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New Challenges Facing Asian Agriculture under Globalisation

Volume II

Edited by

Jamalludin Sulaiman
Fatimah Mohamed Arshad
Mad Nasir Shamsudin

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A Study on Linkage between Natural Resource Management and Well Being in Nepal: An Entitlement Approach

Keshav Lall Maharjan and Narendra Mangal Joshi

Introduction

The rural people of Nepal are overwhelmingly perceived as small farmers whose livelihood depends heavily upon natural resources, especially forest resource in addition to farming. The forests of Nepal play a critical role in the well being of the framing households, particularly in the hilly regions where access to alternative source to energy for cooking, nutrition for animal, material for fertilising agricultural fields and constructing materials for shelter and house building, is limited. Of the total energy consumption, 78 per cent is supply from fuel wood. Out of that, 98.5 per cent is consumed in the domestic sector mainly for cooking and heating. Similarly, out of the total feed consumed by livestock, the forest fodder fulfils 62 per cent, providing 42 per cent of the required nutritional values, and grass and pasture fulfil 26 per cent (State of Environment, 2001). Almost all the construction materials are forest products in rural Nepal. Much of the dry and rotten leaves used to fertilise fields come from the forest. These resources are still considered as a gift of nature and people are reluctant to pay cash for it. As many rural people depend on these resources, the linkages between rural wellbeing and management of these natural resources are often a serious issue for developing countries like Nepal.

The environmental entitlement approach has been developed to link the natural resource management with poverty as Community Based Natural Resource Management (CBNRM) sector for the sustainable use of the natural resource in the community[1] (Leach, Mearns and Scoones, 1999). The entitlement approach links the natural resource management with poverty by assessing the ability of the people to command over forest goods (bundles of forest resource commodities) and their utilisation through legal means for the well being of the people. The ability to derive goods from natural resources for enhancing the well being depends on the endowments (right and resources) people have. In each society there are rules governing these rights. These rules are instituted in society and transfer endowment into entitlements, which help to better the well being of the people. This framework is generally known as Environmental Entitlement Framework (Figure 50.1).

In the Environmental Entitlement Framework, the institute is highlighted as a mediator, which transfers natural resource into endowment – entitlement and well being of people in

[1] This approach has been developed on basis on entitlement approach for poverty and famine put forward by A. Sen.

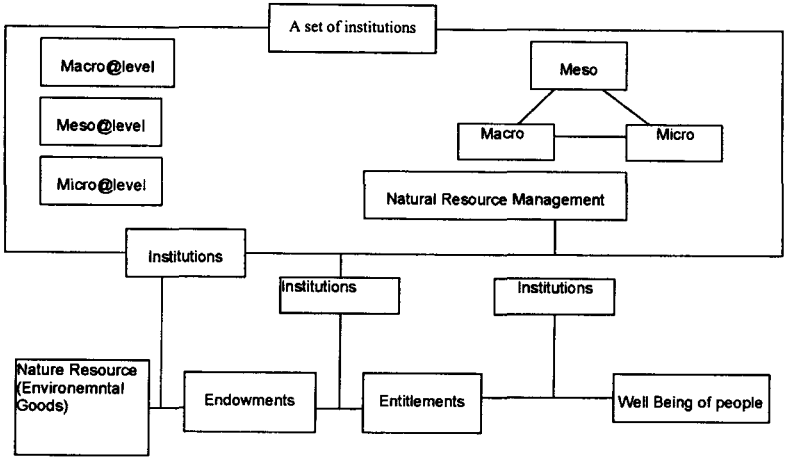

Figure 50.1: Environmental Entitlement Framework to Link Natural Resource Management with Rural Well Being

the sequence. The endowment in this paper is defined as "the ownership bundles which is derived from rights and resources people have". Similarly, entitlement is defined as the combined outcome of both (a) the forest resource bundles that people have command over as a result of their ownership, own production, or membership of a particular social economic group; and (b) their ability to make effective use of those resource bundles. Environmental entitlement is represented by the alternative sets of utilities derived from forest goods over which the people have "legitimate" effective command and which are instrumental in achieving well being (Leach, Mearns and Scoones, 1999). The term "legitimate" refers not only to commands sanctioned by a statutory system, but also to commands sanctioned by the customary rights of access, use or control, which is governed by institutions.

