PRIVATE, COLLECTIVE AND CENTRALIZED SYSTEM OF INSTITUTIONAL ARRANGEMENTS IN COMMUNITY FORESTRY IN NEPAL

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Abstract: The practice of protection and utilization of common forest resources by rural people in Nepal has a long established history; the active management of such forests is a relatively new concept. The mechanism of community forestry has been developed since 1978 to stimulate active involvement of local people in forest management activities as a means to improve the livelihoods of these people. A well-managed community forest can provide a range of forest products to support the livelihoods of rural people. Under the community forestry framework, it is the local people who make decisions regarding the forest management, utilization and distribution of benefits from a forest; they are organized as a Community Forest User Group. Therefore, the responsibility of protection and management of a large proportion of Nepal's forest resources is on Community Forest User Groups. Presently around 850 thousands hectares of forest is under the control of about 11,000 Community Forest User Groups. However, it has been believed that the management of community forests in the hills of Nepal by Community Forest User Groups is passive and protection-oriented resulting in fewer benefits than otherwise could have. Consequently, the community forestry is now not only faced with the increasingly multifaceted challenge of reconciling the ranges of demand of various users within a community forests but also fulfilling the increased demand for forest products at national level.

This paper analyses the forest management and institutional development activities of three selected Community Forest User Groups from different parts of Nepal. It was observed that to tackle the present situation; Community Forest User Groups have developed various alternative institutional arrangements such as private and centralized system of forest protection and limited utilization. The legal foundation endorses only for collective institutional arrangements for the management of common forest resources by the Community Forest User Groups in the Himalayan Kingdom of Nepal. Allocation of limited use rights and protection provision to individual as private property are interesting and crucial for the successful rehabilitation of degraded forests. Such arrangements are believed to be formulated as best and appropriate alternatives in the local situation.

Key words: Nepal, Common forest, Community forestry management, Community forest user group, and Institutional arrangements

INTRODUCTION

In Nepal, particularly in the middle hills[1], forests are an integral part of the farming system. Farmers must have access to forest products such as the gathering of leaf material for fodder and for animal bedding and the collection of fuelwood and the extraction of timber for building and agricultural implements. Rural people, because of their dependence on a variety of forest products to maintain their subsistence agriculture, have for a long time played an important role in the use and management of the forests. It is quite common for there to be locally recognized claims and rights for individuals to use specified products from common property forests. However, in many parts of the country the sustainability of the farming system is threatened by a shortage of forest products (Bartlett and Malla 1992; Gilmour, Fisher and Hobley, 1989; Mahat 1987).

During the 1970's there was a growing recognition that the Department of Forests (DoF) alone could not manage the forests. A partnership between Government and villagers was seen as being essential to ensure that the forests were managed sustainably and that people had guaranteed access to forest products. In order to implement these ideas His Majesty's Government of Nepal (HMG) moved towards the adoption of Community Forestry (CF) in the late 1970's by enacting legislation[2], which allowed for the transfer of responsibility for forest management from the Government to the local P*anchayat*[3] as *Panchayat* Forest (PF)[4] and *Panchayat* Protected Forest (PPF)[5] (Joshi 1993; Bartlett 1992). During the past 2-3 decades, there have been several legislative changes, the aims of which were to hand over the forests and to empower the real users to manage the resources.

CF recognized the primacy of local people in the decision making process and provides effective mechanisms so that rural people can benefit from forest management. The heart of CF in Nepal is the development of a partnership between the local communities and the Department of Forests (DoF). The social unit representing the local communities of a particular forest in this partnership is a Community Forest User Group (CFUG) (Karki, Karki and Karki 1994; Bartlett 1992). To legitimize the CFUG's rights to harvest forest products this interaction must lead to the development of an Operational Plan (OP)[6], which indicates how the community forest will be managed.

Once a management agreement is reached between the District Forest Office (DFO) and a particular CFUG, the forest is handed over to that CFUG. The CFUG is then legally responsible to manage that forest. The responsibility of protection and management of a large proportion of forest resources is, therefore, on CFUGs (Chhetri et al 1993). A well-managed community forest can provide a range of forest products that are essential to the rural communities. Without management, community forests will not be able to produce

[1] Geographically Nepal is divided in to 5 regions namely tarai, siwaliks (churiya), middle hills, high mountains and high himal (MPFS, 1989). Middle hill is highly populated and ancient habitat for higher percentages of people.
[2] The legislation promulgated was Panchayat Forest and Panchayat Protected Forest Rules of 1978.
[3] The lowest level territorially based politico-administrative unit established under the partyless Panchayat system (1960 to 1990).
[4] A plantation forest handed over to the Panchayat as CF.
[5] A natural forest handed over to the Panchayat as CF.
[6] The OP is a legal agreement between the Government and the CFUG.

a regular supply of the forest products that communities require. In the absence of proper management, community forests may not be fully utilized and CFUGs may not benefit as much as they could have. In other situations, communities may have been over utilizing the resource and the forest may be degraded and will be less able to meet their basic needs from the forest. Therefore, appropriate applications of forest management operations are vital for optimum utilization of forest resources.

