/Noragric, 1995).

2.3 Data collection

The participating NGOs selected two villages in each project area for field study. In Gujarat, Chanasar (Raniyar Kanbi Panchayat) and Kheda (Kheda Panchayat) were selected to represent contrasting field situations: the former with a significant, but undeveloped, common pool resource and the latter with a six-year old JFM programme. Two villages in Tigray were selected to represent a situation with either large un-enclosed commons (Arena) or with most of the commons enclosed (Kolla Geble). In line with the objective, the study is broad,

descriptive and interdisciplinary, reflecting the different backgrounds of team members. The team visited Gujarat in September 1998 and Tigray in January 1999 carrying out approximately three-day visits to each of the study villages⁴. The methods used were focus group discussion, transect walks and direct observation, key informant interviews (including local officials and NGO staff), village mapping exercises, household interviews and collection of secondary data. Women participated in joint meetings and separate focus groups, but men tended to dominate both meetings and individual interviews.

3 CASE STUDIES

3.1 Gujarat, India

3.1.1 Community characteristics

Chanasar and Kheda are inhabited by the indigenous *Bhil* people. Villagers live in scattered *falias* (hamlets), with households distributed in partly kinship-based clusters or compounds. The society is patriarchal and the marriage system patri-local. Chanasar has a population of about 1,200 distributed on 200 households, Kheda about 900 in 191 households. Historically the population has been low with few settlements, but during the past century the population has increased rapidly. Forests were the primary source of livelihoods during pre-independence. In Chanasar, one villager reported that during the 1930s there were only about 8-10 households, practising shifting cultivation in the dense forest. Legal and illegal timber extraction, population growth, increasing livestock numbers, and institutional changes lead to the depletion of forest cover. The two study villages both have about 30 % of the land classified as forest, compared to about 18 % in the SWDF project area of the Jhalod sub-district (Appendix 2). The local economy is centred on agriculture, livestock rearing, paid agricultural labour, non-farm occupations and seasonal migration to urban areas. Fodder for livestock is primarily from residuals of crops, forest and tree leaves and people graze cattle on private fields, common land and fields after harvest (regarded as a CPR). A few households also buy fodder. SWDF has supported both Chanasar and Kheda by providing lift irrigation, promoting private agro-forestry and stimulating organisational development etc., benefiting a majority of the households. *Lift Irrigation Co-operatives* (LIC) have been formed, as the major recent effort to strengthen collective management of a natural resource. Irrigation reduced labour migration by improving household food security and increased the productivity on private lands, thereby making more biomass (crop residues, dung and wood) available. Private property resources meet the majority of the household biomass needs (75% of the fodder and 100% of fuel wood, according to group interview in Chanasar), thereby

reducing the dependency of households on the CPRs⁵. In a small survey all households reported marketing of agricultural produce and livestock products, indicating a shift from subsistence-based livelihoods to a market-oriented and village economy.

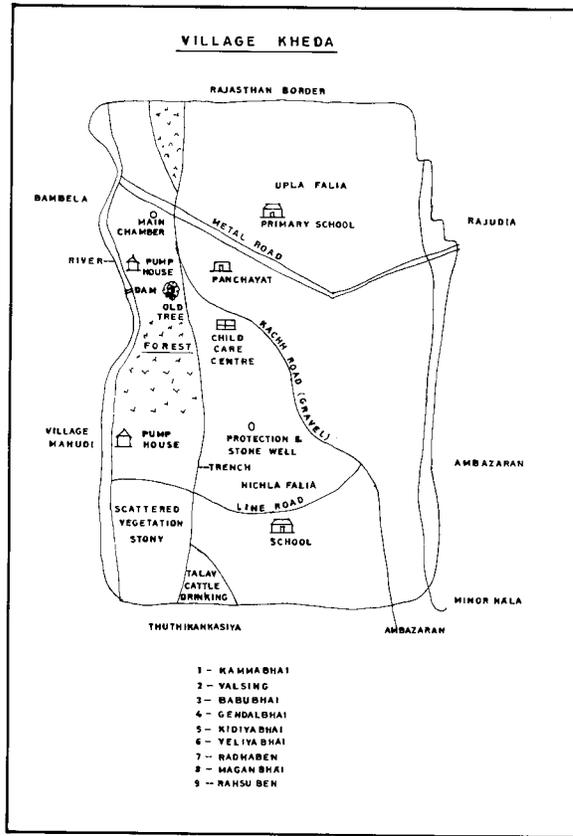
3.1.2 Common pool resources

The CPRs in the villages include village grazing land (*gauchar*), state forest land and water resources. In Chanasar, nearly three-fourths and in Kheda all of the village *gauchar* had been converted to other uses by cultivation and construction of public amenities, rendering it unimportant for biomass resources.

The forest land under Chanasar village (about 110 hectares) is located towards the eastern side of the village. The terrain is undulating with gentle slopes and predominantly coarse gravelly soils, shallow with poor structure and prone to erosion, interspersed with bare rocky outcrops. The forest land is legally categorised as "Protected Forests" and is owned and supposed to be managed by the state. According to one local, forest cover was dense in the past (at least till the 1930s). Currently the woody vegetation is in a degraded state, and the area covered by local grass species or barren with a few patches of natural root stock of teak (*Tectona grandis*), *Butea monosperma* etc., as well as remnants of earlier plantations (*Eucalyptus spp*). The reasons for forest degradation given by people were improper management by the state, commercial felling by the forest department, agricultural expansion and overgrazing. Medicinal plants were once available from the forests, but had now become scarce, and the associated local knowledge eroded. The remnants of plantation carried out by the forest department five to fifteen years ago showed limited impact, apparently owing to lack of involvement of people in protection and management, choice of unsuitable species and lack of soil and moisture conservation measures. Villagers related that, after planting, they had protected trees for only a few years, after which they would cut and graze them back (women focus group discussion). One can observe seedlings grazed and stunted, and land prone to soil and water erosion in the area. Villagers currently use it in plots for grazing their livestock or harvesting fodder grass through the 'cut and carry' system, which creates clearly visible boundary lines in the field.

