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८.३.३ कृषि तथा वन विचको अन्तरसम्बन्ध वनावट : सामुदायिक वनले कसरि नेपालको खाद्य सुरक्षा तथा जीविकोपार्जनलाई समेट्न सक्छ ? (Reframing the farm –forest interface: How can community forestry better address food security and livelihoods in Nepal?)

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Abstract:

Despite three decades of Community Forestry (CF) development in Nepal, studies report that CF's actual contributions to livelihoods remain far less than the potential. Moreover, as Nepal is facing increasing food insecurity challenges, a question has emerged whether, how and to what extent CF can contribute to food security of the rural poor. Given the presence of over 18,000 community forest users groups (CFUGs) and over 1.4 million hectares of forest under CF across the country, its potential contribution to food security has become a national policy question. Yet little evidence and analysis exists. In this context, this paper defines and characterizes the dimensions of the forest-food conundrum, and explores potential directions of policy decisions for transforming forest-farm interface to enhance CF contribution to food security.

Drawing on the evidence from textual analysis of key policy documents complemented by seven CFUGs in Kavre and Lamjung districts, this paper evaluates how regulatory regime (defined as policy and legal frameworks including how they are implemented in practice) shape the link between CF management and food security in practice. The evidence demonstrates that current regulatory regime: a) has promoted a narrow view of forest conservation that often prohibits community groups to use forest land even for food crops that can be grown with minimal ecological disturbance; b) is less-responsive to local level practical innovations and the potential to recognize, upscale and promote those innovations widely; c) is profoundly contradictory between intention and practice on the question of linking markets to forest management. Clearly, the current regime requires fundamental revision to better align CF with food security. Several opportunities for change in the regulatory regime are identified: c) revisiting the market related regulations and enforcement mechanisms to create paid employment at the village level, a) promoting field experimentation and innovation in ecologically sustainable and food-maximising forest-agriculture production system, and b) instituting mechanisms to identify and respond issues and innovations in the changing contexts.

Keywords: Community forestry, food security, farm-forest interface, livelihoods, Nepal

1. Introduction

Nepal's Community Forestry (CF) programme is globally renowned as a successful community based natural resource management model. It has often been portrayed as the noble model to forest conservation, supporting local livelihoods and institutionalise grassroots democracy. However, with the fast changing rural landscapes in Nepal, the debate on the scope and prospects of CF has been intensified. The Forest Act 1993 recognised the community forest user group (CFUGs) as a self governing, independent, autonomous, perpetual and corporate institution, so that they could acquire, possess, transfer, or otherwise manage movable or immovable property (HMG/MoLJ 1993: Article 43). The groups are entitled to receive all the benefits from the management of the forest. According to the Act, the District Forest Officer (DFO) can handover the forests to identified user groups 'who are willing and capable of managing any part of national forests (HMG/MoLJ 1993). The Act was later operationalised by the Forest Regulations 1995, Operational Guidelines 1995 and Directives 1995. In addition, the frequently organized National CF Workshops (1987, 1993, 1998, 2004, 2008, 2014), the government's five-year development plans, and donor agency' strategies on the policies and practices have shaped CF policies in Nepal.

The CF programme has had positive impacts in various folds. Today, over 18,233 CFUGs covering about 35% of the total population has been managing almost 1.6 million hectares (ha) of forests across the country (DoF 2013). It has been claimed that the CF programme has turned the heavily denuded Nepalese hills into green and healthy forested areas; has increased the availability of daily forest product supply for rural inhabitants and supported in local revenue which is invested in developing community infrastructure and basic social services (MOFSC 2013). Apart from the biophysical and economic contribution, CF programme has had influence on local democracy and inclusive self-governance of the CFUGs in Nepal (Pokhrel et al. 2007; MoFSC 2013).