Present status

The progress of community forestry in terms of handed over forest area is presented in Table 1.

TABLE 1: Present status of community forestry in Nepal (DoF, 2002)

Total land area of Nepal	14.7 million ha
Total forest area	5.5 million ha
Potential community forest area	3.5 million ha
Forest area under community forestry	848,159 ha
Total no of CFUGs	10986
Total number of households	11,12,732
Target to reach the CFUGs number by the end of this fiscal year	12,000
Percentage of potential forest area handed over by the end of March 2002	24.2 %.

EXISTING POLICY AND LEGAL ENVIRONMENT

Presently, The Master Plan for the Forestry Sector 1989 as a long-term vision and periodic Five-Year Plans provide the policy base for community forestry implementation. Moreover, *The Forest Act of 1993 (First Amendment, 1999)* and *The Forest Regulations of 1995* are the act and regulations governing the functioning of CF in Nepal. In addition, to facilitate the process, Community Forestry Operational Guideline 1992; Community Forestry Directive 1996; Community Forestry Inventory Guideline 2001 has well been enforced by the Ministry of Forests and Soil Conservation. According to these, the land managed under CF is owned by the state and the land use rights are retained with the users (HMG 1995).

Important characteristics of formal CF legislation are:

All accessible forests can be handed over to users without any area, geography and time limit.
Land ownership remains with the state, but the land use rights belong to the CFUGs.
All management decisions (land management and forest management) are taken by the CFUGs.
Each member of the CFUG has equal rights over the resources.
CFUGs will not be affected by political boundaries.
Outsiders are excluded from access.
Mutually recognized use-rights.
Equitable distribution of the benefits.

State provides technical assistance and advice.

Field Planning Process in Community Forestry

The Operational Guidelines identified four phases in CF planning process namely investigation, negotiation, implementation and review. The formal CF field planning process starts with the identification of co-owners of the resource being considered using a procedure similar to Participatory Rural Appraisal (PRA). The community is then organized as a CFUG and the DFO issues a certificate of recognition of the CFUG. The criteria for the handover of national forests to a particular CFUG are:

Accessibility
Traditional use rights
Willingness to manage forest as CF
Capacity of users to manage the forest size.

Through the series of meetings and discussions among the users the followings arrangements are made by consensus of the users (Acharya, 1997).

Identification of users and recognition of mutual use-rights.
Preparation of a constitution describing the conditions for collective action.
Formulation of operational rules describing the conditions for how the resource will be managed.

The assembly of a CFUG is supreme in all decision-making processes. Assemblies prepare the constitution and the OP, define and recognize use rights, decide all kinds of rules, decide all forest management decisions including forest protection, harvesting, decide on the distribution of benefits and decide the running of CFUG funds and community development work. The assembly elects a Community Forest User Group's Committee (CFUGC) for the execution of CFUGs decisions and to conduct day-to-day work. Having prepared the constitution, OP, and CFUGC, the forest is then formally handed over to the CFUG. Review and revision of the OP are other follow-up functions to be performed in due course of implementation.

Community Forest as Common Property Resources

The community forest of Nepal has been recognized as a co-management model of common pool resource management (Khanal, 2001; Pokharel, 1997; Hobley, 1996). Oakerson (1992) developed a framework as a conceptual tool to examine the elements, which determine the functioning of a common property regime. Oakerson (1992) defines common property in terms of four distinct divisions: (1) The technical and physical attributes of the resource; (2) the decision making arrangements which govern the use of the resource; (3) the patterns of interaction among the user community; and (4) the consequences for the resource of user interaction. The Oakerson model has been successfully used to analyze the community forestry of Nepal (for example Khanal, 2001; Pokharel, 1997, Tiwari, 1996).

Search for an Appropriate Institutions in Community Forestry

Nepalese CF was criticized by some scholars (e. g. Fisher 1990) because of its over emphasis on establishing forest committees as the form of organization and as donor

driven approach (ICIMOD 2000; Pokharel 1997). The 1978 legislation was the local political unit; the *Panchayat* oriented and was considered to be an appropriate organizational unit (Karmacharya 1987). However, it was found that forests were controlled at a lower operating level than the *Panchayat* hence was unable to represent the real users. The *Panchayat* being a bigger, social and political unit consensus could not be reached regarding management of the forest and distribution of benefits. The second amendments of PPF rule in 1987 introduced the concepts of "user committee" in the line of the Decentralization Act 1982. For the first time, the existence of CFUGs is recognized in the "Act amending some forest acts, 1992".

Community Forest User Group (CFUG)

The Forest Act of 1993 defines the CFUG as a registered group of those "desirous to utilize the forest products by developing and conserving such forest for the collective interest". A CFUG is recognized as a self governing, corporate body which must be registered with the DFO. The CFUG can fix the price of forest products irrespective of HMG royalty rates, can sell products, raise funds and use the income for community development. The CFUGs with unrestricted administrative boundaries emerged as alternative option, which is more cohesive and determined than the *Panchayat* or "user committee" are now recognized as the optimum functional and appropriate local level institutions for implementing CF. The possibility of law enforcement and communal control is higher in smaller groups like CFUGs, which helps to reduce the potential problem of free riders in common property resource management (Hobley et al 1996; Karki, Karki & Karki 1994).