Kheda villagers have about 84 hectares of forest land that has been regenerated under JFM. Villagers said that in the past there were thick forests on the same land, teak (*Tectona grandis*) being the major tree species. The forests got degraded through large scale felling by

Figure 2: Resource map of Kheda



Source: Participatory mapping exercise 24.09.98

forest co-operatives and contractors, after which it was used mainly for open grazing. Photo-documentation and villagers' evidence confirm that the land was severely degraded in 1990. Since 1993 the villagers have protected and regenerated the forest under a JFM agreement with the Forest Department. As a result, a fairly good regeneration of forest has taken place in major parts of the area. Tree species now include *Teak*, *Eucalyptus spp*, *Ganda baval* (*Prosopis juliflora*), *Desi Baval* (*Acacia nilotica*), *Bamboo*, *Sisam* (*Dalbergia latifolia*), *Kado* (*Orengufolia antadecentrica*) etc. The number of trees is estimated to be in the order of 43,000 (field visit, January 2000).

3.1.3 Village institutions

The organisational and institutional scene in the study villages is dynamic. A number of community level organisations have emerged during the 1990s, often related to SWDF support. They include *Lift Irrigation Co-operatives*, *Dairy development co-operative* (Chanasar) and *Saving and Credit groups*. The *Panchayat*, or local government, is the political body formally responsible for the development of the village. The forest department is responsible for management and protection of forest land. The villagers have legal rights of access and withdrawal (fuel wood, fodder, and non-timber forest produce), both traditionally and as specified under the state forest act.

Chanasar villagers have devised their own rules for protecting, harvesting and distributing fodder grasses, by single households or by collective management at the kin group or hamlet level. People said that the system originated during the 1970s when the Forest Department

took up plantation activities and assigned the task of protection to villagers by identifying small plots for individuals or groups of households. People said that lack of a secure tenure limited their willingness to invest in and organise around forest resources. One woman asked, “*without ownership, how can the trees be protected?*” (village meeting, Sept. 98). In 1997, after exposure visits and other information arranged by SWDF, Chanasar villagers held meetings to discuss collective forest management and the JFM programme. They formed an informal forest protection committee with twelve members, including four women. The committee wrote to the local Divisional Forest Officer (DFO) in January 1998, requesting that the village forests be included under JFM. The DFO informed them about district level meetings to discuss the idea. A few members attended the meetings in the first quarter of 1998 and the DFO orally approved taking up forest management under JFM. The villagers were awaiting the formal sanction from the Divisional Forest Office to go ahead with protection and management⁶.

In Kheda, people formed a Village Forest Institution (VFI) in 1992/93 for managing their forest under a JFM agreement with the Forest Department. It was registered as a co-operative society in March 1995. SWDF facilitated meetings among villagers to start the protection and regeneration of the forest land. The villagers were to get benefits in the form of fodder and fuel wood and a share in the timber in the ratio of 80 : 20 between the villagers and the Forest Department. They are also entitled to a share in the output of pruning operations. There appears to have been no village opposition to the JFM initiative. The VFI had a membership of 118 households⁷. In the beginning, women were not enrolled as members, but it was later decided to include women. The Executive Committee (EC) meets every month, has twelve members, including two women, and is elected annually by the General Body of the village forest institution and in such a way as to represent different hamlets in the village. The forest ‘beat guard’ is supposed to be in the EC, because of the post being vacant there was no representative of the Forest Department (Sept. 98). Soon after the JFM initiation in 1993, members decided to stop grazing in the forest. Stone fencing and soil and water conservation work was carried out in 40 ha of the forest, including construction of gully plugs in streams. The EC mainly went for natural regeneration, with some sowing and planting. Members took part in the work on wage payment basis, SWDF providing the funds for the forest plan (1993 – 1997) and investing about 0.335 million Rs (approx. US\$ 8,000) on the site. Members developed a system for sharing fodder grass, the major short-term economic

benefit. The land was divided into twenty-one plots, each plot being allocated to five or six members, who were supposed to harvest the grass and share it equally among themselves⁸. The EC has introduced fines for grazing and tree felling and there were six watchmen to keep a continuous vigil on the forest, paid from the contributions made by the members. In addition, members living close to the forest area were exercising informal vigil in their surroundings. In 1998 people were allowed to graze cattle in the forest because of initial failure of the monsoon. Both grazing, grass cutting and firewood collection was also reported to occur illicitly. However, in January 2000 villagers had elected a new Executive Committee and reinforced protection measures in order to address these challenges.

3.1.4 Outcome: the resource management situation

Over the last decade the agricultural base of both villages have been substantially strengthened through SWDF supported water harvesting and lift-irrigation schemes. The direct dependence on commons, and destructive pressure through uncontrolled grazing or fuel wood collection, has therefore been reduced although less so in drought years, as during 1998 and 1999. Yet, this has not undermined people's positive interest in improving the commons. The biotic and climatic potential for dry deciduous forest production are assessed to be similar in the two villages, though with somewhat better potential in Chanasar, since the Kheda land is more steep and stony. The two villages are examples of the achievement and potential for collective action to rehabilitate degraded common pool land resources. In Kheda, good forest cover and increased grass production are major benefits, and the catchment hydrology has been improved, reducing the run-off. There were regular village and committee meetings for decision-making about management. The Kheda case demonstrates the role of the NGO as an intermediary vis-à-vis government, and in continued follow-up of various management aspects (mobilisation, meetings, financial management). In January 2000 changes in leadership and discussion of management rules showed that people were trying to address threats to sustainability that appeared to be linked both to the drought conditions of the year and the growing commercial value of trees. In the non-JFM village of Chanasar, there were virtually no trees in 'the forest'. In September 1998 there was no formally recognised institution with regular meetings. The major reason for the absence of active forest management and institutional development in Chanasar appeared to be the lack of long-term resource security through ownership of the land or well-defined and substantial user rights. The investments by the forest department did not succeed, the full biotic potential of the land was not realised, and there was lack of co-operation between stakeholders. In

spite of external constraints, Chanasar villagers had nevertheless developed institutional arrangements for grass protection and management, securing control and distribution of this valuable asset. They regarded the outcome as “below optimal”, but they were deriving benefits from the area as grazing land and had organised the utilisation in a manner which appeared to be well adapted to circumstances. The JFM initiative and informal village forest committee appeared to have broad, local backing and was in the process of getting formalised in 1999 and 2000. Villagers were not fully clear about village and household use rights under a JFM scheme, but uncertainty primarily related to whether the village would get the necessary recognition from government. People spoke with confidence about the village meeting and elected committees, and their ability to solve conflicts, and as such social organisation and village decision-making per se did not appear a constraint.

