

Livelihoods Strategies among Users in Community Forests, A Study from Dang District Nepal

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Abstract: *The paper intends to capture the livelihoods strategies adapted in the community forestry. Specifically, paper explores how the livelihoods strategy differs at the household level and user group level. The study was conducted in seven community forests of Dang district, Nepal. The household (HH) level survey was conducted among 570 households to explore livelihood strategies at HH and user level. Similarly, the focus group discussion and key informant interview was conducted among users and stakeholders to get insights. At the household level, fourteen different livelihoods strategies were found practised. Among them, some of the strategies are innovative in the local context. Similarly, five livelihoods' strategies were observed in Community Forest User Groups (CFUGs) level. The community livelihoods strategy is focused in conservation and income with long term benefit. The household strategy is focused on immediate benefit and categorically fourteen different livelihood strategies have been found adopted. At the household level, subsistence agriculture is still dominant. The introduction of apiculture, vegetable tunnel, and practice of integrated farming with diverse category is relatively a recent concept among users. This is getting momentum for its immediate benefits to the HHs. Similarly, the Eta correlation measured the relation among the adapted strategies and income of households. The Eta correlation of household income and HH livelihood strategies indicates the association is very weak (0.19) and ethnicity has very high level of association with income (0.740). The CFUGs have institutional policy of livelihoods intervention to address conservation agenda. The major focus of the livelihoods strategies of Community Forest is to support poorest of the users. It was explored that the livelihood options provided are not yet adequate.*

Keywords: Livelihoods Strategies, Community Forest, Users

1. Introduction

Addressing livelihoods of the poor is one of the key objectives of community-based forest resource management in Nepal (Ghimire and Lamichhane 2020, Kimengsi and Bhusal 2022). Forestry sector contributes livelihoods of rural poor through its income as safety net globally (Gilmour et. al, 2004; Kellert et. al, 2000; Murer and Piccoli, 2022; Rayamajhi et al.2012). The contribution of forestry sector in rural livelihoods of Nepal has been observed significant (Adhikari et. al, 2015; Bista et al., 2022; Springate - Baginski, 2003). Community Forestry is claimed by many as one of the most successful programmes in Nepal in generating community development, social capital and competence (Chhetri et al.2023; Chhetri, 2006; Gilmour and Fisher, 1991; Pandit and Thapa, 2004; Pokharel, 2001). It has become effective in addressing livelihood of the community and conservation issues together and received attention as a successful forest resource management model both nationally and internationally (Agrawal and Ostrom 2001; Chakraborty, 2001; KC et al., 2023; Pokharel, 2001).

A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base (Chambers and Conway, 1992; Kranz, 2001). The livelihood is also perceived as capabilities, assets (stores, resources, claims and access) and activities required for a means of living (Chambers and Conway, 1992; Knutsson, 2006). A livelihood is sustainable when it guarantees next generation;

and which contributes net benefits to other livelihoods at the local and global levels both in the short and long run. Community Forests (CFs) has been incorporating livelihoods as an inseparable aspect of its delivery. The multidimensional concept such as livelihoods constitutes different capitals including natural, economic, human, social among others (Scoones, 1998; Singh and Hiremath 2010). More than 19000 CFs of Nepal are providing opportunities for rural people in its management, income generation and livelihoods opportunities through community driven Community Forest User Group leadership (Ojha and Hall, 2023; Smith et al., 2023; Dev et al., 2003).

The livelihoods model gives an understanding of household's livelihood process and allows to explore consequences of specific changes including changes brought about through external intervention intended to improve people's lives (Dev et. al, 2003). The integration of livelihood improvement activities and resilience makes community more resilient manifesting Livelihoods Capital Investment in terms of income, food security and livelihood safety net widening. The DfID Sustainable Livelihoods Framework comprises five capitals Human Capital, Natural Capital, Financial Capital, Social Capital, and Physical capital (Solesbury, 2003). Livelihoods are comprised of tangible and intangible assets on which people can draw and ability to use such assets is mediated by a matrix of institutions, regulations and cultural norms (Chambers and Conway, 1992; Toner and Franks, 2006). A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and

assets both now and in the future, while not undermining the natural resource base (Chambers and Conway, 1992).

Towards theory

According to Chambers and Conway (1992), a livelihood comprises people, their capabilities and their means of living including food, income and assets. It further elaborates that a livelihoods is socially sustainable which can cope with and recover from the stress and shocks, and provide for future generations. The concept of livelihoods has been used in

different settings and themes (Keskinen et al.2010, Sterling et al.2022, Sterling et al.2020, Toner and Franks 2006, Chambers and Conway 1992). The multidimensional concept such as livelihoods constitutes different capitals including natural, economic, human, social among others (Scoones, 1998, Singh and Hiremath 2010, Rayamajhi et al.2012).