The institutional arrangement provision incorporated in different policy and legal instruments implicitly favors for the collective action arrangements in the CFUG. However, various alternative models have been used in practices. The paper aims to present various institutional arrangements that have been developed by CFUGs in order to implement CF programme successfully.

Methodology

Three CFUGs one from each of the three different geographic regions where CF implementation is in progress namely middle hill, churiya and tarai, were selected in order to fulfill the objectives of the paper. The semi-structured interviews, focus group discussions, informal discussions and key informants surveys were carried out in order to collect information from users and concerned departmental staffs. The principle of triangulation was applied to verify the information. Moreover, the researcher being from the hometown of case study 2 and having being worked with the case study 3, while working in the District as a government forest officer greatly helped data collection and verification.

A brief presentation of each case study is presented below and more detail is presented in the annex 1.

Case study 1: Malati Women Community Forest User Group

The Malati community forest is located in Bhakduwa Village Development Committee (VDC)[7], ward number 7 of Saptari District in Eastern Development region. It covers an area of 80.0 ha. The forest is predominantly natural *sal*[8] forest of pole development stage. A total of 113 households of are users of the forest. The present CFUC is 11 members. As the name of the user groups indicates all members are women. The main forest management operations done by this CFUG include singling, thinning, pruning, weeding, cleaning, soil conservation, fire control, grazing control, leaf litter collection, selective felling in different blocks of the forest. A watcher among the users is appointed by the CFUG and is paid. Grazing and hunting of wildlife is prohibited. Agricultural activity encroachment and initiating fire in the forest are prohibited.

The most important and key feature of this CFUG is the allocation of forestland to the individual households with limited rights and specific duties. The forest is divided in to small parcels and each parcel with ground identification was handed over to the member of the users group. The owner is responsible for its protection and limited management activities. The cutting of green grasses, branches, collection of fuel wood from branches and twigs and regeneration protection is under individual's responsibility. The owner can reap the benefit from the allocated plot with no time limit. However, collection of timber is under the responsibility of the CFUG. Moreover, the plot owner can sell the allocated plot to other members within the CFUG.

[7] The lowest level political body. There are about 4000 VDCs in Nepal.
[8] Sal is Nepali name for *Shorea robusta.* Latin names of plant species appearing in the text are presented in Annex 2.

Case Study 2: Bharkhore Community Forest User Group

The Bharkhore forest is located in Siwalaya VDC, ward number 1 of Parbat District in Western Development region. All the households of ward number 1 and one household from ward number 3 of Siwalaya VDC are recognized as users of Bharkhore forest. The main occupation of the users is subsistence agriculture. Presently, there are 104 households with a total population of 675 and the group is ethnically and economically heterogeneous. The constitution of this CFUG includes a provision for a 13 member FUC with representatives from different settlements and it will not be based on caste, wealth or ethnicity, however preference is given for women. Structurally, the present committee consists of seven men and six women and in terms of caste[9]. The Bharkhore CFUG's forest covers an area of 57.5 ha. This Southern facing forest represents the typical mid hills forest of Nepal. The forest is on the top of the hill slopes and settlements are scattered around it with the main settlement at the bottom of the hill slopes. The forest is predominantly natural *sal*[10] forest. Although this forest consists of some old remnant trees, it is basically a pole stage forest. The main forest management operations done by this CFUG include singling, thinning, pruning, weeding, cleaning, soil conservation, fire control, grazing control, leaf litter collection, selective felling, nursery operations and plantations in different blocks of the forest.

Two demonstrations plots have been established by this CFUG. The research design of plots is based on number of trees. The then Forest Research and Survey Center (FORESC)[11] (Stewart et al 1997) have replicated the first demonstration plot design in recent Action Research (AR) with different CFUGs in CF.

A watcher among the users is appointed by the CFUG and is paid. Grazing is not allowed in any season. Hunting of wildlife is prohibited. Removal of forest products and entering with equipment inside the forest other than those authorized is restricted. Causing fire, agricultural activity and encroachment of the forestland are prohibited. The harvesting process is an organized one through the formation of harvesting monitoring team and harvesting groups. Most of the forest products are divided into portions equal to the number of households and shared equally once. A small amount of money is charged depending on the nature of the products. Other products like NTFPs, ground grasses, leaf litter and jhikra[12] are free of cost.

Case study 3: Shankarnagar Community Forest User Group

The CFUG is located in the Shankarnagar VDC of Rupandehi district in Western Development Region. The forest was handed over as community forest in 1989 and was the first CFUG in the district. The CFUG includes all 1889 Households with the total

[9] In the Hindu caste system Brahmin is highest, Chhetri second highest, Newar second lowest and Kami is the lowest caste.