Parallel to the success of CF in Nepal, there has been a growing crisis of food scarcity and hunger. Almost half of the children under 5 years suffer from chronic under-nutrition and over half million children face acute malnutrition (NPC 2013:20). Almost 80% of the household income is spent in food items and yet, over 40% children under 5 years of age are stunted due to malnutrition (NPC 2013:2). Though the average energy intake has gradually increased during the period of 1995/6-2003/4- 2010/11, there is a significant population identified still as '*food poor*' (NPC 2013: 12). The hill districts in particular, are increasingly experiencing a poor food and nutritional status. Moreover, there have been several major incidents of famine, particularly in the western hill districts of Nepal. Over 33 districts out of 75 are marked as food insecure and most of them are in the mid and far western hills and mountains (MOAC and WFP 2011).

The successful CF programme on one hand and the increasing challenges of food scarcity on the other appears ironic given the predominance of integrated forest-livestock-crop production system especially in the Nepalese hills. So, what are the gaps in CF policy, regulatory and institutional framework that limit realisation of its full potential in meeting food security and livelihoods of local communities?; What is the current state of knowledge in explaining these

gaps?; Where are the avenues for transforming forest policy and institutions towards meeting food and other livelihoods needs of local communities?; This paper primarily explores answers to these questions and highlights the gap in knowledge, policy and everyday practice.

2. Method

Drawing on the evidence from seven CF groups in Kavre and Lamjung districts, this paper evaluates how regulatory regime (defined as policy and legal frameworks including how they are implemented in practice) shape the link between CF management and food security in practice. This study draws data using qualitative methods in the two districts. The study primarily adopted review of literature on CF and food security and other government policy documents. The field study involved methods such as focus group discussions, key informant interviews, transect walk and direct observations. Few cases were also drawn based on the discussion and observation in the two districts.

3. Pathways of linking CF with food security

In this paper we explore the potential pathways through which CF can contribute to food security of forest dependent local communities. There are three distinct pathways of linking forests with food security (see Figure 1). As shown in the figure, CF can contribute to: i) wild food: CF land can produce a range of fruits, vegetables, root crops, honey and many other food items that can be harvested and consumed; ii) farm forest interface: CF can support to livestock and crop production through fodder, grass, mulch, manure, watershed protection, soil conservation, and protection of biodiversity; iii) income and job: CF can generate income and employment from forest based activities mainly timber, Non Timber Forest Products (NTFPs), ecotourism and Payment for Ecosystem Services like Reducing Emission from Deforestation and Forest Degradation (REDD+).

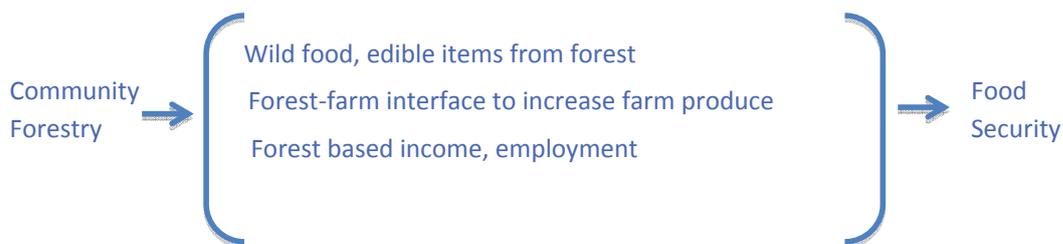


Figure 14: Pathways of CF contribution to food security in Nepal

Notwithstanding these historical intricate forest-farm-people relation in Nepal and the increasing role of forest land in addressing food scarcity, our forest policy and practice has not been supportive to this traditional farming system. The notion of 'forest' as was developed in Western Europe represented a special category of land that was largely managed for power, pleasure and rentals by the kings and nobilities, often excluding the common people (Fay and Michon 2005). It had little to do with nature or ecology and was used mainly to represent the

symbolic relations of power where some enjoyed privilege and others were excluded (Fay and Michon 2005). This narrow notion of forest was applied to large landscapes bringing them into legal category of forest that suited the dominant political and economic interests of the state and ruling elite. Forest as a legal category then helped states to shape particular social relation to natural resources and people dependent on it. It narrowly valued tree, above ground vegetation and biomass which gradually became an ideology that could neither respect the ecosystem integrity nor the socio-economic and cultural values of any society (Michonet *al.* 2007). The dominant definition of forest often considers agriculture and its associated activities and actors such as peasants and local communities as enemy (Westoby 1979).