Conceptual Framework of Study

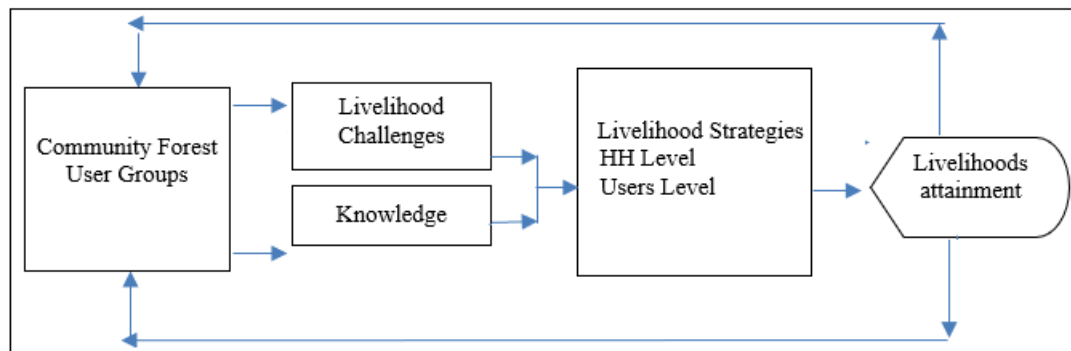


Figure 1: Conceptual Framework for study

The proposed model identifies that users adapt livelihood strategies based on the livelihood challenges they face and knowledge to address this situation. In this situation, engaging diverse stakeholders has been the primary focus of this livelihood intervention in the CF and this aspect has been widely covered by this framework.

2. Methodology

2.1 Study area

The study was conducted in seven community forests of Dang district of Nepal. The name, households, and area of Community Forests (CFs) are Pandaweshwor CF (850 HH, 792 Ha); Khadgadevi CF (450 HH, 600 Ha), Kartikerani CF (352 HH, 104.6 Ha), Jharana CF (215 HH, 74.5 Ha), Bhulke CF (119 HH, 230 Ha), Kalika CF (111 HH, 149.2 Ha), Gadibara CF (735 HH, 322 Ha) respectively. All of the CFs were found to be similar in character on many respects. Informal discussion was also carried out to get more information, insights and triangulation of result. Pandaweshwor and Khadgadevi CFs are from Chure region of the district where as all other CFs were from Mahabharat region. The southern region of the district is known as Chure region and northern part as Mahabharat region. All of the CFs were found to be similar in character on many respects including species, and settlement. The forests from both region had ethnic population of Dang district, mostly *tharus*.

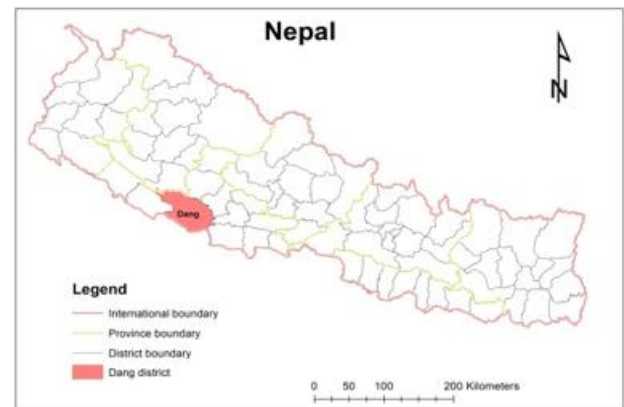


Figure 2: Map of study district

2.2 Methods

The primary data on livelihoods strategy was collected through Semi Structured Interview (SSI), Focus Group Discussion (FGD), Key Informant Interview (KII). The user groups are characterized by heterogeneous community. The livelihood base of CF users was recorded to find HH vulnerability. The vulnerability context used in CF was reviewed engaging them in discussion. The sampling intensity of SSI was 20% of community forests HHs number. Altogether 570 respondents were selected randomly for semi structured interview. Similarly, 14 FGDs were conducted in seven CFUGs. The focus group discussion provided the perspectives about community level strategy further with deeper understanding. Information received from FGD contributed the information for SSI. Expert consultation with district officials, local government officials, province government officials and federal government official, NGOs, and forestry networking organizations became helpful to triangulate the result finally. Interview texts were then organized, condensed, categorized, coded and recorded at household and CFUG level to following themes:

- Livelihoods strategies among users
- Livelihoods strategies adapted by CFUG

The Household data surveyed was analysed and the descriptive statistics provided information about livelihoods strategies in use. Similarly, the Eta correlation was undertaken considering HH income, livelihood strategies and ethnicity.