[10] Sal is Nepali name for *Shorea robusta.* Latin names of plant species appearing in the text are presented in Appendix 1.

[11] FORESC is a Governmental organisation authorised to conduct forestry research in Nepal.

[12] Dry and small branches used as firewood.

population of 8,472 from Shankarnagar VDC as users. The forest covers an area of 549 ha predominantly occupied by sal forest.

Out of 17 members CFUG committee chairman, vice-chairman, and treasurer are elected or selected among the users, 9 ward members one from each ward are automatically member and remaining 5 members are nominated by the chairman among the users. The chairman is the most influential and authoritative position and users have delegated their authority to the chairman.

The committee identifies the required number of watchers to protect forest and appoints among the members. Presently, four watchers are employed by the CFUG. The committee decides the harvesting period and the mechanism. The committee hires wage labors and the committee members are responsible for it's monitoring for which they are paid. Once the products reached to the depot are ready for selling. The forest products have to be purchase based on own requirements and the capacity of buying. There is no existence of system to receive forest products due to participation in harvesting activities.

RESULTS AND DISCUSSION

Types of institutional arrangements

The three case study presented in the paper clearly indicate the existence of various type of institutional arrangements within the community forestry framework. The community forestry framework explicitly or implicitly provides mechanism for collective arrangement only. However, in addition to collective system, the CFUGs have locally developed various alternatives suitable to their specific local situation and such arrangements have been copied in similar situation in other cases. Such arrangements vary from limited private ownership to centralized system.

Reasons for developing specific alternatives

There are specific reasons for the formulation of various institutional arrangements. The users of Malati CFUG were migrants who have chosen livestock keeping as a main income source. With the increased shortage of grass to feed livestock, they begun to explore potentiality of grass production, which ultimately lead to the formulation of, allocating individual plots of community forest for grass production. This practices has also been copied in nearby CFUGs as successful institutional arrangements.

On the other hand centralized system in Shankarnagar CFUG was introduced due to the problems repetitively encounter by the CFUG. The main problems were low level of participation, monitoring problem of large number of users and sending children in work. The committed strong leadership is the key to develop as cooperative. Truly speaking from its formation in 1989 the CFUG is working in the centralized system. The committee members are working as key members of a company and running the CFUG as a successful company. The delegation of power to the committee members is making the m more responsible. This practices has also been found to be applied in CFUGs having higher number of users and larger forest areas and especially in the tarai region. The nearby market has created alternative job opportunity and influences for higher prices for forest products.

The Bharkhore CFUG is working successfully based on the principle of collective action. There is high level of social cohesion and tied by kinship. The activities of Bharkhore CFUG are being copied by neighboring CFUGs (especially in Dhaulagiri regions) and in Action Research (AR)[13] aiming at better management of the community forests in other areas. The following factors appear to be important in the successful community forest management by Bharkhore CFUG.

The pre-existence of an indigenous forest management system.

Homogeneity of values and desires regarding forest management and benefits.

Effective adoption of the 'learning process' to made amendments to the OP and constitution (prescriptions and rules).

Strong local feelings of forest resource ownership. This confidence was strongly built when they were able to get benefits like firewood through legally cutting of green trees[14].

Proper recognition is given for women, the poor and occupational caste in the CFUC and in decision-making processes.

The organization of assemblies to discuss common problems has helped to develop confidence in getting an equal or equity share of forest products and organized harvesting has helped proper implementation of management activities in the forest

Rewards system. It has helped to motivate and to develop skills among the users.

Grass utilization: variation within three user groups

Grass production and utilization was one of the key features in Malati and Bharkhore CFUGs. In Malati grass production was a major activity to support livestock where grass production use rights was retained by individual users within the framework of CF. There was no limitation for time and sales restrictions. In the Bharkhore CFUG grass production area is annually visited, productivity is assessed and harvesting rights for each year is allocated to the users with most needed individual first and same process is followed each year. Thus the use rights is retained by the group. However, in Shankarnagar CFUG, grass production activity has not mentioned in the OP and no such arrangement has been developed.

Factors affecting institutional arrangements

There are at least three different factors responsible to formulate various alternative arrangements in community forestry. These are nature and condition of forest resources, community structure and market influences. The development and functioning of any of the three institutional arrangements is the result of synergy of all these three factors and should not be considered in isolation.

Forest Resources Condition: The larger forest area containing high value timber species such as sal or khair favors for the development of centralized arrangements. The smaller forest area normally favors for the development of centralized system. The production of

[13] Spacing based designs are simpler and easier to replicate by the users compare to traditional designs based on canopy closure.

[14] Cutting of green trees is legally banned in Nepal but CFUG can exercise such practices if it has been included in Operational Plan and for user group level utilisation.

specific non-wood forest products such as grass has favored for the formulation of private arrangements.