In Community Based Natural Resource Management, community characteristics highly influence the management of the resources. The social differences within a community, like gender, caste, wealth, age, origins and other aspects of social identity, divide and cross cut so-called community boundaries according to time span. Side by side practices and actions carried out at one time, under a set of institutional arrangements, may leave a legacy that influences the resource availability to become endowments for people at some future time.

This paper tries to complement and add emerging set of issues in CBNRM, and attempts to focus on institutions as mediators of natural resource management and rural well being, using the Environmental Entitlement Framework conceptualised by Leach, Mearns and Scoones. This approach has been used to study the CBNRM practices in Nepal in two different stages, before 1990 and during the late 1990s. Due to socially and historically instituted social differences between different caste groups, for this study we have chosen caste/ethnicity as a unit to see how it affects the access and control over the forest resource before 1990 and during the late 1990s.

Resource Availability in the Study Area

This study was conducted on the Dal Choki Village Development Committee in the hilly region of Nepal.[2] Even though it is very near to the capital city, Kathmandu, this area is as rigorous as the other remote hilly areas of Nepal. Almost all of the area of the study village lies in the steep hill of the Mahabharat Range. The main ethnic/caste groups in the village are Brahmin/Chhetri, Magar, Tamang and Occupational caste. Currently there are four Forest Users Groups organised to manage the forest resources in the Dal Choki Village. According to the District Forest Office, the forest occupies more than 56 per cent of the village total area (389 ha.).

A study done in the study area of the present community forest during 1997, using a land utilisation map of 1978/1979 and a topographic map of 1994, indicated that the forestland had been increased by 20.7 per cent from 1978/79 to 1994. The main reason behind this is the project implemented by the District Forest Office (DFO) in the early 1980s, with the support of an Australian fund which helped to plant lots of saplings in private as well as on government land. The management of part of government forest areas was handed over to the Community Forest Users Groups during the 1991 to 1993 period. According to DFO estimation, the growing stock of all community forest in the study area is 75 cubic meters per ha. Before the 1970s, the figure was estimated to be 95 cubic meters per ha which decreased up to 65 cubic meters per ha in the late 1980s. The forest area covers 56 per cent of the study village. From the field study, it was found that almost all the forest of the study area lies in an accessible distance, within a walking distance ranging from 3 to 25 minutes.

Endowment and Forest Resource Entitlement before 1990

In this section, we will try to see the rules created by the national policies on forests before the formation of Community Forest (before 1990) and its effects on the local level. We will also try to see who got access, control and benefit over the forest resource. In 1950, after the overthrow of the Rana regime (1846-1950), the new government nationalised all the forest resources under the Private Forest Nationalisation Act 1957. The responsibility for managing the forest was entrusted to the Forest Department, which had only five to six trained staff at that time (Gilmour and Fisher, 1991). The stated policies and aims of nationalising the country's forest resource were to release the land from the control of the few powerful birta[3] holders, especially the Ranas, and to manage the resource as the nation's wealth which could be beneficial to all citizens equitably (Regmi, 1978). But its impact at the local level was different. Local villagers felt the government had taken away their right of forest use,

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[2] For the study general survey of all the households and sample survey of 20% of the households were conducted during 2000. In the same period selective questionnaires for Forest Users Group was also conducted followed by PRA. The key informants' interview was also conducted to get historical and specific in-depth information. The data from the Base Line Survey conducted by Man-Tech Consult for USC Canada – Nepal Project during 1990 was used as secondary source for the specific data for comparison.

[3] Birta is a land granted by state to people.

based on customary rules and regulations such as Talukdari, Kipat, or Guthi[4] system under the control of Ranas, Talukdar and/or village elites. The villagers started to harvest as much forest resource as they could illegally from the forest. The Forest Department with almost no manpower could hardly do anything over such acts of the villagers (Bajracharya, 1982). This turned the forests into open access endowment with no control over its resource use. Much of the forest land was rapidly deforested due to lack of appropriate rules for entitlement.

Although the evolution of forest users group in Nepal is closely linked to the existence of indigenous forest management system and development of community forest work, the community forestry programme had officially started in 1978 as Panchayat Forest (PF) and Panchayat Protected Forest (PPF). The management rights of these PF and PPF were given to an elected body in the village known as Village Panchayat. Rules for accessing the forest resource were decided by the Village Panchayat, and local people could not directly get involved in forest management. Reforestation was the main activity and DFOs were hesitant to hand over the management of natural forest to the Village Panchayat. The government focused more on revenue generation from the forest by controlling it rather than encouraging direct community participation.