3. Findings

Majority of households are still agriculture based and subsistence type. Household level livelihoods strategy differed with individual focus based on the economic condition of individual family and their need. The community level livelihood strategy of CFUG has a uniform focus. Such livelihoods strategy focused on capacity development to conservation in the long term. Community strategy is focussed in livelihoods enhancement and conservation. Some of the livelihoods strategies with comparative advantages in the HHs are agriculture, fruit production, seasonal and off - season vegetables, neglected and under - utilized crops (such as beans), and livestock products honey, Non Timber Forest Products (NTFPs) including medicinal and aromatic plants. During the study, it was explored that both households and CFUG have implemented the livelihoods strategies where the former focused on individual need and the latter the collective need.

Broadly, the following approaches were adopted to implement livelihoods in the field:

- CFUGs as lead actors;
- Community forest grant as revolving fund in the community;
- Resource leveraging from CFUGs and other different sources for enhanced activity;
- Involvement of local level government actors such as, ward offices, and others;
- Coordination with divisional forest office
- Involvement of poor, disadvantaged and climate vulnerable people/households in preparing livelihood improvement activities and implementing in own initiation is.
- The pro - poor CFUG intervention has envisioned for a pro - poor socio - economic growth of the community.

3.1 Livelihood strategies among users (Household level)

At the household level, livelihood strategy is more focused on the immediate returns from the intervention. Individual has diverse strategies ranging from agricultural intervention, Income Generation Activities (IGAs), NTFPs, and others. In order to enhance livelihoods, CFUG is gradually intervening programme focusing enhance quality of lives. Individual livelihood is dependent on their resource availability and other socio - economic information.

Following livelihoods strategies were explored among the users of CF

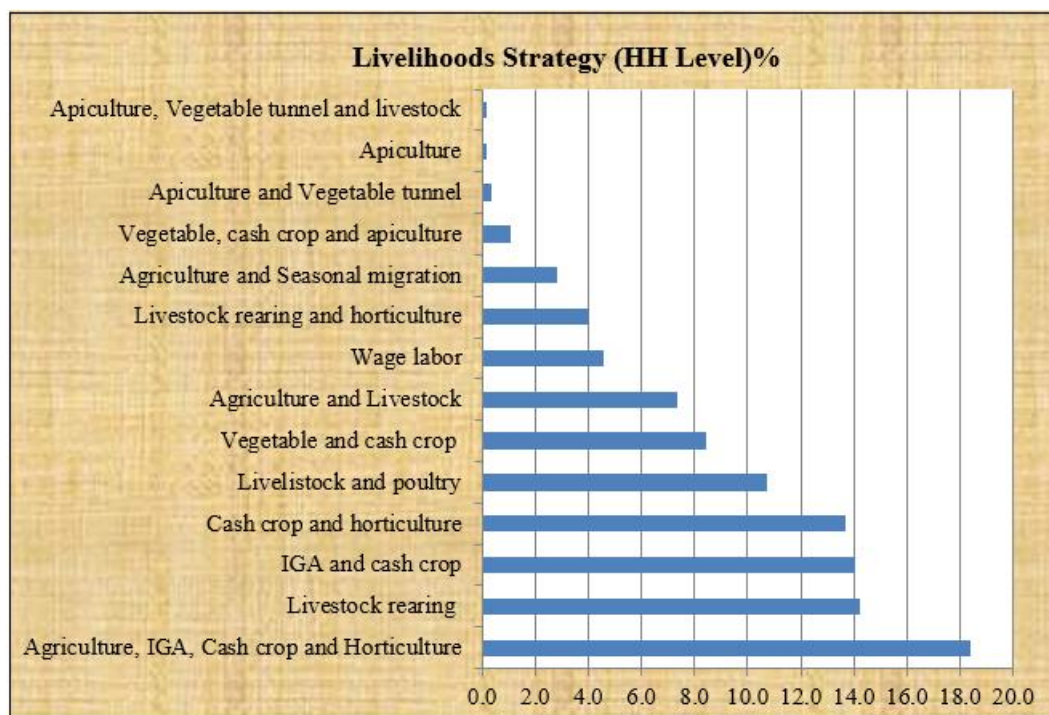


Figure 3: Livelihood strategy at household level

Agriculture, income generation activity, cash crop and horticulture. It is integrated form of livelihood strategy adapted by HHs. People are generating livelihoods through integration of agriculture and cash crop and fruits. This practice is relatively a new concept in the study area. As revealed from the study that agriculture is the primary occupation among the respondents. Majority of the respondents are agricultural farmers involved in producing

different agricultural products for both subsistence use and sustain household economy.