Community Structure: The larger number of users within a CFUG has created problems in awareness, identification and monitoring resulting in low level of participation. The dynamic and changing community structure resulted due to high rate of migration caused for low social cohesion, fluctuating users numbers and residing non-users within the users boundary. The participation of all members in decision-making is not possible for all decisions. Forest management activities are not implemented through people participation rather through the contractors, which ultimately hampers the development of feeling for ownership. These situations have favored for centralized system and antonym situation of these have favored for collective arrangements. The existing of high social cohesion has also favored for limited use rights allocation to individual users in community forestry.

Market Influences: The existence of nearby market has provided alternative employment opportunity. The low level of dependency of agriculture in forest also favored for the production of long-term products such as timber and consequently centralized arrangements. The table 2 presents factors and their role in the formulation of different institutional arrangements and table 3 presents existing situation resulted due to different institutional arrangements in community forestry.

Table 2: Factors and their role in the formulation of different institutional arrangements in community forestry.

Factors	Private	Collective	Centralized
Forest Resources Condition			
Forest Area	Small	Small	Big
Forest Stage[15]	Pole	Pole	Pole
Forest Boundary	Traditional use Admino-political	Traditional use	
Main Species	Shorea robusta	Shorea robusta	Shorea robusta
Community Structure			
Number of Users	Small	Small	Large
Social Cohesion	High Limited	High	
Local Networking	Yes	No	No
Settlement History	Recent	Long	Recent
Market Influences			

[15] Forest stage seems to have no role in the development of institutional arrangements.

Nearby Market	No	No	Yes
Agriculture dependency	High	High	Low

Table 3: Existing situation resulted due to different institutional arrangements

	Private	Collective	Centralized
Management objectives	Multiple products	Multiple products	Timber
Decision-making	Individual+CFUG	CFUG	CFUGC
Time horizons	Seasonal, annual, periodic to long term	Seasonal, annual, periodic to long term	Periodic to long term
Participatory level	High	High	Limited
Implementation	Users	Users	Contract labors
Monitoring	CFUG	CFUG	CFUGC
Fund mobilization	Benefits to all	Benefits to all	Benefits to rich
Management aim	Forestry development	Forestry development	Fund generation

Opportunities and constraints

Each institutional arrangement provides opportunities over the other and suffers by some constraints compare to other. Such opportunities and constraints in each of the arrangements could be:

Private arrangements

The opportunities associated with such type motive of institutional arrangements could be:

Effectively protection of resources as private property

Benefits are realized in short time period which increases "own feeling"

Grass production is heavily supporting livestock farming which is a major source of income.

Provides mechanism to develop alternative arrangements within the community forestry

The constraints associated with such type of institutional arrangements could be:

Unequal distribution of resources (not all plots of equal size and productivity)

Allocating plots to new members is difficult (new numbers is not known)

Variation in accessibility of plots (close and far)

Priority on grass production (limited objective)

Collective arrangements

The opportunities associated with such type of institutional arrangements could be:

Effectively managed as common property

Multiple products objective increased land productivity

High level of participation increases chance for success

The constraints associated with such type of institutional arrangements could:

Interest of some groups will not be considered.

Elite dominancy

Usually benefits are realized in long term

Provide mechanism to develop alternative arrangements within the community forestry

Centralized arrangements
Misappropriation of power - needs strong monitoring from the government and local community.
Distribution implications – concerns of poor and disadvantageous groups are not addressed.
Elite dominancy – needs improved extension strategy.
Political influences – politically elected ward members may introduce politics.

The opportunities associated with such type of institutional arrangements could be:
Effectively managed by committee as company
Timber management objective increases value of forest products
The constraints associated with such type of institutional arrangements could be:
Limited peoples participation
Misappropriation of power by committee members
Concerns of poor and disadvantageous groups are not well addressed.
Elite dominancy
Priority on timber production (limited long term objective)
Political influences – politically elected ward members may introduce politics.

Conclusion and Recommendations
There exist at least three different kinds of institutional arrangements in CF. They range from limited individual ownership to two extreme institutional arrangements namely the collective and centralized. All users are equally recognized and participate to function as collective institution whereas few selected or elected individuals dominate and took the responsibility of running collective action as centralized co-operative institution. No single and homogenous institutional arrangements can work all over the country.

The division of community forest and allocation to individual in Malati CFUG is very interesting practices in community forestry. The individual owner is entitled for selling non-timber forest products to other members from the plot as such. This practice has provided an opportunity to re-think on analytical framework for analyzing community forestry as common pool resources. There is a combination of collective action and individual action in the same piece of land. The collective action is operating to manage high value timber products and individual action is operating for the production of high demanded grass products to support subsistence needs of livestock rearing. The situation like Malati CFUG with identified users, high social cohesion and for the production of low value but high demanded grass near the users settlements, such limited private arrangements could function well. This example also put question to rethink on the indivisibility of common property resources as one of the key characteristics as described by Oakerson, 1992. Karki (1991) identified community forest as indivisible resources in the hills of Nepal. A specific kind of indigenous arrangements development by rural people in Nepal has been found. In other words they have developed; a mix of strategy, some forest products are controlled and managed in individual basis whereas others are controlled and managed in group basis.