Past institutional arrangement in India favoured individual maximisation strategies on the part of commercial operators, officials and powerful villagers, rather than interaction, cooperation and investment. The widespread degradation, and lack of rehabilitation, of commons in the region lends support to this generalisation. Both Chanasar and Kheda show examples of village organising, but it was only Kheda that in 1993 got its village forest institution recognised, and this took a major lobbying effort by SWDF. The JFM policy should provide equal opportunities for the two villages, but the physical, financial and human resource capacity of government and non-government institutions is limited compared to the vast areas of degraded forest. They have to concentrate their effort, and in this case Kheda was chosen by SWDF and Forest Department. Several local observers say that individuals make an important difference, and that the variable interest and motivation on the part of government officials create uncertainty for communities and the supporting NGO. This is a major factor in explaining outcomes: it directly affects villagers’ attitudes, and it affects indirectly by encouraging or discouraging NGO involvement. In the specific context, the JFM policy has still encouraged institutional development in both villages, and it appears to be the major avenue for SWDF to support rehabilitation of degraded forest commons.

3.2 Tigray, Ethiopia

3.2.1 Community characteristics

Both study villages are in Wori Leke, one of 35 *woredas* (districts) in Tigray region and located in the Central Zone. The population of Wori Leke Woreda was 123,556, distributed

on 24 *tabias* ('Villages') and 85 *kushets* (hamlets) (1995 Census)⁹. Arena Tabia is located in the eastern part of Wori Leke, about 30 km from the main town, Edaga Arbi, and has a lowland climate with a medium altitude range of 1,600 to 1,800 m. 1,250 households make a total population of about 5,000 distributed in four *kushets* with scattered settlements. Kolla Geble Tabia is located about 10 km north east of Edaga Arbi and is in the middle altitude range with an average altitude of about 2,000 m. It has 1,175 households with a population of about 5,000. People belong to the Christian Orthodox church. The society is patriarchal, but a large proportion of households are female headed (58% in Arena and 42% in Kolla Geble). Various organisations embrace different sections of the community, such as the Women's Youth's and Farmer's Associations. Programme carried out by local people and REST are normally implemented in collaboration with the Bureau of Agriculture and Natural Resource Development (BoANRD) and through close participation in the *baito* system of political leadership and administration at *tabia* and *woreda* level. The economy is largely based on livestock production and dry land farming. Some households pursue non-farm occupations like pottery, masonry or work as area enclosure watchmen, and most households reported food for work programme as an important source of income and employment. The average private land holding is about 0.25 hectare in Kolla Geble, as compared to 1.2 hectare in Arena (based on village figures on land, see CPR Team, 1999). Many households are landless (in Kolla Geble: 18% of the male headed and 37% of the female headed households, interview with Tabia Baito Chairman). People practise leasing of land, normally by sharecropping. Livestock are central in the use of the commons, whether open or enclosed. Oxen are kept for draft purposes and goats, cows and poultry birds are reared for meeting food and cash needs¹⁰. The main fodder sources are crop residues, trees, grazing on common and private lands and grass from the protected areas. Some households purchase fodder, mainly from other households. Private farm and backyard trees and cow-dung are the major sources of fuel.

Before the land reforms introduced by the *Derg* regime in 1975, three main categories of land ownership were important (field discussion, refer also REST/Noragric, 1995): *Risti* (private, inherited land, based on descent), *Kolli* ("communal land" redistributed on the basis of long-term residence) and *Gulti* (land owned by landlords, often absentee, or churches). In 1975 all land was nationalised. Agricultural land was distributed and uncultivated land generally left as open-access. The TPLF later confirmed government ownership, but introduced stratified

re-distribution (taking the quality of land into account) and land use planning from about 1979. It was not implemented at the time, due to the distractions of civil war. The *baito* system was given responsibility for implementation of land use planning, and work gradually started up from 1991-1992, area enclosures being one major approach. Land is still government owned; while the practice of regular re-distribution has been discontinued, titles to land allotted have so far not been recorded.

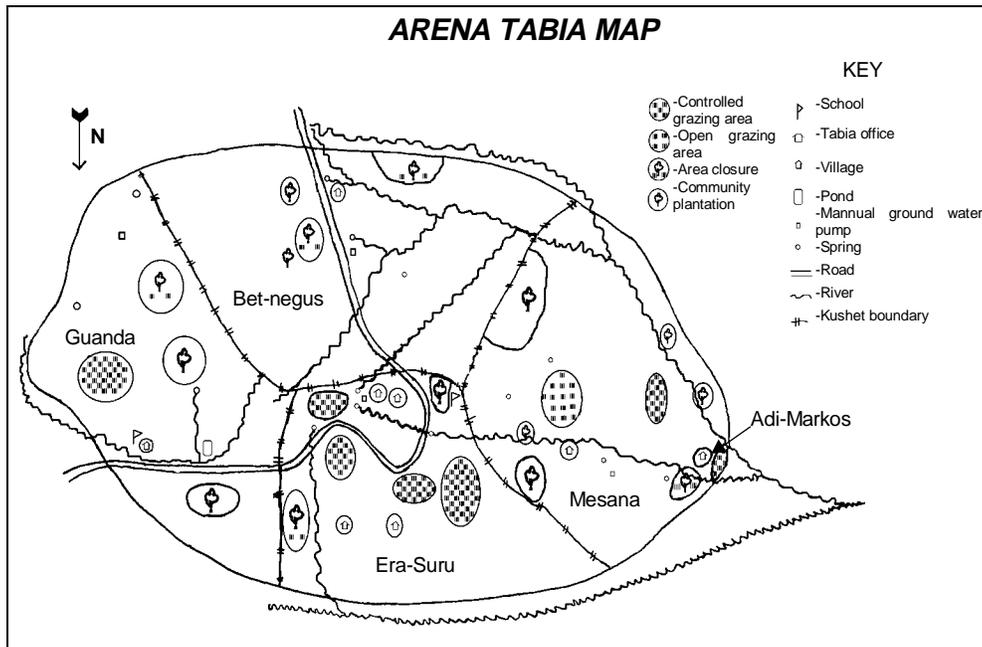
Villagers gave an account of a history of severe environmental degradation of their common lands (Village meetings, January 1999). They described a past situation with rich forest and wildlife, which supported a higher level of human welfare than today. People in Arena roughly divided the history of degradation in two phases: disappearance of forest cover from around 1949, and grass land degradation from around 1973. Before 1949 the forest was in good condition, and people said that they had good and easy access to fire wood, wildlife and honey production based on wild flowers. People named a number of tree and wildlife species that disappeared during the period of forest degradation. Since 1973, the grass production decreased, affecting the quality and quantity of livestock production. People in Arena said that milk was historically available throughout the year, even in the dry season, but during the past few decades it had become difficult to get even in the rainy season. People explained the history of land degradation by referring to lack of awareness, improper government policies, increased population pressure and repeated droughts. Particularly in Kolla Geble people stressed the effect of the land reforms in 1975/76, which abolished old principles of land ownership and created an open-access situation on former pasture and forest land, permitting both agricultural expansion and non-sustainable levels of forest utilisation. Climatic changes apart, people stressed “internal” factors in the sense that neither outsiders nor marketing of products played any role. People perceived environmental degradation, particularly loss of forests, as a major cause of the drought and famine in recent decades.