Livestock rearing

Subsistence livestock keeping is also a livelihood strategy among farmers living near the forest area. The households rear cattle for milk and income to make this as one of the livelihood strategies. The indigenous people (*Tharus*) are

found mostly practicing livestock rearing. The meat, milk, manure and money found motivating users in practicing this.

Income generation activities and cash crop

The major focus on introducing income generation activities and cash crop is centered on income. Such a practice being an instant cash such crops such as turmeric, beans fall on priority of the household.

Cash crop and horticulture

People are adopting the cash crops for the immediate return. Such cash crops were found ginger, turmeric among others. The horticulture practice also exists in the community. Improved variety of fruit species are also in practice. The conventional crop switching though is adaptation strategy but is linked with livelihoods. Such practice is adapted for immediate and higher return ensuring enhanced livelihood. Different types of livelihood activities are in practice with the supports of seedlings of fruits (vegetables, citrus fruits, pear, etc.).

Livestock and poultry

The poultry is a recent concept and is practiced in the community. Now it is being used as one of the important livelihood strategies in HHs level. "Development of cooperatives and making them financially capable to invest and implement livestock and poultry is found very effective in increasing community ownership towards the livelihoods program," says CFUG chairperson, Mr. Bhagiram Khadka. Subsistence livestock keeping is an integral part of agriculture production system in this area. Most of the households keep a couple of cattle, buffalo, goats and few poultry. Cow and buffalo are kept for milk, male cattle for plough in agriculture lands, goats for home consumption or sale for additional income. The indigenous people such as Tharu community domesticate pig for home consumption. With more urbanization in the area, commercial poultry is getting popular. It is also securing better income.

Vegetable and cash crop

Both vegetable and cash crop are linked with food security and enhancing income. Both products yield immediate benefit and has been one of the preferred livelihood strategies.

Agriculture and livestock

Agriculture is the major source of livelihoods among the CF users. Agriculture and livestock are observed having relationship of integrated farming. The forest (upstream) and agriculture (downstream) has a unique relation in the area. The upstream has portion of forest area and down - stream has an agricultural area in the context of the study area. As a result, agriculture has been found as major source of livelihoods of households with close connection of forest resources as complementary for integrated agricultural system. "In the context of CFs, agricultural sector is our primary livelihoods option and it has high potential to create employment, reduce rural poverty and food security at the local level if properly managed," said Bheshe Raj Sharma, from Pandaweshwor CF. The agriculture sector is in pressure in recent years due to lack of labourers. As a result of labor migration, environmental stresses and increasingly

effects on disrupting weather pattern are resulting productivity lower.

Wage labor

Wage labor is aimed at subsistence daily living and earning among user. Mostly, wage work is believed to among the poorest member of the family. Such people either have little land or no land.

Livestock and horticulture

It is linked with the benefit of food security and income through livestock and horticulture. Livestock and horticulture practice exists at the HH level. The horticulture pays in the long run whereas selling milk through livestock rearing is immediate benefit. The benefit of food security and income is being secured. The community forest, agricultural land, and farming practice is in a continuum landscape with interlinkage.

Agriculture and seasonal migration

As mentioned earlier, agriculture is one of the major sources of livelihoods among the HHs with close connection of forest resources as complementary for integrated agricultural system. The seasonal migration is affecting the system. Most of the migration of people is in India with short period and thereafter to middle - east relatively longer period. Poor people who can not afford for air ticket and financial resource for migration process prefer to choose to go India. If people have capability to pay, they go to middle - east. The human resource in agricultural sector has been found lesser due to such movement. The result of migration has affected agricultural practice adversely. The positive side of migration is also visible. It enhanced the socio - economic status. The FGD also revealed that the seasonal migration trend among users is higher to India. The adolescents found travel to India for seasonal employment. The Janajati and Dalit communities mostly migrate in search of an opportunity seasonally. For longer period job, there is also the trend of going out to Gulf countries but middle and higher class person only afford this. Poor economic status has forced them to migrate India to earn money. "In our rural areas, there are fewer opportunities of income, people migrate to India," said Mr. Santosh Rana, user of Kartikerani Community Forest.