> The situation did not improve mainly due to the government's dual policy of revenue collection and community participation even after introduction of new amendment forest act on 1978 in which the government tried to introduce Panchayat and Panchayat Protected Forest as CBNRM where right to control and manage the forest resource were handed over to Panchayat Committee who also can decide rule for entitling the forest resource (Fisher, 1991).

Donors' policy at that time was also focused on technical aspects like nursery, tree improvement and plantation rather than putting emphasis on forest management with community participation.

In the study area, before the Nationalisation Act, most forests used to be under the control of Kipat, Saraswoti Guthi and Bista Talukdars, and entitlements were based upon the rules enforced by these systems. But after the nationalisation of the forest, there were no proper rules to control, look after and access the forest resources. The villagers, who had courage, influence over others and access to information, especially the village elites and previous Takuldars, illegally converted forestland near their field into cropland. As a result, they got more entitlement over forest resources, which, later on, were converted into agricultural land endowment. Most of these village elites and talukdars were Brahmins and Chhetris. They were followed by Magars and Tamangs, who either cut or burnt the forest and sold the fuel wood or charcoal in the nearby town. After clearing the forest, they occupied the land for farming after leaving the land fallow for some time. Some of them used to encroach on neighbouring villages. This trend continued until the early 1980s. The most disadvantaged people were the Occupational caste, Kami (blacksmith) who depended on forest charcoal

[4] Talukdari is the system of local governance where, Talukdars are local functionaries for state that exist until Rana Government period (1846-1950). Kipat is communal ownership system of certain area of land. Guthi is a group function for religious activities.

for their occupational work. According to local villagers, "the village elite (Brahmin/Chhetri) used them to deforest the forest making them cause by illegal forest fire". They burnt the forest and got charcoal, but the land cleared of the forest later became the endowment for the elite. The present land holding situation also proves this statement. During the survey it was found that the actual land owned by these village elites was more than the official record. It was also found that per capita land holding of the Occupational caste group was lower than that of the other groups.

The Forest Department appointed a forest ranger to guard the forest from illegal harvesting in and around that area during the early 1980s. He was stationed at Kot Danda in Nallu VDC. But a single ranger could not look after all the forests in the area. Although the converting of forestland into cropland endowment decreased, there was still illegal cutting and selling of forest for fuel wood. Magars followed by the Tamangs were the ones who engaged in these activities as they had no other alternatives for survival. The little agricultural land they owned was not sufficient for survival. During that period, neither the rules instituted by the local villagers nor the ones enforced by state government were successful in managing the forest.

After the concerns about natural resource degradation in the 1970s, the government, along with INGOs, emphasised conservation programmes through plantation projects in and around the study village, and the DFO nursery project and awareness programmes were launched in the area. During the project period, most of the tree saplings were distributed to the public, either at the village centre or to the students at school through the awareness programme. The nursery in the study village was inside ward No. 7, which is easy to access by foot from ward no. 6 and 9 where a large number of Bharmins and Magars live. They actively participated in this programme and got the most benefit by planting saplings on the land endowed to them. Schoolchildren participated mostly in groups during the tree plantation programme (confirmed by Gilmor and Fisher as true for the whole country). Since many children of Brahmin/Chhetri ethnic groups were enrolled in schools, they got the most access to free tree saplings. Occupation caste people usually living at the periphery of village could not become part of the project and did not benefit from it. The present endowment of private forest in the study area, with Bhramin/Chhetri holding more private forest land, followed by Magars and Tamangs and occupational caste group having almost none, could be understood as a consequence of this programme (Table 50.1).

Table 50.1: Average Private Forest Holding per HH in 2000

Caste/Ethnic Groups	Private Forest Holding (ha)
Brahmin	0.164
Magar	0.202
Tamang	0.188
Occupational Caste	0.055
Average in Village	0.160

Source: Field Survey 2000.