3.2.2 *Common pool resources*

The major common pool resources in Arena are the area enclosures (*deni*), community plantations (*dagme greba*, enclosures with tree planting) controlled grazing areas (*Hiza’eti*) and open grazing lands. Arena has 1,650 ha open access common land (26% of total land) and 779 ha enclosed area (12% of total land) (REST records and field work January and November 1999, refer Appendix 3). There are 11 community plantations and 3 area

enclosures in Arena. A resource map prepared by villagers indicated the location of *kushets*, cultivated lands, unenclosed land and some of the enclosed sites (Figure 3).

Figure 3: Resource map of Arena Tabia



Source: Tabia level mapping exercise with villagers January 1999, updated and revised in *kushet* level group interviews November 1999.

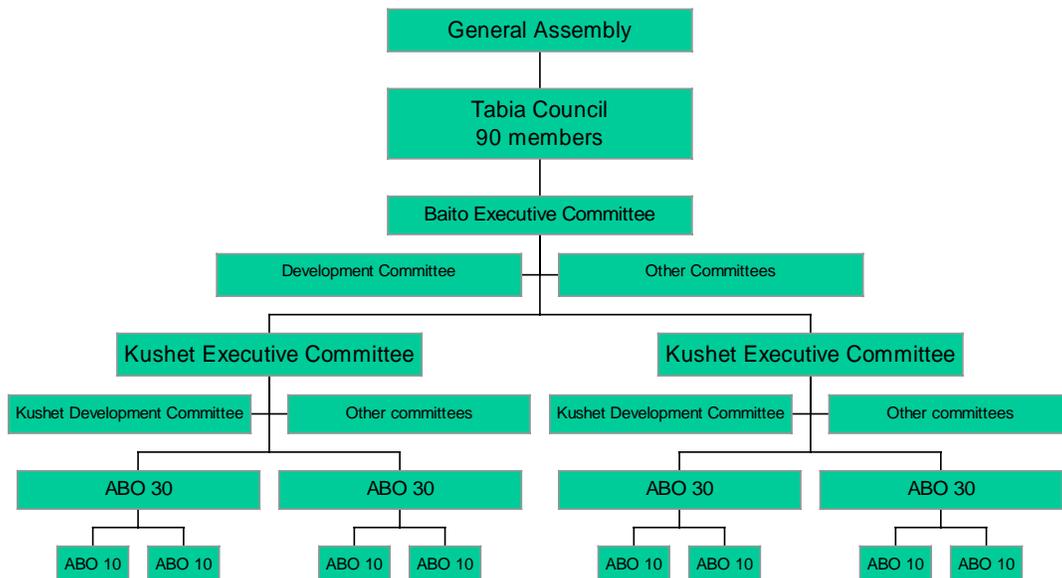
On the open access land with no rehabilitation measures there is only sparse tree and other vegetation cover. The area is accessed by cattle in the *tabia*, but not by animals from other *tabias*. Animals generally graze in their *kushet* level open access areas, and some *kushets* stress that they restrict outsiders' access. Major portions of the common lands are visibly degraded (slopes without soil and vegetation cover) and people report that there is a serious problem of erosion in open access areas with decreasing production of fodder and fuel. The area enclosures in Arena are open woodlands dominated by *Acacia* species, and belong to each of the four *kushets*. Every year more area is put under area enclosures, based on the decisions by the *tabia baito* in consultation with the people's general assembly¹¹. Conservation measures such as stone-bunding is taken-up on degraded hillsides and there was also an example of an individual carrying out stone-bunding on an unenclosed hillside next to his fields, to reduce the impact of soil erosion and slides on his farmland. In Kolla Geble, cultivation is the major land use (covering about 60 percent of the total area), followed by community plantation (18%), area enclosure (12 %), controlled grazing (6 %) and open grazing (3 %) (Appendix 3). Kolla Geble, therefore, differs from Arena in having less common land available, 175 ha or 40% of a total of 434 ha (0.14 ha per household, as

compared with 1.6 ha per household in Arena and approximately 1 ha per household as the *woreda* average. Relative to the livestock population it is particularly small, about 22 ha/1,000 livestock units in Kolla Geble compared to 620 ha/1,000 livestock units as in Arena).

3.2.3 Village institutions

The two villages share the same basic features of the organisational and institutional set-up for CPR management. The formal” organisation and structure indicated by Figure 4 is recently introduced and is complemented by other principles of organisation such as age, gender, kinship and power an example being an “informal” group of elders who deal with conflict resolution. The *Development Committee* (DC) under the *Tabia Baito Executive Committee* has the overall responsibility for CPR management and other developmental interventions in the *tabia*. However, the protected sites belong to defined *kushets*, and the *kushet* institutions are responsible for daily management, monitoring and conflict resolution.