Vegetable, cash crop and apiculture

Apiculture is recent practice whereas vegetable and cash crops are in practice for long time. In an effort to address the livelihoods, HHs are practicing cash crop and income generation activities. Such practice of cash crop is visible in their farm land, and kitchen garden. Such cash crop is also to enhance income of the family. According to the finding, vegetable, cash crop and apiculture contributes livelihoods of family both as safety net and means of income generation. Such intervention is also emerging as commercial vegetable farming in recent years. The infrastructure such as road and irrigation facilities along with technical inputs is critical for success. Service has also been provided by stakeholders, CFUG, and other actors. Most of the vegetable producers belong from indigenous people who are considered as most disadvantaged and resource poor group of Nepal. The growing trend of production of cash crops and IGAs among the people indicates that farmers are enthusiastic in these

interventions. The motivation of switching of the conventional crop to cash crops and alternative IGAs also revealed that these schemes will continue to grow in future.

Apiculture and vegetable tunnel

Establishing vegetable tunnel is a recent concept among HH of CFUGs. The establishment of vegetable tunnel and apiculture has helped them to enhance their income. People are more interested towards the vegetable tunnel for mass production. Through this improved farming aptitude, the community is heading towards the commercial farming. Such practice is gaining momentum as innovative concept. The traditional farming practice is also gradually found changed with time. The HHs have been found adopting improved farming practice. Among others, potato, cauliflower, cabbage and pea are grown in off - season. The off - season yields better income. It is practised particularly from February to August while tomato is the main crop at lower altitude off - season from July to September.

Apiculture

The focus on apiculture as the single entrepreneurship is also visible. The introduction of apiculture as entrepreneurship level is relatively a recent concept. This is getting momentum for its immediate benefits to the HHs. Though it has benefits but has limitations as well. It has many risks.

"During rainy season, we have to suffer attack on bees by other creatures," said one of the apiculture practicenor, Mr. Arabinda Acharya who roams bees to get pasture land in different places. According to the entrepreneur, the concept of cooperative needs to be involved in marketing chain for honey bee to make farmers strengthened and sustained in the long run.

Apiculture, vegetable tunnel and livestock

It is an integrated farming strategy adapted by HHs. In recent years, there has been considerable interest in improving the economic well - being of smallholders by encouraging them to grow high - valued cash crops. The high value crops can give better returns to the farmers if the basic access on technology, infrastructures (road and irrigation) and market facilities are improved. People have engaged in growing off - season vegetables like potato, cauliflower, cabbage and peas. It was explored that very few households were involved in commercial vegetable farming (vegetable). Among others, potato, cabbage, cauliflower, raddish, carrot, chilly, brinjal, pumpkin, tomato, beans, gourds etc. farming are major vegetables adapted among HHs.

The FGD has revealed the following rationale to adapt livelihood strategies among HHs.

Table 1: Livelihoods strategies and rationale from FGD

SN	Livelihoods strategies	Rationale
1	Agriculture, income generation activity, cash crop and horticulture	Integrated strategy
2	Livestock rearing	Focus on milk product
3	Income generation activities and cash crop	Focus on income
4	Cash crop and horticulture	Income, and new intervention in mass scale
5	Livestock and poultry	Complementing income
6	Vegetable and cash crop	Focus on income
7	Agriculture and livestock	Livelihoods of household
8	Wage labor	Subsistence daily living/earning
9	Livestock and horticulture	More benefit with some risk
10	Agriculture and seasonal migration	Safety - net for livelihoods
11	Vegetable, cash crop and apiculture	Relatively convenient to accomplish
12	Apiculture and vegetable tunnel	Shifting towards the commercial farming
13	Apiculture	Focus on single entrepreneurship
14	Apiculture, vegetable tunnel and livestock	Integrated farming

(FGD, 2022)

3.1.1 Livelihoods strategy of household, income and ethnicity

The relation between income of the household and livelihood strategies was explored using Eta correlation. The Eta correlation was found as 0.185. However, the Eta correlation between income of the household and ethnicity was found very strong as 0.740.

Table 2: Livelihoods strategy of household, income and Eta correlation

Eta correlation	
Livelihood strategy among households	0.308
Income of households	0.185*
Ethnicity	0.852
Income of households	0.740*

The value of Eta correlation 0.185 shows that income of the household has very low relation with the specific livelihood strategy among the households but ethnicity has very high

level of association with income. As a result, a livelihoods strategy adopted by households does not have any specific choice based on income. A longer and short term plan of CFUGs is indispensable to effectively implement livelihood improvement activities and build resilient capacity of target people who are socially and economically poor and climate vulnerable. CFUGs are the key vehicles for planning, implementing and scaling - up of livelihood activities.