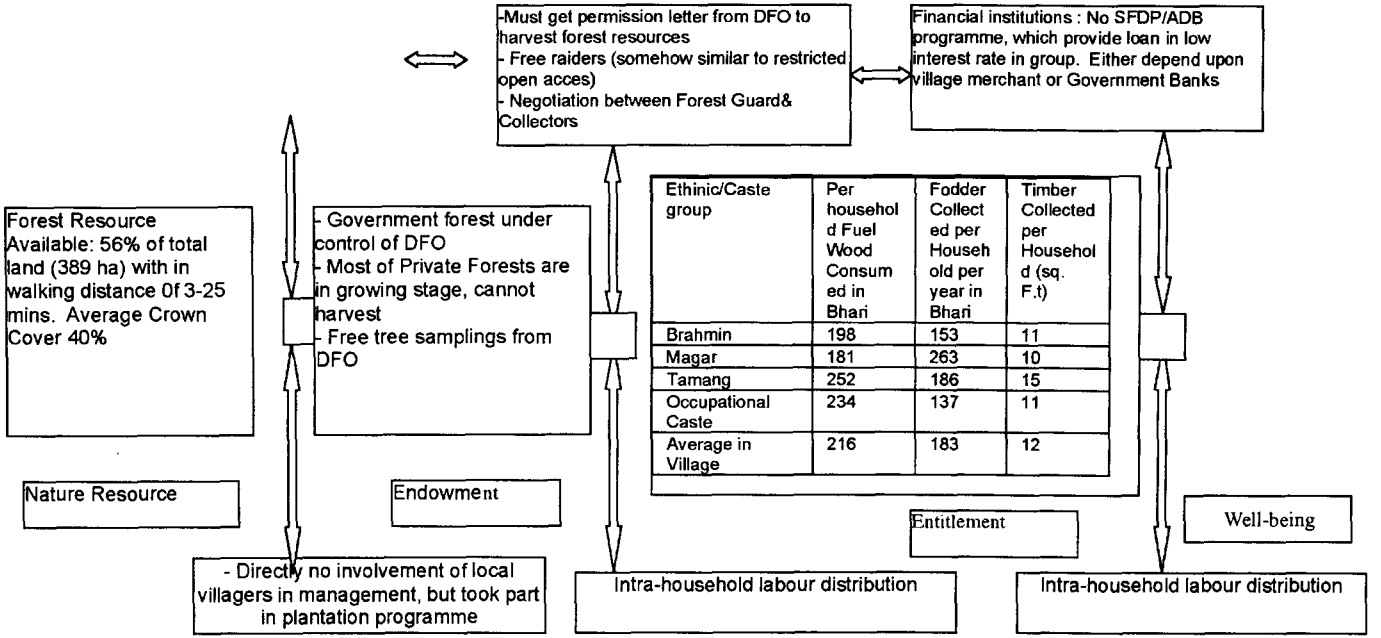

Figure 50.2: Forest Resource Entitlement Framework to Link Natural Resource and Well-being in study village before 1990 Endowment and Forest Resource Entitlement during the Late 1990s

On the basis of the above discussion, the Forest Resource Entitlement Framework before 1990 is given in Figure 50.2.

Endowment and Forest Resource Entitlement during the Late 1990s

After the formulation of the Forest Sector Master Plan 1988, and enforcement of the Forest Act 1993 and Forest Rules 1995, the rules and regulations of the forest sector have become more obvious. Those policies clearly divided the forest into private and state owned. Under state owned the forest is divided into community forest under the management of the local community, national forest directly under the management of the Department of Forest and Soil Conservation, national parks under the Department of National Park and Wildlife Conservation, and Guthi Forest under the management of Guthi Corporation. The local villagers started to participate in forest management more actively after the introduction of community forest. Here we will look in details at the policies and institutional set-up related to community forests.

According to the Forest Sector Master Plan 1988 for the country, the objectives of the forest management are, 1) to meet people's basic needs for fuel-wood, timber, fodder and other forest products on a sustainable basis, 2) to protect land against degradation by soil erosion, floods, landslides, desertification, and other effects of ecological disturbances, 3) to conserve the ecosystem and genetic resources, 4) to contribute to the growth of the local and the national economy by managing forest resources, and 5) to develop forest-based industry to create opportunities for income generation and employment. While the Plan covered all aspects of forestry, it strongly emphasised community forest and allocated 47 per cent of the total investment in the forest sector to community forest development programme. The Forest Act 1993 and Forest Rules 1995 endorsed the objectives set out in the Master Plan. The Act and Rules acknowledge the right of the forest users groups "to develop, conserve, use and manage forest and sell or distribute the forest products independently fixing the prices, as per approved Operational Plan." The forest area handed over to the forest users group is termed as Community Forest (CF) that should be decided in coordination with the DFO and local users by developing an operational plan. The users group is termed as Community Forest User Group (CFUG). In order to form the CFUG, the people living in the vicinity of the forest have to form a group and prepare a document containing rules and regulations for managing the forest and collecting resources, called Operational Plan, in consultation with the DFO. Generally, the group consists of seven to eleven members of a working committee and full members from the locality. The boundaries of the CF will also be clearly decided by the Operational Plan.