Following this international tradition, Nepal's forest sector also appears to have conceptualized forest narrowly limiting itself to forest stock, crown cover, biomass or biodiversity in widest sense. Forest authorities generally appear less concerned with the wider economic and social dynamics and usually do not assume the responsibility of addressing poverty or supporting local and national economies (Kennedy *et al.* 2001). Consequently, forests are not fully open and supportive to agricultural activities. Below we examine the forest-livestock -farm relation in Nepal based on data collected from seven sites of Kavre and Lamjung.

3.1 Wild food and edible items from CF

Given the rich ecological and biological diversity in Nepal, the forests provide a wide range of wild fruits, vegetables, mushroom, honey, fishes, insects, animal products and root crops particularly the *Dioscoreasps* (Tarul, Githa, Vyakur). In some CFUGs in the study sites, there is practice of managing, harvesting, consuming and even selling these products often in the local market. Wild foods are tasty, nutritious, valuable during difficult times, and particularly help meet the food and nutritional needs of the forest dependent poor. Dozens of such food items are harvested and utilized especially by the poor.

In case the users' group, desires to plant any cash crops which yields products for a long time *other than food crops* in the CF without adversely affecting growing stocks and production of the main forest product, it shall be mentioned the details thereof in the operational plan (OP) (GON 1995: Article 28). Similarly, the regulatory provisions prohibit any clearance of forest areas for *agricultural purposes*, building any huts and houses and take any action which may cause soil erosion (GON 1995: article 31/1). The CF Guidelines clearly mentions that *no agricultural crop* can be grown in the CF land. However, cash crops such as fodder, grass, cardamom, broomgrass, medicinal plants and fruit trees can be grown in land allocated to the identified poor households (MOFSC 2009: 45). In addition, perennial plants *other than food crops*, such as bamboo, fruits, NTFPs can be grown in CF in condition that it would not affect the density and production of main forest products. (MOFSC 2009: 48). The Guideline emphasizes that neither the *cereal crop* like rice and maize, nor *those crops which require tilling of land* such as ginger and turmeric can be grown in CF land (MOFSC 2009: 55).

Forest policies do not explicitly speak on the provisions of wild food within the CF. Forest Act, Regulations and CF guidelines though speak little about wild foods, nevertheless, management of

wild food in CF is not provisioned. Therefore, CF facilitators and support organizations including the district forest offices have no skill or orientation to discuss the management of wild food in *Tole* meetings, general assembly or in Executive Committee (EC) meetings. Consequently, provisions related to wild food management are not adequately or clearly included in CFOPs. For example, Phagarkhola CFUG sells Lapsi (*Chorespondeasaxilaris*), at about Nepalese Rupees (NRs) 2500 in average, each year. However, their OP does not have any provisions related to Lapsi management.

3.2 Forest-farm interface to increase farm produce

Table 1 below shows different provisions mentioned in the OPs of the six CFUGs in Lamjung and Kavre district. Where few aspects seem to be supportive to promote livestock, other provisions simply discourage it. For instance, management of grass is carried out in almost all six CFUGs, either by planting improved species or dividing the forest into blocks. While in some cases, improved varieties of grasses are also promoted. However, grazing is banned in all six CFUGs, which is mainly cited to the rationale that it would damage the saplings and soil quality in the forest. Though fodder management is prioritized in some CFUGs, that element is not explicit, and is missing in others. Likewise, livestock development is perceived as a way of supporting the poor and marginalized groups in some CFUGs, however other factors, for instance, ban on grazing in the forest, do not really encourage user groups to rear livestock. Details on the provisions for six CFUGs are given in table 1 below.