3.2 Livelihoods strategies in CF

The CFUG has an institutional policy of livelihoods intervention in its work - plan mandated by Government of Nepal/Divisional Forest Office. While providing livelihoods support, participatory well - being ranking was carried out in all CFUGs. Based on realized need of particular CF, general assembly decides to make a category of its members based on their wellbeing. Generally, four types of member categories are maintained based on their economic status

among them food sufficiency for 12 months (having additional or permanent income, having good socio - political status as A), food sufficiency for 9 months (having moderate socio - political status, participate regularly in decision making as B), food sufficiency for 6 months (inadequate access on basic needs like education, electricity, drinking water; working on daily wages), food sufficiency for 3 months (no access on basic needs, inadequate participation in decision making process, working on daily wages as D). The participatory categorization of the members based on their livelihood capitals becomes fundamental base to ensure the access of poor and the vulnerable into livelihood improvement activities. Such categorization also works in minimizing conflicts and controlling elite capture in the benefits. In this way, both of these initiatives became start up for integration of livelihood activity for users.

The allocation of funding varies according to CF varied. More and more women are being house head in rural Nepal due to outmigration of men. The revolving fund in the CFUG has sustained support in capacity development, micro enterprises, IGA and other means of livelihood. This is a holistic concept of the livelihood enhancement offered by the CFUG. CFUG authorities were very much enthusiastic to provide support on cash crops and IGAs based on the viable plan that users produce. The CFUG has supported to community with goat keeping, nursery, bioengineering, slope stabilization, forest based entrepreneurship support, etc. Users expect income generation and innovation to traditional farming approaches as livelihood activities. Communities are committed to take livelihood intervention as opportunity to strengthen market linkages to their end products. The livelihoods strategies offered by CF are increasing the employment creation. The proper record of such employment generation has not been recorded effectively.

Following livelihood strategies were explored in CFs

Livestock related support

The livestock support practice in the form of goat, buffalo is found adapted in CF. The dominance of agricultural practice in the area made farmers benefitted from this. Mr. Naresh BK from Dharna is a blacksmith. He used to run his metal

hearth through traditional stove which is manual and it needed continuous engagement. But he has left it now. He received support on livestock. He is very happy with this support and running his business well. Similar, stories of users provide perspectives about the livelihood support in the CF.

Income Generation Activities and cash crop

Similarly, the IGA and cash crop have been an important aspect of the CF for its livelihoods support. Such practice of cash crops induced by CFUG is visible among HHs. Such cash crop is more focused towards income of the family. The creation of part - time employment generation supporting IGA and cash crops is observed. Similarly, NTFPs such as (broom grass); ginger farming and goat raising are emerging as localized income generation intervention.

Agriculture and Income generation activity

The CFUG supports community through agricultural innovations such as providing subsidized agricultural inputs such as seeds, and IGA. Similarly, other livelihood activities such as providing seed grasses is also in practice. User groups have introduced short rotation IGAs for immediate benefit. Among others, ginger and turmeric are recognized as important cash crop among the farmers of the CFUG.

Vegetable and cash crop

The CFUG also intend to address the poverty challenges of the community. The vegetable and cash crop intervention is one of the important activities to address this challenge. Farmers are reluctant to plant paddy and other crops. The off season vegetables tomatoes, onions, and broccoli are in practice in this area. Both seasonal and off - seasonal vegetables have been cultivating in the mass scale by farmers. However, with all these livelihoods initiatives, only small holders are benefitted; the landless poor are still deprived due to systemic gap.

Nursery and fruit farming

The support for nursery and fruit farming is also practice among the CFUG. Users also provided support of seedlings including fruits species (mango, lemon, pear etc) to its users. The CFUG have It is widely grown among CFUG users. Along with fruit shade loving crops were also found grown.