Figure 4: The Baito system at *tabia* and *kushet* level



Source: Discussion with *tabia baito* members 28.1.99, revised after field work November 99

The *Tabia Council* has 90 members out of which (in Arena) 10 are women (in spite of the high proportion of women headed households). At the *kushet* level there is an Executive Committee under which ‘*Abo 30s*’ are formed. These are groups of approximately 30 households, responsible for extension and execution of development activities at *kushet* level, including CPR management. Within the *Abo 30*, again, one finds soil and water conservation groups of ten households each (“*Abo 10*”).

Area enclosures were introduced in 1993, by developing a land use plan with technical assistance from the Bureau of Agriculture and Natural Resources Development. The *General Assembly* ratified the land use plan. After the ratification, the *Development Committee* delineated the area enclosure and took care of the overall administration based on a *serit* ('bylaw'), which was also approved by the *General Assembly* (some *tabias* do not have written bylaws, but verbally agreed rules). The community recruited paid guards at *kushet* level to take care of the enclosures and the wildlife; people in general are also expected to keep a vigil and inform the *baito* about cases of violation. The bylaw mainly deals with the fines and penalties to be imposed on people for causing damage to trees in the protected area. Households may cut trees either in the protected areas or on their own farm only after obtaining permission from the *baito* and by establishing their genuine need for wood. The bylaws show considerable variation, but it appears that their emphasis has been on conservation rather than economic utilisation. In the study villages, people linked '*serit*' with punitive responses to the breaking of conservation rules. However, variation and examples of contemporary development show that the policy-framework and government actors permit a locally driven institutional development process.

3.2.4 *Outcome: the resource management situation*

The common pool resource management situation is the outcome of a dynamic and on-going history of institutional breakdown and revival. For a number of decades leading up to the early 1990s, it appears that villagers were not able to develop the institutions, technology and management practices to maintain the level of welfare for a growing number of people. On the contrary, they report that they experienced a severe degradation of some of their major assets, particularly the commons. Today, people have initiated a process of land rehabilitation. Arena has developed area enclosures on a proportion of its large common lands and Kolla Geble on the major part. One represents achievement and further potential, the other represents achievement with little scope for expansion and, therefore, more concern about intensifying management. People expressed support for the area enclosures stressing general ecological concerns and arguing that they were important for regenerating vegetation cover for soil and water conservation. They mentioned positive changes in the local environment including regeneration/growth of local and planted species. Some respondents said that they hunt birds close to the enclosures (while hunting inside is prohibited). Honey production had increased along with the flowering vegetation. In Kolla Geble people perceived increased tree cover to attract more rains. The rivulet now flowed for a longer

period, allowing farmers along its course to irrigate crops. New springs had come up in one of the *kushets*, easing the acute water scarcity of the households. Communities harvest grasses by the *cut and carry* system to stall feed livestock, for thatching or for use in nurseries, but the details of harvesting and distribution vary between *tabias* and *kushets*. Farmers normally share the grass equitably among households, but distribution may also be based on the household's labour input or grass may be sold at subsidised rates. When grasses are scarce, the community nominates needy people to share the available grass.

The shared perception of the enclosure strategy held by people, government institutions and the supporting NGO was striking and appears to be a major factor behind its scale and success. Through the *baito* at *tabia* level people have the major say in initiation and management, and they expressed support for the expansion of area enclosures. Arena is well endowed with common land and with the planned gradual expansion it may develop into an increasingly important asset for local people. In Kolla Geble, the constraint is the limited area available. Expanding the enclosures reduces the open access area, and the impact on that is a concern among some observers. In spite of their below average land holdings, people in Kolla Geble have chosen to expand the protected area to the point where today they have only 15 ha of open access land left. People have responded to resource scarcity (including less cultivated land per capita) by putting a large proportion of their commons under improved management: 152 ha or 91% of the commons are under one of three major forms of controlled management (area enclosure, community plantation or *hiza'eti*). Even with its small amount of open-access land left, cursory observation did not seem to indicate a more degraded status than that of Arena.

Some problems related to the fact that increased grass production does not apply to all areas or is interrupted after some years of bush and tree-regeneration, since fodder and tree production compete for space within the enclosures. People also said that management had been unsatisfactory in some cases, mentioning untimely harvesting and inequitable distribution. Many households voiced their needs for timber and other forest products. The *tabia* leadership was aware of the concerns and suggested a development strategy to provide more benefits to in terms of employment and income from forest-based activities such as timber harvesting, other forest produce and beekeeping. They stressed that bylaws could be amended to take care of such future needs of the community. People's expectation about

increased economic benefits from the area enclosures represents a major management challenge in terms of technical inputs today, institutional arrangements for utilisation and distribution in future, and value-adding through processing.

3.3 Comparison

3.3.1 Environmental rehabilitation of common pool resources

There are a number of similarities and differences in the complex common pool management situations described, both within and across the two regions of Gujarat and Tigray. SWDF and REST both aim to achieve environmental rehabilitation and food security through integrated land management and the intervention sites are situated in remote areas where the infrastructure development is poor and CPRs are vulnerable to non-sustainable harvesting levels. In all of the four study villages there are recent efforts - basically introduced in the 1990s - to mobilise and organise communities for resource rehabilitation through innovating community ownership, rules and management practices. These efforts are at different stages of development in the four villages, and in Chanasar (India) it is only at the stage of initiation. In three of the villages, the efforts have had observable impacts on smaller or larger portions of the commons. Local people monitor and assess the environmental rehabilitation process, focusing on a mix of economic and non-economic benefits, fodder production being an important success criterion in both areas. The 'forest land' of Chanasar and Kheda in Gujarat make up a clearly demarcated and unified piece of land on one side of the village. The common pool resource boundary is administratively defined in advance of the process of rehabilitation and institution building. The other common grazing land (*gauchar*) is either gone or negligible. In the villages in Tigray, the protected CPRs are more scattered and complex, with several protected area sites of different categories in each hamlet. People have a major say in defining the boundaries of protected areas, which are not pre-determined by administrative land categories. The relative dependence on the common pool land resources (whether "protected" or not) appears greater in Tigray, particularly in the village of Arena, due to the lower productivity of rain-fed agriculture. In India, the resource endowment has been radically enlarged by irrigation, and in terms of biomass production the forest areas play a minor role; this is also a reason for voluntary non-participation, whether in the JFM scheme in Kheda or in the grassland management in Chanasar. People in Gujarat portray the disappearance of their forest as a loss they are sad about; people in Tigray describe the process of land degradation as a threat to their livelihood base. Again, the historical and