Table 1: Provisions on grass and livestock management in OP in six CFUGs

Description	Kalapani, Dhunkhar-ka, Kavre	Phagarkhola, Chau-bas, Kavre	SAPARUPA, Methinkot, Kavre	Langdi Hari-yali, Nalma, Lamjung	Aapchaur, Dhamilikuwa, Lamjung	Lampata, Jita, Lamjung
Grass	Grass is provided free of cost within the user group (4 months a year) Blocks divided for grass management	Grass management carried out to meet the annual demand of 25200 bhari	Grass plantation in blocks for income generation Collection of grass not allowed beyond stipulated months	Plantation of improved grass species like Stylo, Molasis, Napier etc both in CF and private land	Plantation of improved varieties of grass	Plantation of improved varieties of grass
Grazing	Grazing is banned in the CF	Grazing is banned in the CF	Grazing is banned in the CF	Grazing is banned in the CF	Grazing is banned in the CF	Grazing is banned in the CF

Fodder	-	-	Forest for availability of fodder species	Emphasis on the plantation of fodder species like Dudhilo (<i>Ficus-nimarolis</i>), Lakuri, Lapsi (<i>Choerospondiasaxillaris</i>), in CF and private land	Emphasis on grass production through the plantation of fodder species	Emphasis on grass production through the plantation of fodder species
Livestock development	Have established a group (Chana group) for selling milk and milk products (khuwa)	-	-	Provision to provide interest free loan for poor and marginalized households for 2 years for generating income through livestock	-	Provide support for the poor and marginalized households for livestock related activities

One of the important ways of linking forest farm is through livestock. It was observed that the poor group also have lower numbers of households with livestock (84%) than better off groups (95%). There is a predominance of stall-feeding (about 57%) with about 27% of the households using both grazing and stall-feeding (MOFSC 2013: 115). One of the important forest inputs to farming is leaf litter -vital to maintain soil fertility and texture. Although many people, particularly in accessible areas, are increasingly using imported chemical fertilizers, many cannot afford it due to rising price. In fact, most people use a mix of organic and chemical fertilizers. An analysis shows that *Dalits* and *Janajatis* tend to rely more on farm yard manure (MOFSC 2013: 158).

Analysis of few CFUG's rules on grazing and fodder management revealed a very low appreciation of the intricate forest-farm relation within the CF management (Khatri et al. 2014). According to Khatri et al. (2014), grazing is prohibited in almost all CFUGs with provision of fines in case of violations. Some CFUGs have made provisions of rotational grazing in specified forest area. Consequently, promotion of CF institutions in the hills of Nepal has contributed to decreased number of livestock (Thoms 2008; Dkahalet al. 2011). Moreover, in places where grazing was practiced before, it has currently been banned (see case of Lampata CF in box 1).

Besides, there are little or no programmes for enriching forests with grass or fodder trees. Within the plantation programmes, only forest trees are encouraged. Consequently, the large tracts of forestland have provided too little support to livestock management compared to its potential to do so. Several scholars in the 1980s and 1990s focused on forest-farm linkages (Bajracharya 1983; Mahat 1987; Metz 1987; Karki 1992; Fox 1993). The communities used multiple products and services of the common property to complement private resources and sustain livelihoods (Dhakal et al. 2011; Holbey 1996). However, since the 1990s, the intricate relation between forest and farm was not adequately appreciated (Dhakal 2013). The Master Plan for Forestry Sector encouraged “reducing and controlling livestock numbers” of mountain farmers (MPFS 1988: 148), even though livestock farming was the engine of mountain economy (Dhakal 2013).

Box 1: Grazing in Lampata CFUG

Lampata CFUG leaders launched a Sisso plantation project with NRs 65, 000 in 1998, to discourage grazing. An area called Laichedanda with 6.5 ha area, was used for grazing by 12 households of neighboring residents. They used to graze cattle and goats, which apart from generating income, provided direct contribution to farming through manure and draft power. As the plantation was imposed without local participation, it almost failed. This policy imposition of CFUG indicates a typical CF response against grazing. Had there been fodder tree plantation, the fodder demand of the locals would have been addressed while conserving the land at the same time. *Source: Focus Group Discussion in Laichedanda (Lampata CF)*

3.3 Forest based income and employment

Forest based income and employment generation is another important approach to enhance food security of the forest dependent people who are involved in managing CFs. Increased income supports the households in terms of food security and thus has been brought to this analysis. While there are multiple streams of benefits from CF, timber is believed to be the most significant source of income. There exists a strong correlation between poverty and food insecurity. For example, 25% of households in the lowest expenditure quintile have poor food consumption compared to only 1% in the wealthiest group (NPC 2013:51). While 86% among the poor take very high staple food, only 10% from wealthier group have such poor diet (NPC 2013:52). If relative share of spending on food item is an indicator of poverty, the spending on food has increased in both urban (10 to 16%) and rural groups (50 to 56%) (NPC 2013). This implies that increasing income and addressing poverty would directly contribute to food security.