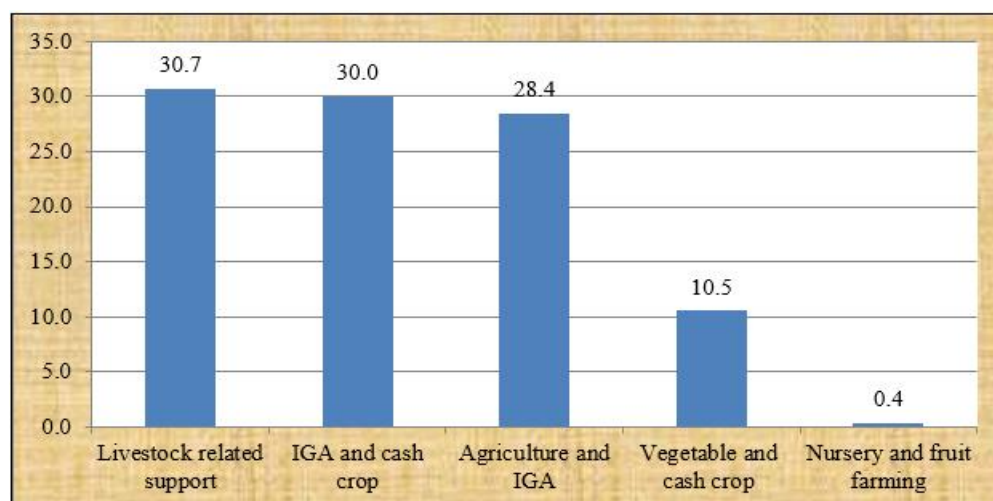


Figure 4: Livelihood strategy at CF level

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The major focus of the livelihoods strategies of CF is to support poorest of the users. However, some of the community forests have not allocated amount livelihood activities focussing them. The principal reason for not allocating the resource is attributed to lower income of the forest.

Table 3: Livelihoods strategy of CF and rationale

SN	Livelihoods strategies	Rationale
1	Agriculture and IGA	Most convenient way
2	IGA and cash crop	Immediate economic return
3	Livestock related support	Dairy and meat production
4	Nursery and fruit farming	Plantation, Greenery
5	Vegetable and cash crop	Nutrient enrichment to the household and income

(FGD, 2022)

The FGD explored that the livelihood options provided are not adequate for income to the people. The gap is not bridged yet in addressing the economic hardship. More specifically poor people are mostly hard hit. Non - farm employment opportunities are also limited.

Discussions

The economic growth enhances potential to reduce poverty and opens up opportunities to solve other social problems as well. The underlying causes of poverty are multidimensional and differ for each disadvantaged household. Both community and household level livelihood practice is observed among the users and its one of the example is conserving agricultural and forest seeds in the community (Maharjan and Maharjan 2017). Some CFUGs are actively found engaged in this. Smallholder farmers around the world obtain their agriculture and relevant seed from various sources including community level (Vernooy et al.2022).

Livelihood Strategies at user level

The livelihood diversification is perceived as one of the pertinent strategy among farmer (Roscher, 2022). In this study as well, several strategies have been explored by HH and community forestry level. The livelihoods strategy of rural people is linked to forestry products (Bisui et al., 2023; Nugroho et al., 2023). Similarly, in the context of Nepal, the livelihood of the rural people is closely linked to forestry sector (Chhetri et. al, 2023; Adhikari et al.2023). The intervention of livelihoods programme through CFUG has demonstrated evidence that poverty reduction is possible through CFUG mobilization with a livelihoods strategy (Giri et al.2023, Shrestha et al.2022). Similarly, managing community forest resources in Nepal has also been attributed to improving livelihoods besides its conservation (Shahi et al., 2022, Nuberg et al.2019).

It can be claimed that CFUGs can be means to reduce poverty. Based on the study from CFUGs, it has immense potential to contribute in reducing poverty at household level. The CFUGs allow users to collect fodder, firewood, timber, NTFPs and other forest based products. These interventions have high prospect of improving livelihood of poor and the marginalized. The government policy has a mandatory provision of utilizing at least 40% of CFUG earning in to IGAs.

The contribution of agricultural sector has been perceived as 31.7% of Nepal's economy (Dhakal 2022, Poudel and Paudel 2021). Similarly, the contribution of forestry sector is also comprehensive but still to be evaluated in the national GDP (Bhatt et al.2021, Paudel et al.2021). The livelihood strategy is related to the socio - economic condition of CFUGs. The linkage of livelihood strategy is related to the prospect of HH and community (Zhou and Chi, 2021). Livelihood activities such as providing seedlings of fruits and vegetable is observed. However these adaptation initiatives being a supportive to land holders, the landless poor are still being deprived due to CFUG systemic gap.

Livelihood Strategies in CF

Management of forest resource has potential to reduce livelihood vulnerability of community people (Roshani et al., 2022, Charnley 2023). The CF has to put its further effort to address the livelihoods addressing existing gaps (Paudel et al., 2022). At the institutional level, CFUG is emphasizing the livelihoods as major focus. The allocation of resource for livelihood activities and its diversification has been studied (Huang et al., 2021). In addition, emerging issues such as the migration and transhumance also has also been linked with livelihoods very recently (Taylor, 2022). The job creation from the CFUG intervention is a new area for discussion. Local economy can be flourished if CFUG triggers the economic activities through livelihood intervention at local level. With revolving fund support, poor people can use the money to generate additional livelihood opportunities from the investment on as goat, pig rearing etc.