Initially, the main objective of the CF was to manage, conserve and utilise the forest resources according to the Operation Plan approved by the DFO. But Forest Rules 1995 allow the FUG to sell, produce and get economic benefits from the forest, which are collected in an FUG fund that can be used in forest and community development work. The latest amendment of forest laws in 1999 directed the allocation of at least 25 per cent of entitlement accrued from community forest for the development, management and protection of the forest, and the rest can be utilised in other community development. There are 9,874 CFUGs managing

0.748 million ha of forest. By this process, over one million people are directly involved in managing community forest. In the course of progress, the Federation of Community Forest Users was established in 1995 that has expanded its offices in over 60 districts. The Community Forest programme in Nepal is one of the most successful programmes.

However, communities are not homogeneous in Nepal. The interests of different caste/ethnic group of people vary. Regardless of the successes of CFUG mentioned above, conflicts and limitation are abundant. They are mostly related to 1) identification of users, 2) sharing of benefits, 3) participation, 4) leadership, 5) deciding the CF boundaries. These limitations are also observed in the study village. There are four CFUGs registered in the study village. But some Occupational Caste people and some people with particular political affiliation were neglected during the formation of the FUGs. Such neglect in the identification of users turned into serious conflict during the time of resource utilisation. Similarly, Kami, whose work needs, lots of fuel wood to make charcoal and people with big families, would want to collect more fuel wood for their work or for cooking. People with more cattle want to have more fodder to feed the animals. These differences in interests create conflict among the users concerning sharing benefits. All the members of users' group cannot actively participate throughout the year, or provide voluntary labour to look after the forest, due to their nature, physical condition or absence of head of household. These differences in participation also create conflict in the management of FUGs of the study village. Another conflicting issue is choosing the leadership of the FUG. Leadership in CFUG can elevate one's social standing in the village and act as a stepping-stone to local leadership. There is a conflict between such aspiring people and previous leaders in the study village. Deciding the boundaries of the CF between the CFUGs within the village and neighbouring VDCs is another conflicting issue in the study village. All these issues subtly affect the resource entitlement and consequently the well being of the villagers. But all these conflicts and limitations are settled by negotiation within the group and among the different groups. These negotiations play an important role in making the CFUG function well.

Resource Entitlements[5] and Well-being

The well being of the people depends upon the entitlement they get from forest resources. After the implementation of a new master plan, the rules to endow the forest resource in the study area are based on the membership in CFUG (organisational endowment) and private ownership (private endowment) of forest. The villagers are managing 247 ha of forestland as organisational endowment through four CFUGs benefiting 186 households and 150 ha as private endowment benefiting 189 households.

[5] In this study fuel wood, fodder and timber are taken. Because they are resources (commodity bundles) having utility function burning for cooking, feeding for cattle and building household materials, respectively and those are mainly collected goods from forest in the study area.

Table 50.2: Share of Entitlement from Community and Private Forests

Ethnicity	Private Forest (%)	Community Forest (%)	Others (%)
Brahmin/Chhetri	43	51	6
Magar	31	69	-
Tamang	30	63	7
Occupational Caste	9	87	4

Note: Entitlement consists of fuel wood, fodder and timber.
Source: Field survey 2000, Note: Others = bought and collected from farm land.

The average private forest per household is 0.169. The Bhramins, Magars and Tamang have higher private forest endowment, covering 0.164, 0.202 and 0.188 ha, respectively on average whereas the occupational caste group has on average lower private forest endowment, covering only 0.055 ha per household. So the dependency of the occupational caste group on Community Forest is higher than that of the other groups as shown in Table 50.2. The Occupational caste group depends on 87 per cent of total forest resource collected upon CF, whereas the Bhramins/Chhetri depend on only 51 per cent.