Studies have revealed that Nepal's CF has huge potentiality in terms of generating income, employment and government revenue through the management of timber (Banjade 2012; Pokhrel 2010; Banjade et al. 2011). For example, an analysis of the annual income of 15 CFUGs in Nawalparasi district in the year 2010 showed that about 90% of their income came from timber sale alone (Banjade 2012). Another study in Tanahu district also shows timber as the most significant product of CF (Pokhrel 2010). A nationwide study of timber potentiality (Paudel et al. 2013), revealed that total annual allowable harvest (AAH) of Nepal's CF is

about 11 million cft. If all of the AAH is harvested and sold at the current market rate, it can contribute NRs 27 billion revenue to CFUGs and the government. In addition to this, harvesting and sale of timber can generate about 21,000 jobs annually (Paudel et al. 2013). In fact, historically, timber has remained an important source of government revenue throughout. Analysis of government's forest sector revenue for the last 15 years shows that above 80% of the revenue to both government and CFUGs comes from the sale/distribution of timber (Banjade 2012). In some cases, it goes much higher than this. For example, the share of wood products remained over 90% of the total forestry sector revenue in the year 2008/09.

We analyse below the gaps between the potential and actual income from timber management in six sites based on the AAH and actual harvest.

Table 2: Annual Allowable Harvest (AAH) and actual harvest of timber

SN	CFUG Name	AAC (cft)	Allowable Harvest in 5 years (cumulative)	Timber sold outside CF in last 5 years	Harvestable amount (in bhari)
1	Aapchaur, Lamjung	4378.04	21890.2	1381	3883
2	Lampata, Lamjung	2637	2500	550	2504
3	Langdihariyali, Lamjung	3847.43	19237.15	2335	3317
4	Phagarkhola, Kavre	588	2940	-	6600
5	Saparupa, Kavre	1750	8750	500	3000
6	Kalopani, Kavre	9281	46405	-	8565

Case 1: Aapchaur CF- sale of dead Sissoo timber

Aapchaur CFUG in Lamjung has a plantation forest of Sissoo in its southern plain area. The forest was getting mature for harvest. More importantly, most of the Sissoo trees were dying out due to particular disease, and therefore was losing market value due to deteriorating timber quality. Citing the urgency, the CFUG leaders took the initiative to harvest these trees.

The leaders made several visits to nearby Ilaka and district forest office, to acquire the harvesting permit. During these visits, they had to go through long and exhaustive processes which at times were frustrating. One of the major challenging issues was that the OP did not have the provision of harvesting the Sissoo trees. After a series of visits and meetings, the Assistant Forest Officer (AFO), carried out the measurement of the trees, and calculated the total volume of harvestable timber. During this process, they also included few green trees, as it would not be in the interest of the contractor to buy only dead trees, as it will have low quality. The AFO then prepared required documents and recommended for the permit to the DFO. However, the DFO gave permit for only 34 dead trees. The CF leaders returned home. Then they felled those 34 in addition five green trees. The felling of green trees was done in the interest of the contractor. They then collected the harvested timber in a depot. Later, the officials demanded details of identification of those pieces. This required the identification of

the log piece and the tree it was harvested from. But they did not have such clear identification. Also when the deposited pile was measured, it was found to be more (9268cft) than original estimate (196cft). Due to this, the process got stuck for over 2 months.

However, amidst the continued tension and external facilitation, the case was resolved through a long and constant engagement. As both the CFUG leaders and forest officials were jointly involved in the whole process and were therefore equally responsible for any human and technical errors, the DFO took this case sympathetically. When the pile was measured again, the difference was less. All the paper work was redone. Finally, the timber auction was carried out and the CFUG was able to sell it. This case demonstrates how exhaustive and risky the timber harvesting and sale process is, in the CF. The chairperson of Aapchaur CFUG opines that, they went through a very difficult, and sometimes frustrating, process to produce all the documents and get support from the DFO staff. Another leader of the CFUG said, he would hardly embark any process of harvesting and sale of timber in the future. Rather he would stand away from the CF management process.