In a situation like Bharkhore CFUG with identified users with high social cohesion and kinship, high level of dependency on agriculture and dependency of agriculture on forest, homogeneous values and desires regarding forest management and benefits, low level of market intervention will favor for the functioning of collective institutional arrangement.

In a situation like Shankarnagar CFUG, having large number of users with big forest size and potential to yield high value timber species such as sal, sissoo and khair; the centralized system is more effective and functional. The development of the CFUG as a public timber co-operative will promote effective and successful forest management activities.

There should be provision to incorporate various heterogeneous local situations and factors that are responsible for successful functioning of such user groups. However, present legislation in this regards are conservative and define main objectives of community forestry to fulfill basic needs demands for forestry products. There is a need of more studies to identify the possibility of such alternative institutional arrangements in more CFUGs in different part of the country.

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Annex 1

Case study 1: Malati Women Community Forest User Group

The CFUG and its committee

The Malati forest is located in Bhakduwa Village Development Committee (VDC), ward number 7 of Saptari District in Eastern Development region. 113 households of ward number 7 and 39 households from ward number 9 of Bhakduwa VDC are recognized as users of Malati community forest. Maghau and Mohanpur CFUGs were formed two years ago then the formation of Malati Women CFUG. In fact 113 women from Maghau and 39 Mohanpur formed the Malati Women CFUG.

The main occupation of the users is subsistence agriculture where livestock sub-sector is the main source of income. Presently, there are 152 households with a total population of 721 and the group is ethnically and economically heterogeneous. About 90 % of the households are hills migrants settled in early 70's. The present CFUC is 11 members. As the name of the user groups indicates all members are women. The main responsibility of the CFUC is to implement the OP and the constitution of the CFUG. The CFUC is also responsible for conducting day-to-day work.

The Malati Forest

The Malati women CFUG's forest covers an area of 80.0 ha. This forest lies in the churiya region of Nepal, which is identified, as fragile and is highly sensitive to degradation. The settlements are scattered below the forest it with the main settlement in the plane land. The forest is predominantly natural *sal* forest. Other species found are *barro, bhalayo, bel, bhorla, harro, khair, karma, sissoo, saj,* and *simal*. Although this forest consists of some old remnant trees, it is basically a pole stage forest.

Forest Management Operations

The main forest management operations done by this CFUG include singling, thinning, pruning, weeding, cleaning, soil conservation, fire control, grazing control, leaf litter collection, selective felling, and plantations in different blocks of the forest.

Forest protection mechanism

A watcher among the users is appointed by the CFUG and is paid. The work of the watcher is monitored by the CFUC. Grazing is not allowed in any season. Hunting of wildlife is prohibited. Removal of forest products and entering with equipment inside the forest other than those authorized is restricted. In case of fire it is the responsibility of all members to control it. Agricultural activity and encroachment of the forestland are prohibited. Removal of boulders, soil and any activities that hampers the forest and its regeneration is prohibited.

Individual land allocation

The most important and key feature of this CFUG is the allocation of forestland to the individual households with limited rights and specific duties. The forest is divided in to sub-division and each division with ground identification was handed over to the member of the users group. The owner is responsible for its protection and limited management

activities. The cutting of green grasses, branches, collection of fuel wood from branches and twigs and regeneration protection is under individual's responsibility. The owner can reap the benefit from the allocated plot with no time limit. However, collection of timber is under the responsibility of the CFUG. Moreover, the plot owner can sell the allocated plot to other members within the CFUG.

Forest products harvesting

As already mentioned whole forest block is divided into a number of small division equal to the number of users. The authority of harvesting of forest products within the allocated block remains with the respected individuals. The user groups controlled timber harvesting.

Forest products utilization

The owner utilizes the forest products obtained from the harvesting of allocated plots. The main products obtained are grasses, leaf litter, branches and twigs. If firewood is obtained from the felling of trees priority is given to the plot owner.

Benefit sharing and social development

The existing legislation provides freedom for the CFUG to spend CFUG funds on any priority sector identified by the users provided 25% of the total income has been expended to the forestry development activities. The CFUG put the forestry development sector as the first priority. However, in terms of expenditure a large amount of funds is expended on the community development works. This includes the supporting salary for four teachers to run a school, establishment of a tube well for drinking water and road construction.

Case Study 2: Bharkhore Community Forest User Group

The CFUG and its committee

The Bharkhore forest is located in Siwalaya VDC, ward number 1 of Parbat District in Western Development region. All the households of ward number 1 and one household from ward number 3 of Siwalaya VDC are recognized as users of Bharkhore forest. The main occupation of the users is subsistence agriculture. Presently, there are 104 households with a total population of 675 and the group is ethnically and economically heterogeneous. The constitution of this CFUG includes a provision for a 13 member FUC with representatives from different settlements and it will not be based on caste, wealth or ethnicity, however preference is given for women. Structurally, the present committee consists of seven men and six women and in terms of caste[16]. The main responsibility of the CFUC is to implement the OP and the constitution of the CFUG. The CFUC is also responsible for conducting day-to-day work. The record shows that there has been more number of User Group assemblies compared to legal provision. For example in the first two years there were 11 CFUG assemblies compared to the legal requirement for four assemblies.