Looking at Table 50.3, we can see that the villagers of the study region got more fuel wood, fodder and timber than a decade ago. The main reason behind this ability to consume more forest resources as entitlement is the difference endowment before 1990 and during the late 1990s. That is to say, before 1990 they were not able to entitle the forest resource from their private land, which was at the growing stage, and it was illegal to harvest any product from government forest. Consumption of timber has increased more than that of fodder and fuel wood in ratio.

Table 50.3: Forest Resource Entitlement per Household during 1990 and 2000 for Different Ethnic Groups

Caste/Ethnic Group	In 1990			In 2000		
	Fuel Wood (Bhari)	Fodder (Bhari)	Timber (Sq. Ft.)	Fuel Wood (Bhari)	Fodder (Bhari)	Timber (Sq. Ft.)
Brahmin	198	153	11	276	209	49
Magar	181	263	10	249	291	30
Tamang	252	186	15	248	195	27
Occupational Caste	234	137	11	258	139	16
Average in Village	216	183	12	258	220	31

Note: One Bhari is 30 kg.
Source: Field Survey 2000 and USC-Canada Baseline Survey 1990.

In the case of timber before 1990, it was illegal to harvest it from government managed forest. Villagers had to go to the district forest office, generally far away from the village,

and had to wait for permission paper to harvest forest resources, even if they were to use the entitlement for strictly limited purpose. But after the formation of CFUG, the members can harvest timber, as decided by the FUG committee, by paying a nominal fee. Comparatively, the Occupational caste could not entitle more timber even after the formation of CFUG. The reason is they can entitle only 9 per cent of total forest resource collected from private forest. For the collection of fodder, members do not need to pay. The CFUG member can collect two Bhari (30 kg.) a day any time from the area decided by CFUG according to the Operational Plan. Cutting a tree for fuel wood is still illegal. They however, can collect dried trees' branches for fuel wood.

Table 50.4: Cattle Holding and Cash Income Per Household from Sales of Milk (in Current Price)

Ethnic/Caste Group	In 1990			During late 1990s		
	Cattle (No.)	Milk Sale (litre)	Cash Income (NRs.)	Cattle (No.)	Milk Sale (litre)	Cash Income (NRs.)
Bhramin/Chherti	2.09	783	16,370	2.75	1534	24,539
Magar	2.01	626	12,586	2.6	1405	22,480
Tamang	1.88	658	12,365	2.31	1250	19,993
Occupational Caste	1.15	750	8,630	3.14	1310	20,964
Average in Village	1.78	650	11,568	2.58	1359	21,743

Note: Cash income is in Nepali currency NRs. US$1 = NRs. 73; cattle includes cow, ox and buffalo.
Source: USC-Canada Base Line Survey 1990 and Field Survey 2000 •

However, Occupational caste followed by Tamang groups are still lacking behind in the collection of fodder even though they hold more cattle (3.14 cattle per household) than others (2.75 per household for Brahmin/Chherti). The labour availability (16-60 age group who are staying in the village) for different ethnic groups is not much different, just slightly more for Occupational caste group (3.2 person per HH) than Tamang (2.9 person per HH) and Brahmin/Chhetri (2.7 person per HH). Thus, this difference in fodder collection could be attributed to, firstly, the distance of the forest from the household area of the Kami, being translated into time required to access the forest, and secondly, Occupational caste people are still involved in their caste-related occupation as a side job, consequently decreasing their time to access the forest. The reason behind the Tamang not being able to entitle more fuel wood than before 1990 is that some of them were involved in harvesting the fuel wood beyond the then endowment for their survival. But their entitlements in 2000 are according to current endowment.

Similarly, if we look at the income from livestock and its holding per household in these two stages, we can find that animal holding has increased in all the ethnic groups, more so for Occupational caste due to financial support from financial institutions such as Small Farmer Development Project of Agricultural Development Bank, and the cash income has highly increased from selling the milk, whose production has also increased greatly in all