Case 2: Rachma CFUG- fixing the timber price

In the year 2009/2010, Rachma CFUG, Kavre (through general assembly) decided to harvest timber in the forest. It was plantation pine forest and the trees were mature for harvesting. Moreover, the calculated amount is within the AAC limit. The CFUG leaders prepared required documents and went to apply to the DFO for harvest and sale permit. Tulsi Man Tamang, secretary of CFUG, said 'taking permit from the DF Office for timber harvest, transport and sale is not only an exhaustive administrative process but at times a frustrating and irritating job. No matter you win or lose, you incur costs in terms of time and money. Getting permits successfully is something like you win the war.' Finally, they got the permits to sell the timber. By then, about half of timber was already sold. Suddenly, DFO Kavre received a circular from the Dept of Forest which instructed that the CFUGs must have a Permanent Account Number (PAN) before they sell timber. Logs were piled in the forests, and therefore, they had no options but to get PAN otherwise they would not be able to sell the timber. They decided to take PAN and proceed to sell the remaining timber.

However, after few weeks, DFO informed them that the DoF had instructed them (DFOs) to permit CFUGs to sale timber only after the district board (which comprises different government agencies) set the price of the timber. Accordingly, another administrative requirement added. For this, officials of district forest office, district development committee, district administration office should sit together to fix the price (minimum) of timber in the district. DFO officials informed the CFUG leaders were told that the price-setting board did not have budget to organize its meeting. The CFUG was implicitly requested to meet the cost of the meeting, including the per diem for the board members. The CFUG leaders were in trouble. If they were to pay the cost, their timber sale would be a loss trade. If not the timber would just get rot on the ground. They decide to afford the meeting costs and ask for receipts of the costs. Unfortunately, the officials denied providing any receipt. Despite all these odds, the CFUG paid the all the Board Meeting related cost and finally received permit.

The above two cases exhibit the nature of the level of difficulty the CFUGs face in terms of the need to follow lengthy process to get the timber. Moreover, the ill intentions of forest officials have added an extra burden to the CFUGs, which is simply discouraging for the latter. Apart from discouragement that the CFUGs face, time and often, lengthy processes for acquiring permits and the unintended formalities has quite often resulted in waste of resources.

As per the Forest Regulation 1995 (Rule 32), the CFUG can harvest timber on the basis of approved OP. However, in practice as shown in the above two cases (Rachmaand Aapchaur), forest technicians suggest CFUGs to follow steps prescribed by the “Forest Product (timber/fuelwood) Collection and Sale/Distribution Guideline – 2002” (here after ‘Guidelines 2002’). There are similar regulatory constraints even after harvesting is complete. As per the forest law (Rule 32), though CFUGs are allowed to sell timber outside the group, it involves additional administrative process.

The general practice of timber harvesting and sale described above shows that the regulatory and institutional framework is designed to regulate timber trade through multiple administrative layers. Every minute steps for timber harvesting and trade must go through three levels- Range Post to Illaka Forest Office and finally to the DFO for approval. This multi-layered administrative process often results in delayed processing of documents and therefore substantially increases the transaction costs. The authorities often demand exhaustive paper work with full technical specifications from the CFUGs most of which are beyond the capacity of the latter.

Based on the above analysis, limited CF contribution to income, employment and thereby to food security can be partly attributed to regulatory and institutional barriers for realising the market opportunities for timber products. Despite the clear transfer of rights by the Forest Act 1993, the subsequent regulatory framework and institutional practice take a more cautionary approach in timber management. For example, while the Act is open to handover of CF to any area, it is constrained by the provisions of Initial Environmental Evaluation (IEE) and Environmental Impact Assessment (EIA), Churia Development Programme, block forest management in Terai among others. Similarly, CFUGs' autonomy in determining timber price is constrained by financial regulations and forest product sale guidelines, and occasional circulars.