ecological data are circumstantial, but the impression is that the resource degradation has been more severe in Tigray, to the point of threatening the biotic potential and resilience of large areas. For people in Tigray, the secondary benefits of improving the hydrology and soil stability on private farmlands are important incentives¹². In Gujarat, while an integrated watershed approach has many advantages, the SWDF supported development over the recent decades, covering more than 300 villages, has demonstrated substantial and sustainable intensification of the farming system without incorporating state-claimed common lands.

3.3.2 *Re-crafting village institutions*

Environmental rehabilitation has been facilitated by the changed policy and legal environment in both countries, aiming at increasing community rights in the management of commons and NGO support has relied on institutional development at village level. Local institutions have achieved a considerable, but curtailed, degree of autonomy: in both regions people express that they depend on external inputs for land investments, for continued technical follow-up and permission to carry out some management operations. In both cases, the future implementation of timber harvesting requires collaboration with the authorities, and people are uncertain about the technical and economic aspects. In villages in Tigray, defining user and right holder groups was not reported as a problem. This was related to the open-ended process of selecting new areas, and because they would fall within *tabias* and *kushets* which would define both the geographical boundaries, user groups and decision-making bodies. However, clearly defining the user group did not in itself guarantee equitable distribution in the actual implementation. In the two Indian cases, the definition of the areas was clear, but the identification of user groups was partly problematic. On the one hand, the policy places great emphasis on ensuring and documenting participation¹³. On the other hand, potential right holders are defined as all the households within the administrative boundaries of the *panchayat*. In both cases, this included many people who had not historically been associated with the forest area in question and who were settled quite far from it. In Kheda, it formally excluded some traditional users. Local people made “informal” adaptations: in Kheda, some traditional users outside the administrative boundary had nevertheless been invited to join the village forest institution; in Chanasar, the traditional users (indigenous) reported that people in the (remote, non-indigenous) *panchayat* centre had given verbal assurance that Chanasar people could retain their forest use rights under a JFM scheme (there is, however, a potential for conflict here). Once established, the village forest institutions in India ensure clear definition of right holders, including keeping membership records. Regular meetings and

payment of membership contribute to active participation, and the executive committees are accountable to the clearly defined group of users. Yet, in both areas, patriarchal cultures and low representation of women raise questions about the gender-balance of all aspects of management of the CPRs.

In India, national level institutional factors (including forest legislation favouring centralised, and partly corrupt, bureaucratic management) have been major constraints on developing local institutions for forest management. While the JFM policy calls for civil organisations to support the programme, government support is not operationalised and there are several clouded issues, such as compensation for investments by NGOs. Various actors, including SWDF, are addressing these issues through initiatives in networking and advocacy. Chanasar village is just one example of the general problem of timely implementation of the JFM policy at village level due to bureaucratic inertia¹⁴. At the same time, villagers also expressed commitment to and confidence in the democratic village forest committees. They are special purpose arrangements, on the side of the major government structure, which, in the context, partly explains their credibility. They also grow out of a history and living sense of community ownership to forest. People use the term that Forest Department own the forest “on paper”, and that they themselves are the “real owners”. The JFM initiative has the potential to contribute to a renewal of this sense of ownership. However, in some cases people have been pushed to, and still refer to the option of, exercising a negative form of ownership: “*if the Forest department does not honour our rights, we will just chop down the trees*”. In Tigray, the introduction of area enclosures went hand in hand with fundamental political changes at the regional and national level and with a radically new approach to local government. The role of the *baito* system in decision-making, mobilisation and co-ordination, particularly at the level of the village (*tabia*), is striking. The *baito* is accountable to its constituency in a direct manner and has made community-based soil and water conservation one of its major areas of work, because it is requested and supported by people. Area enclosures in Tigray may be said to be a co-management arrangement that has grown from the bottom-up. It has not been a case of government “*handing over land*” or inviting for “*joint*” management. In stead, government has been gradually discovering, acknowledging and later providing a rather loose policy framework for community driven environmental rehabilitation, facilitated and supported by NGOs like REST. Further work in 1999/2000 has shown the important role of district and regional level planning, monitoring and follow-up,

which complements decision-making and collective action by villages. In India, government ownership is combined with a powerful bureaucracy with long-standing prerogatives and interests in government land; in Tigray, a similar structure appears to be absent or dissolved by the more recent upheaval of civil war and change of regime. This difference in governmental control and ownership appears to be a major factor behind the difference in the extent of progress achieved between the JFM policy in Gujarat and the area enclosures in Tigray. Establishing a JFM programme is a time-consuming, bureaucratic process, while establishing area enclosures plantations in Tigray appears to have been swift and community-led. In Tigray, local government (the *baito* at *tabia* level) is empowered to control the management of commons, whereas in India local government (*Gram Panchayat*) is hardly involved at all. A separate local institution (forest committee or a co-operative) is normally responsible for JFM. However, once created this institution may give its full attention to forest management, with less political constraints. The empowerment of local government in Tigray was central in a consistent and co-ordinated approach to the rehabilitation of land commons, but today some observers question the ability of a broad-based political institution to handle the economic and technical issues of forest management. Area enclosures are subject to a policy debate about how to achieve a transition to higher economic productivity, as well as experiments with different patterns of ownership, including privatisation. The JFM scheme is clear through a contractual agreement between the community and the Forest Department, an experience relevant for clarifying rules, rights and duties governing area enclosure management in Tigray.