Background of Bharkhore Forest:

[16] In the Hindu caste system Brahmin is highest, Chhetri second highest, Newar second lowest and Kami is the lowest caste.

This forest was traditionally managed under the *talukdari*[17] system of land revenue collection. The forest was nationalized in 1957. The *talukdar* was no longer able to resist the states decisions. This resulted in the conversion of traditionally *talukdari*-controlled forest into open access. After this the role of the villagers was similar to the role of the herder's described by Hardin (1968) in "The tragedy of the commons". The disaster scenario of ruining an open access natural resource was inevitable. In 1977, evidence of the forest degradation was apparent when a large landslide damaged a few houses in the village. Villagers realized that the cause of landslides was the removal of forest cover. Therefore, either they had to protect the forest or leave the village. They chose the first option and began to initiate forest protection measures. Finally, they succeeded in forming a committee with some forest rules and a *heralu* (forest watcher) was appointed and paid according to the *manapathi*[18] system. Thus an indigenous forest management system (as defined by Fisher 1991) was established in 1978. With the restoration of democracy in Nepal in 1990, the P*anchayat* system was abolished and under the new CF policy the forest was officially handed over to the FUG in April 1993. Since then this FUG has been involved in various forest management activities.

Bharkhore Forest:
The Bharkhore CFUG's forest covers an area of 57.5 ha. This Southern facing forest represents the typical mid hills forest of Nepal. The forest is on the top of the hill slopes and settlements are scattered around it with the main settlement at the bottom of the hill slopes. The forest is predominantly natural *sal* forest. Other species found are *amala, angeri, archale, bhakimlo, bhorla, chilaune, dhangero, jamun, katus, kaiyon, kyamun, mauwa, phalant, saj, sindure* and *simal*. Erosion sensitive areas are planted with grasses like *amliso,* Napier and Setaria. Although this forest consists of some old remnant trees, it is basically a pole stage forest.

Forest Management Operations

The main forest management operations done by this CFUG include singling, thinning, pruning, weeding, cleaning, soil conservation, fire control, grazing control, leaf litter collection, selective felling, nursery operations and plantations in different blocks of the forest.

Action research plots
Two demonstrations plots have been established by this CFUG. In August 1994, after 8 months of harvesting in block 1, the CFUC members during field visits noticed the trees from the harvested blocks growing faster than the others in terms of height and diameter. They felt confident that they could manage the forest but were still not sure about the most effective management regime. They decided to explore this issue further through some trial plots. They called an emergency CFUG assembly to discuss the issue and

[17] It refers to the management of forests under the control of talukdars. A talukdar is a state appointed local level revenue collector also had the responsibility for controlling access to the forests and for distributing forest products.
[18] A system adopted in rural Nepal in which forest users appoint forest watchers and each household Contributes a certain amount of money or grain to pay the watcher as salary.

finally reached an agreement to establish a demonstration/research trial plot. The research design of this plot is based on number of trees. In 1997, the CFUG decided to establish a second demonstration plot to focusing on exploring the potential for firewood production with two replications. The first demonstration plot design has been replicated in recent Action Research (AR) with different FUGs in CF by the then Forest Research and Survey Center (FORESC)[19] (Stewart et al 1997).

Forest protection mechanism

A watcher among the users is appointed by the CFUG and is paid. The work of the watcher is monitored by the CFUC. Grazing is not allowed in any season. Hunting of wildlife is prohibited. Removal of forest products and entering with equipment inside the forest other than those authorized is restricted. In case of fire it is the responsibility of all members to control it. Agricultural activity and encroachment of the forestland are prohibited. Removal of boulders, soil and any activities that hampers the forest and its regeneration is prohibited.

Forest products harvesting

The harvesting process is an organized one. The second regular CFUG assembly decides the date and the organization of harvesting procedures. Each year a harvesting monitoring team and harvesting groups are formed based on the numbers of households and characteristics of the labor force available such as gender, disabilities, sick people and older households. The forest block is divided into a number of small *bhag* (sub-blocks) equal to the number of harvesting groups. The group leader is responsible for conducting the harvesting operations in his/her own *bhag* (division). After the completion of the harvesting operations, the monitoring team monitors each *bhag* and the best performing group leader is rewarded in cash.

Forest products utilization

Most of the forest products are divided into portions equal to the number of households and shared equally. Firewood is stacked into *chattas*[20]. The CFUC supervises the stacked *chattas* to make sure that *chattas* are of equal size and numbered. A lottery is drawn to allocate the numbered *chattas* to households. Poles are counted and distributed equally to each household. Similarly, fodder, leaf litter and *jhikra* are shared equally. However, the distribution systems of timber, agriculture implements *halo*[21] and the allocation of forest areas for grass cuttings are different. Timber and *halo* distribution are decided by the CFUGC based on the seriousness of demand however, *halo* and timber will not be given repeatedly unless each household gets once. A small amount of money is charged depending on the nature of the products. Other products like NTFPs, ground grasses, leaf litter and *jhikra* are free of cost.