3.4 Energy

Energy is an important element to support food security. It is directly linked with the production and preparation of food, a way in which people secure their food security. Though there are various aspects of energy systems that links to food security of people for example technology, this paper deals with the rural energy technology, particularly fuelwood and alternatives like biogas and improved cooking stoves among others.

Fuelwood has had a significant contribution to rural energy systems, where most of the heating and cooking is carried out. Though providing fuelwood to the user groups is provisioned in the OPs, the demand has quite often exceeded the supply, and thus resulting in its scarcity. The

review of the OPs of six CFUGs shows the fact that the demand has surpassed the supply of fuelwood within the user groups (see table 3 below).

Table 3: Demand and supply of fuelwood in six sites in Kavre and Lamjung

Site/CFUG	Demand (in bhari ³)	Supply (in bhari)
Aapchaur, Lamjung	9760	8784
Lampata, Lamjung	7500	1200
Langdihariyali, Lamjung	5120	3317.2
Fagarkhola, Kavre	11000	8030
Saparupa, Kavre	23716	8969
Kalopani, Kavre	50050	50040

The review of the OPs of the study sites revealed that there is no explicit provision on promotion of alternative energy in the CFs. Though fuelwood, its total demand and supply and ways of meeting the demand is mentioned, alternative energy component is missing in those documents. However, in practice, there are few cases where biogas is promoted for example in case of Lampata CFUG, around 2000 biogas plants is installed. Likewise, installation of improve cooking stoves exists in few other CFUGs.

Decreasing size of the farmland and declining productivity are the two key challenges for feeding people from farm. First, due to the high rate of population growth, access to land resources has decreased. The holding sizes are getting smaller primarily due to division of parental land (and property) among offspring. It is complemented by loss of farmland due to erosion, landslide, urbanisation, and conversion to non-farm purpose. For example, while the number of households with landholding <0.1ha, <0.5ha and <1ha are increasing since 1996 to 2011, the number of farmers with higher than 1ha is decreasing during the same time period (CBS 1996, 2004, 2012). Second, farm productivity of all key products is quite low and is declining. For example, the average productivity of agriculture, fishery or forest related activities in Nepal are quite low compared to its close neighbours (ADB 2011).

4. Discussion

Despite the fact that CF is a potential source of edible wild food, current forest policy and regulatory provisions, institutional orientation and changing value of society among others appear to have discouraged conservation, management and cultivation of wild food in CF. First, there is a limited awareness among the people that forest is a potential source of wild food. Because of this, there is less enthusiasm among the people to cultivate and utilize it. This is compounded by the fact that there is no orientation both among the user groups as well as in the OPs in terms of encouraging cultivation of wild food species in the CF. The CF policy is either silent or rejects the idea on promoting wild food items within the forest. Not only has this barred the idea of cultivating wild foods, it has also discouraged the outscaling of the practices

to other CFs and beyond. Some of the existing practices such as in Phagarkhol have not been adequately coded in operational plan or there is no implementation of such provisions.

While the national forest policy discourses emphasise on linking forest with farm, the existing regulatory and institutional framework do not adequately encourage and support diverse pathways of linking CF with food security. For instance, the provisions on promoting plantation of improved varieties of grass in the CF seem to be encouraging the user groups in livestock promotion. At the same time, providing soft loans to the user groups for livestock rearing too are positive indications. However, too much emphasis on protecting forest ecosystem has simply undermined the potentials of grass and fodder management that could strengthen the forest-livestock-farm linkage. The case of Laiche dada simply indicates that CF management is forest tree centred, overlooking the wider forest-farm relations. Ban on grazing in the CF seriously undermines livestock raising and its role in enhancing food security. The analysis of OP of the all sites clearly exhibits the fact that grazing in the CF is seen as against the standard CF management. Though stall-feeding is generally promoted in the CFs, limited supply of grass and fodder restrains the farmers from having more number of livestock. This ultimately has implications to the food security.