4 CONCLUDING REMARKS

The first phase of the common pool resource study under the “*triangular co-operation between Ethiopia, India and Norway*” aimed at a broad and “cross-cultural” understanding of the selected CPR issues. Some lessons and their implications are:

- 1 *Rural people in both Ethiopia and India demonstrated a commitment to rehabilitating commons, with a balanced concern about ecological processes and future economic rewards. In the successful cases, broad awareness and a desire to revert negative trends had been coupled with legitimate local leadership institutions and support from external agencies.*

2 *Community 'ownership' may be renewed through re-crafting of village institutions*

In both situations, the government claims ownership to the land commons, and in both situations people say that lack of property rights are part of the explanation for past mismanagement. Yet, they are also examples that communities have a strong historically based sense of community ownership to resources, within the framework of formal government ownership. "Re-crafting of village institutions" does not happen in a historical vacuum, but builds on this sense of ownership. Civil society organisations stimulate the renewal through facilitation, informing about and "linking" with appropriate policy initiatives, and providing resources. In the NGO areas visited, re-crafting CPR institutions also draws upon the experience and confidence that communities gained from collective action in other areas, particularly water resource development in Gujarat and political organisation for re-construction in Tigray.

3 *The framework of state-claimed ownership to land opened different avenues for NGOs to support village institutions. NGOs provided material support, technical advice, follow-up and advocacy of community interests, thereby playing important roles in facilitating co-management of village commons.*

Local institutional development, co-ordination among actors and local-specific histories are important for the consequences of government ownership. In India, JFM was initiated and developed as a government programme to involve communities in forest regeneration and management; in Tigray, area enclosures evolved through a grass-root process, which eventually got reflected in policy at regional level. REST grew out of a successful political resistance movement and enjoyed a close relationship with government. In India, policy requests NGO participation and their role is seen as particularly important in social mobilisation and in contributing to training and attitudinal change, even among government staff. On the other hand, some NGOs have reservations against making investments and getting involved in an area where bureaucratic practices lead to delays and uncertainty. The Indian situation calls for an active role for NGOs to speed up the process of involving and empowering communities, which, again, requires that the NGO role is clearly supported by the legal and administrative framework for JFM. NGOs are pursuing the challenge of converting innovative policy instruments into practice through advocacy and networking.

- 4 *CPR management is a dynamic process, not a harmonious-functionalist system, and the requirements made on local people and civil organisations change over time, particularly related to shifts in policy and its implementation, the regeneration of resources, the maturity of village institutions, market integration and emerging technical and economic needs of communities. The transition from externally supported environmental rehabilitation to economic productivity and self-reliance is perhaps the major challenge to village institutions and supporting agencies.*

People's comments and field observations suggested that forest planning and management are not adequate, and people in both regions made many suggestions about how to improve it. Some practical-level measures that deserve attention are participatory forest management planning, soil and water conservation techniques, species diversity for valuable non-timber products, and monitoring of project costs and benefits. Strengthening technical support and human resource development is a way to consolidate the institutional development process. The supporting government and civil society organisations must clarify their mutual sharing of responsibilities for external support in both the short and long term.

- 5 *The triangular cooperation project is an example of joint learning and experience sharing about different approaches to common pool resource management, but also that institutional, cultural and economic differences make both "comparison" and "transfer" of models and practices challenging. The major gain is to increase the understanding of complex processes of natural resource management and the way they evolve in response to new policies that present civil organisations with contrasting rules and opportunities.*
- 6 *When environmental rehabilitation is based on locally relevant perceptions, when it contributes to enhancing the productivity of the natural resource base of communities and when it strengthens village institutions, it is probably one of the most worthwhile investments of civil organisations and society at large.*

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End notes:

¹ Across India, an estimated 21,000 village institutions have brought 2.5. mill. ha of land under JFM.

² Classified forest land in Gujarat constitutes 9.6 % of its geographical area and about 6.1 % is under actual forest cover. The difference may be considered as degraded forest land, and is estimated to cover about 6,969 km² or 37 % of the recorded forest area (GOI, 1998).

³ REST's main programmes are i) Environmental rehabilitation and agricultural development, ii) Rural water supply, iii) Rural credit scheme and iv) Relief and social development (*The Five Year Plan 1996 – 2000*, REST, 1995).

⁴ Repeat visits were made in November 1999 (Tigray) and January 2000 (Gujarat), but here we only draw minor points from these visits.

⁵ In Talav *falia* of Chanasar, household members reported that they no longer fetch fodder from the 'forest' land, as agriculture residues fulfil their needs and the common land is rather far away from their hamlet. The entire *falia* of 33 families let households of other *falias* use their share of the fodder. Yet, they also stressed that their rights to the fodder had not been transferred, and could, in a given situation be exercised again.

⁶ SWDF and other NGOs report that it normally takes at least three years to establish an agreement between the Forest Department and a village institution about JFM. In January 2000, Chanasar villagers had formalised their Village Forest Institution and started the process of enrolling members, but had still not received approval for going ahead with JFM. In March 2000, however, SWDF reported that villagers had received their approval letter (*Adikhar Patra*) from Forest Department, bringing them one step closer to achieving an "agreement".

⁷ In January 2000, people gave the number of member households as 136, 107 from Kheda, and 24 and 5 from the neighbouring villages of Rajudia and Bambela, respectively. Of the 191 households in Kheda proper 84 or 44% were not represented. Reasons given by people for not joining the village forest institution were self-sufficiency in fodder and fuel wood, inability to pay the membership fee (Rs. 11 per month) and absence of family members. The Executive Committee is ready to incorporate new members, currently (Jan 2000) at a one-time entrance fee of 51 Rs (a sum which the EC is planning to revise as the time of final harvest comes nearer).

⁸ In January 2000, the Executive Committee and villagers were considering abandoning this distribution system, primarily because it was seen to lead to unequal distribution (due to variable quality of plots). Villagers reported that the grazing control system broke down in 1999

⁹ Major CPRs in Wori Leke are area enclosures for natural regeneration (*deni*); controlled grazing areas (*Hiza'eti*); open access areas, community plantations (*dagme greba*), and water bodies. The total land area is 96,240 ha, of which about 45,000 (47%) is cultivated. Commons potentially available for enclosure is 35,095 ha (36%). The stated target is to develop 21,640 (62% of available commons) through area enclosures or community plantations. By September 1998 the achievement was 3,508 ha of "Community plantations" and 4,023 ha "Area enclosures" a total of 7,531 ha or 8 % of total area and 21% of the available commons (*Source*: BoANRD, Wori Leke).