Benefit sharing and social development

[19] The then FORESC (presently Department of Forest Research and Survey) is a Governmental organisation authorised to conduct forestry research in Nepal.

[20] Chatta is stacked fuelwood, dimensions of which are 4.5ftx7.5ftx3.5ft.

[21] Main agricultural implement used for ploughing lands in the hills of Nepal, mainly made of wood.

The CFUG put the forestry development sector as the first priority. However, in terms of expenditure a large amount of funds is expended on the community development works. This includes the opening and running of a primary school in the initial years (is now run by the Government), establishment of a rice-mill in the village, construction of 1.5 km of road, improvement of the drinking water supply, assistance in school and private toilet construction, temple construction, bridge construction, assistance in the drinking water programme of a neighboring CFUG.

Networking

This user group has included in its constitution to organize one CFUG workshop or seminar each year. The objectives of the workshop and seminar are to increase awareness of HMG policy on CF, to share experiences between CFUGs, to deal with conflicts, and to discuss protection and harvesting of forests and the utilization of the products.

Expenditure of CFUGs Funds

The following are the four general guidelines set by the CFUG for the expenditure of funds.

Forest management works.
Extension of CF policy.
Workshops, seminars and study tours.
Community development works.

The chairman, secretary and treasurer are responsible for maintaining the financial records. The CFUG had conducted financial auditing by hiring a licensed auditor in the past.

Case study 3: Shankarnagar Community Forest User Group

The CFUG and its committee

The CFUG is located in the Shankarnagar VDC of Rupandehi district in Western Development Region. The forest was handed over as community forest in 1989 and was the first CFUG in the district. The CFUG includes all the households from Shankarnagar VDC as users. The majority of users are dependent on agriculture. The forest covers an area of 549 ha and the nature of community forest user group is ethnically and economically heterogeneous. The CFUG includes 1889 Households with the total population of 8,472. There is a continuous migration of hill people in the VDC.

The CFUGC consists of 17 members. Out of 17 members, chairman, vice-chairman, and treasurer are elected or selected among the users, 9 ward members one from each ward are automatically member and remaining 5 members are nominated by the chairman among the users. The chairman is the most influential and authoritative position and users have delegated their authority to the chairman.

Forest protection mechanism

The forest is protected by employing forest watchers. The committee identifies the required number of watchers to protect forest and appoints among the members.

Presently, four watchers are employed by the CFUG. The main protection activities include protecting the forest from tree felling, encroachment, hunting of wild animals and fires.

Forest products harvesting

The harvesting of forest products is an important activity of the CFUG. The committee decides the harvesting period and the mechanism. The committee hires wage labors and the committee members are responsible for it's monitoring for which they are paid. The forest products are transported up to the depot by the wage labors or by contracting tractors. In general, first priority for hiring the wage labor is among the users.

Forest products utilization

Once the products reached to the depot are ready for selling. Generally, the depot is open once a week every Saturday (official holiday) and products are sold on agreed rules. The firewood and poles are sale on the basis of weight and timber on volume.

Benefit sharing and social development

The forest products have to be purchase based on own requirements and the capacity of buying. There is no existence of system to receive forest products due to participation in harvesting activities. The committee member receives NRs 60/day as allowances for hiring time in forest products selling and bill signing. Similarly, the treasure of the committee receives NRs300/month for his services to the committee. The CFUG fund is invested in various local development activities such as road construction, office building construction, school and temple support.

Annex 2: Latin name of plant species appearing in the text.

Nepali Name	Latin Name
Amala	*Phyllanthus emblica*
Amliso	*Thysanolaena maxima*
Angeri	*Lyonia ovalifolia*
Archal	?
Barro	*Ficus bellarica*
Bhalayo	*Anacardium spp*
Bel	*Eagle marmelos*
Badahar	*Artocarpus lakoocha*
Bans	*Dendrocalamus spp*
Bhakimlo	*Rhus spp*
Bhorla	*Bauhinia bhorlii*
Chap	*Michelia spp*
Chilaune	*Schima wallichii*
Chiraito	*Swertia chiraita*
Dnagero	*Woodfordia fruticosa*
Dubo	*Cynodon dactylon*
Harro	Terminalia chebula
Jamun	*Syzygium cumini*
Lokta	*Daphne bholua*
Katus	*Castanopsis indica*
Kaiyon	*Grevillea robusta*
Khaniyo	*Ficus semicordata*
Kutki	*Picorrhiza kurroa*
Khair	Accacia catechu
Karma	Adina cordifolia
Kyamun	*Syzygium operculata*
Mauwa	*Engelhardtia spicata*
Napier	*Pennisetum purpureum*
Phalant	*Quercus spp*
Saj	*Terminalia tomentosa*
Sal	*Shorea robusta*
Setaria	*Setaria anceps*
Sindure	*Mallotus phillippinensis*
Sissoo	*Dalbergia sissoo*
Simal	*Bombax ceiba*