Similarly, the high potential of timber management in CF has not been fully materialised for various reasons. Firstly, policy and regulatory provisions for timber harvesting and sale are complex and tedious requiring frequent visits to district forest offices and production exhaustive documents for permissions (Neupane 2000; Mahapatra 2001; Nagendra 2002). Secondly, the process of determining annual increment and annual allowable cut (AAC) of timber in CF is often conservative. Inventory guideline has provided guidance to determine the increment of each timber species assuming that all the trees are growing. This assumption does not actually apply equally to immature as well as over mature forests. Forest technicians (who are usually also the forest officials) tend to go for the minimum increment percentage for each timber species and prescribe small proportion of annual increment as AAC. Thirdly, Government's ad hoc policy decisions (e.g. blanket ban on timber harvest) are issued at random, unpredictable and often restrictive manner. Such restrictions prohibit CFUGs to take out timber that are allowed in their OPs to harvest. Finally, forest technicians, CFUGs and general public have protection orientation and prefer sub-normal timber harvest- partly to be in safe limit (by prescribing/cutting less timber) and mostly guided by protection mind set. The two cases, one from Lampata and another from Rachma CF show how existing provisions and practices increase transaction costs and discourage timber management.

Despite the fact that fuelwood is the major energy source in rural areas, particularly those depending on forests, the supply has rather been limited to what is available. In other words, whatever is available, though not adequate, is the limit of supply in CFs. While CFs have distributed the available fuelwood, there is little consideration and responses to CFUG members' household need of fuelwood. Moreover, the OPs have not adequately provisioned the promotion of alternative energy.

Some of the above practice that do not adequately consider and respond the food security needs can be explained by existing elite capture in CF. Domination of selective sections of

the CFUGs, has often undermined the legitimate rights of managing and benefiting from forest management. The case of Laiche dada, Kalopani grazing and others exhibits the extent of elite capture, where interests of certain groups dominate the actual needs of the CFUGs. Likewise, there is a disparity in the decisions made within the CFUGs. The real beneficiaries of the forest resources do not have access to the decision making while those who make the decisions do not need to rely on those resources. So, the decisions made are most often not in the favour of the needy groups, thus tend to impose more conservationists agenda hindering the food security among the poor and marginalised ones.

Another important issue is with the influence that the forest officials have in provisioning forest management practices. In most of the cases, preparation of OPs and constitution is technically supported by the forest officials often using their dual authority: technical and administrative. consequently, forest management activities such as plantation of forest trees, ban on grazing, low harvesting of timber and other forest products are prioritized while provisions on promoting forest-farm interface is often missed. Even within the forest management, nursery plantation, primarily timber species gains priority while fodder trees are overlooked.

5. Conclusion and recommendation

Despite various potentialities of CFs in enhancing the livelihood and food security of the resource dependent poor, it has not been achieved. Most of the related policy, regulatory provisions and institutional practice at different levels of forest governance are not adequately sensitive to address the problem of poverty and food scarcity. The existing regulatory provisions narrowly aim at enhancing forest stock and biodiversity. The regulatory provisions appear restrictive even on the management of timber. Moreover, promotion of wild food does not seem to be in the priority. Similarly, livestock, which is an important element of agricultural promotion, is often seen as an enemy of forest management. Current CF management largely discourages the promotion and management of pasture, grass or fodder.

Conventional principles on forest management do not adequately appreciate the productive and sustainable relation in the forest-farm system. At the discursive level, there is a need for reorientation on the conceptualisation of forests and forestlands, and greater policy sensitivity towards poverty, hunger and destitution among the citizen. At the practical level, there is a need for proven resource management models and institutional arrangements that visibly increase the productivity of CF land without compromising long term overall sustainability of the landscape.

Where most of the interventions are centred on tree management, the focus should be laid on the pathways of linking CF with food security. Promotion of wild food in the CF, optimum harvesting of timber, better linkage of forest-farm activities and enhancing the sustainable, renewable and accessible energy in the communities will contribute to food security. Therefore a more people centric approach rather than forest-ecosystem based management practices should be introduced. The guiding local level policies like the OPs and CF constitution should be framed in such a way that would address these four elements. A long term, participatory action research that explores such production process, institutional mechanism and market

arrangements demonstrating action verified lessons may help increase CF relevance for poor rural people in Nepal.

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