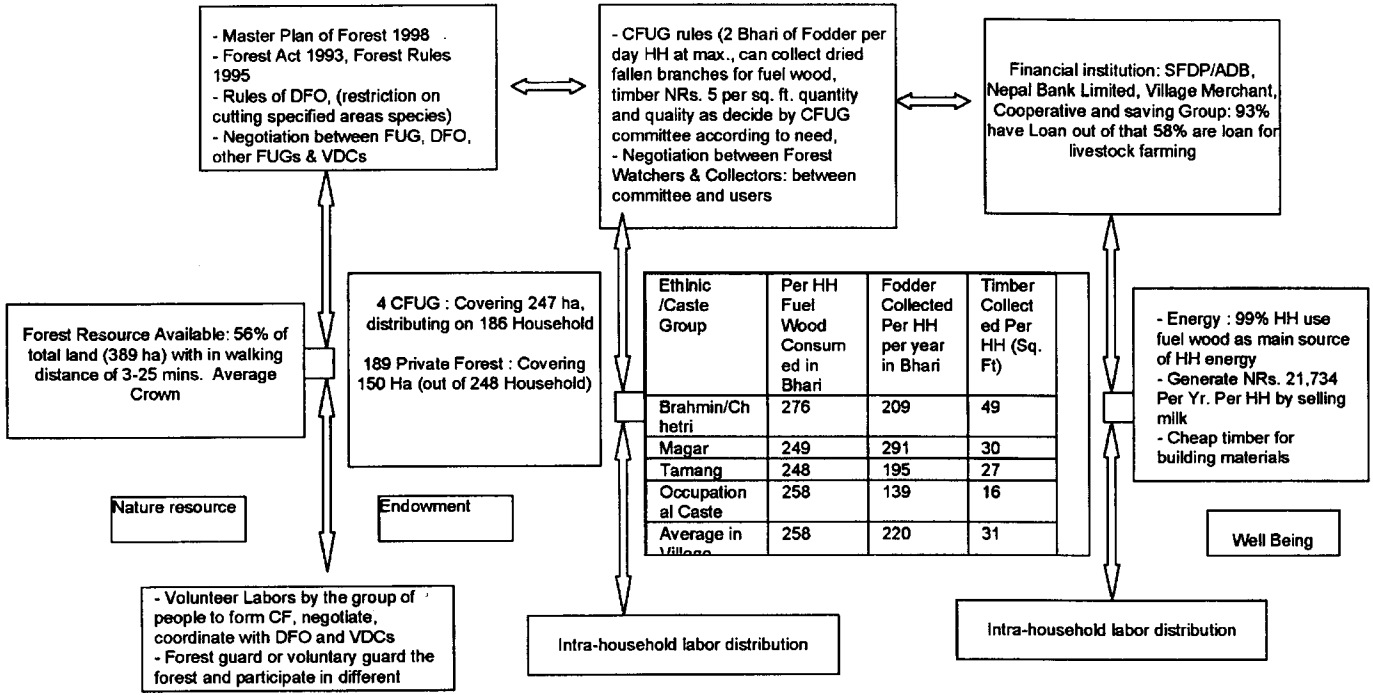

Figure 50.3: Forest Resource Entitlement Framework to link Natural Resource and Well Being in Study Village During Late 1990s.

the groups. But for Occupation caste, the milk production per cattle is not as high as in the other groups; thus the increase for cash income from milk sale is lower for them than for other groups, even though they hold more cattle. One of the reasons for such consequence could be related to their entitlement over the fodder, low per cattle, which could affect milk production. On the basis of all these discussions, the Forest Resource Entitlement Framework of the study village is given in Figure 50.3.

Conclusion

The Environmental Entitlement Framework was used to study the linkage between forest resource management and well being in Nepal, using a case study of a village in the hilly region. The entitlement on the forest resources has been influenced by the institutional set-up during two different stages, before 1990 and during the late 1990s. The institutional set-ups before 1990 have helped the Bhramin, Magar and Tamang ethnic groups to get access to the private forest endowment, which made it easy for them to get access to the forest resource mainly fuel wood, fodder and timber as entitlement in 1990 and to enhance their well being. But the socially backward Occupational caste group (kami) could not benefit from the institutions that existed during that time and thus, had less entitlement to enhance their well being. After the set-up of different endowments during the late 1990s, i.e. the hand-over of forest management to local CFUGs, the environment to entitle the forest resource, i.e., fuel wood, fodder and timber has improved for all the groups', along with the management of the forest. This enhanced the well being of all the caste/ethnic groups in the study village. However, the socially backward Occupational caste groups' ability to entitle the forest resource to enhance their well being was still lacking behind. The reason was partially due to the difference in endowments carried over from endowments before 1990, and partly because of their occupational work and the location of their household area.

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