¹⁰ The cattle population of Arena Tabia was 2,608, with another 4,121 small ruminants pack animals, a total of 2,661 live stock units, or 2.1 LSU per household. In Kolla Geble there were 1,329 cattle and 3,041 small ruminants/pack animals, a total of 1,392 LSU, or 1.2 LSU per household (*Source*: Wori Leke Bureau of Agriculture).

¹¹ The baito chairman stated that the plan is to enclose at least 45 ha per year and the goal for the next five years is 340 ha (meeting, 29.01.99).

¹² During fieldwork in November 1999, people reported that more and more farmers are demanding that land upstream of their farms should be protected to achieve such effects.

¹³ It is required that 60% of right-holder households join the village forest institution, and that all households have been informed about the process and signed a 'yes' or 'no' to joining ("*the two lists*").

¹⁴ Of the more than twenty villages in which SWDF is supporting JFM, only two have actually achieved a JFM agreement with Forest Department.

Appendix 1: Main principles and strategies in REST area enclosures

1) Objectives
<ul style="list-style-type: none"> • Halt and reverse land degradation and check the adverse effects of run-off • Recreate natural resources, highly demanded by livestock, human beings, and the land itself • Improve the micro-climate of respective places and thereby maintain environmental stability in the region • Conserve the diminishing biological resources mainly forest trees, shrubs, herbs and grasses, and create habitat for wildlife
2) Strategies
<ul style="list-style-type: none"> • Creating awareness among rural people regarding <ul style="list-style-type: none"> - the importance of forests to the ecology and their relationship with drought - the significance of forests to prevent erosion - the effect of forests on downstream spring. • At later stages, allowing local people to use forest for farm implements, construction and firewood in a controlled manner • Allowing people to use grasses for their livestock by cut and carry system • Starting the project in lowlands where the land holding is relatively higher than the mid and highlands • Using lowland closures as demonstration to convince high and midland people about the significance of area closure by organising visits • Start the project in mid and highlands on patches of highly degraded area as pilot and expand to similar places by demonstrating the impact on the initially closed places • Involve women in all phases of project implementation.
3) Rural Community
<ul style="list-style-type: none"> • Decide about the location and size of land to be enclosed • Select guards to protect the enclosed areas • Play vigil role
4) Development Committee (of Tabia)
<ul style="list-style-type: none"> • Study sites that need to be enclosed and present proposal to the community for discussion and approval, • Demarcate the boundaries of the enclosed sites • Prepare draft bylaws for discussion and approval by the community • Carry out regular follow up of the guarding • Distribute harvested resources, such as dry wood and grass, among approved beneficiaries,
5) REST
<ul style="list-style-type: none"> • Provide indicative development options • Assist guarding on food for work basis • Carry out consistent follow up to control proper implementation and distribution of resources among community members
6) Utilisation of resources from enclosure areas
<p>Up to now, communities have benefited from enclosure areas grass by cut and carry system and dry wood collection. In situations where all community members could not share the material benefit, due to scarcity in resource availability, beneficiaries of grass and dry wood are approved by the villagers.</p>

Source: REST Research Division, 1998

Appendix 2: Land use in Jhalod sub-district and study villages, Gujarat

SWDF Project Area in Jhalod sub-district	No/Ha	Percent	Per hh (ha)
No. of households	27,705		
"Forest area" (ha)	10,520	18%	0.4
Irrigated area	3,491	6%	0.1
Unirrigated area (ha)	33,458	56%	1.2
Culturable waste with gauchar	4,556	8%	0.2
Area not available for cult.	7,944	13%	0.3
Total area (ha)	59,969	100%	2.2

Study villages (of Jhalod)	Kheda			Chanasar		
	No/Ha	Percent	Per hh (ha)	No/Ha	Percent	Per hh (ha)
No. of households ²	191			200		
"Forest area" (ha)	84	30%	0.4	110	28%	0.6
Irrigated area	136	49%	0.7	235	59%	1.2
Unirrigated area (ha)	38	14%	0.2	35	9%	0.2
Culturable waste with gauchar	14	5%	0.1	16	4%	0.1
Area not available for cult.	4	1%	0.0		0%	0.0
Total area (ha)	276	100%	1.4	396	100%	2.0

Sources SWDF files (List of basic details of the project villages of SWDF) (From: Census 1991).

Figure on irrigated land in Jhalod not up to date. Chanasar is of *panchayat* Raniyar Kanbi.

Appendix 3: Enclosed sites* in Arena and Kolla Geble

<i>Tabia/Kushet</i>	Community plantation sites ¹		Area enclosure sites ¹		Total enclosed		<i>Hiza'eti</i> ⁴	Unenclosed commons ³
	No.	Area (ha)	No	Area (ha)	No.	Area (ha)		
Arena								
Era Suru	2	70	1	151	3	221		550
Mesana	3	125	1	75	4	200		450
Bet Negus	4	168	1	35	5	203		350
Guanda	2	155	0	0	2	155		300
Sum	11	518	3	261	14	779		1 650
Percentage of total land		8 %		4 %		12 %		26 %
Total land area Arena²:		6 369						
Kolla Geble								
Wuhidet	2	24	3	24	5	48	2	2
Hibret	4	28	2	13	6	41	6	6
Serdi	3	16	1	6	4	22	4	3
Hayelom	3	11	2	10	5	21	3	4
Sum	12	79	8	53	20	132	28	15
Percentage of total land		18 %		12 %		30 %	6 %	3 %
Total land area Kolla Geble²:		434						

Sources: 1) REST, November 1999; 2) BoANR, January 1999; 3) Field work, January and November 1999

(*Tabia* Chairmen). 4) Arena does have *hiza'eti* land, but the team has not obtained the figures on area covered.

*) "Area enclosure" is the term used if only natural regeneration is practised in an enclosed site. "Community plantation" is the term used when trees have been planted in the enclosed site.