Coinciding CF users, the national scenario of agriculture is almost similar. In Nepal, agriculture is contributing to about 62 percent households, 65 percent employment including contribution on National Gross Domestic Product (GDP) (Adhikari 2015, Bishwakarma 2022, CBS 2021, TRN 2023). Thus, agriculture is regarded as a major contributor to the national economy as well as individuals' livelihood (Adhikari 2015, Poudel et al.2021).

Community Forestry contributes livelihoods of rural poor through its income as safety net globally (Gilmour et. al 2004, Kellert et. al 2000). The contribution of forestry sector in rural livelihoods of Nepal has been observed significant (Gautam et al., 2023; Adhikari et Al., 2015; Springate - Baginski, 2003). Community Forests of under the study have been vibrant transforming them towards third generation issues in their agenda accomplishing first and second generation issues mostly. Study further identifies how innovations such as introduction of IGA, apiculture, enhances institutional growth, contributes livelihoods and addresses community need concurrently. The community forestry economic development has been directed towards addressing livelihoods through these intervention. In addition, this study further explored that resources such as stinging nettle leaf, bamboo craft, furniture, bee hive, wood and craft are some of the important Forest Based Enterprises (FBEs) potential in CFs. FBEs have been contributing to the livelihoods but it is not accounted separately as forestry contribution. Low level of off - farm employment and income opportunities for the rural communities has pushed farmer back. Preparation of annual, medium and longer term

plan of CFUG and individual members is significantly important to drive towards improved livelihoods.

Conclusions

Agriculture has been major source of livelihoods of among CF users with close connection of forest resources as complementary for integrated agricultural system. Livelihood strategy at HH level and the strategy adapted by CFUG has fundamental difference in its objectives. At the household level, the subsistence agriculture is still dominant. In recent days, people are interested towards the integrated farming practice such as apiculture, livestock and income generation to address the changing needs. The local level employment is created through the CFUG livelihoods support at the subsistence level.

The CFUG intends to tackle the poverty as well as its conservation agenda. Revolving Fund used in the CFUGs is playing a significant role in expanding the financial service. It provides financial solutions to the users during the crisis time.

The linkage of livelihood with subsistence agricultural sector is phenomenal in these CFUGs. Some innovations were also noted. Different activities such as Agricultural intervention, organic production without use of chemical fertilizers, green business, processing works, entrepreneurship, pocket based production and apiculture have important linkage. The integrated livelihoods activities have been focussed to reach poor and disadvantaged households mainly women headed households. Equal emphasis aimed to be given to migrants' families and returnee youth who are willing to make investments back home and support their families.

It can be concluded that visible change in poverty reduction takes time, the early result from CFUG and household intervention indicates that poverty can be reduced through a systematic intervention of livelihoods through focused approach.

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Disclosure statement

The finding of this paper is original and the first author has conducted field work in Dang district of Nepal.

References

- [1] Adhikari, B. R., Baral, N. R. Hancock, J., Kafley, G.; Koirala, P., Reijmerinck, J., & Shapiro, B. (2015). Regenerating Forests and Livelihoods in Nepal a new lease on life, 270 pps.
- [2] Adhikari S, Harada K, Dahal NK, & Gurung R (2023). Scientific forest management practices in Nepal: perceptions of forest users and the impact on their livelihoods, *Journal of Forest Research*, 10 pps.
- [3] Adhikari, S. (2015). Contribution of agriculture sector to national economy in Nepal, *The Journal of Agriculture and Environment*, 16: 180 - 187.
- [4] Agrawal, A. & Ostrom, E. (2001). Collective action, property rights, and decentralization in resource use in India and Nepal; *Politics and Society*, 29 (4), 485 - 514.
- [5] Bhatt, BP, Chhetri, Godar, S, Silwal, T, and Poudel, M (2021). Economic Contribution of Forestry Sector to National Economy in Nepal, *Journal of Resources and Ecology*, 12 (5): 620 - 627.
- [6] Bista, R., Graybill, S., Zhang, Q., Bilsborrow, R. E., & Song, C. (2022). Influence of rural out - migration on household participation in community forest management? evidence from the middle hills of Nepal, *Sustainability*, 15, 18.
- [7] Bisui, S., Pradhan, B., Roy, S., Sengupta, D., Bhunia, G. S., & Shit, P. K. (2023). Estimating forest - based livelihood strategies focused on accessibility of market demand and forest proximity, *Small - scale Forestry*, 19.
- [8] Bishwakarma B. K. (2022). Federalization of agriculture sector: issues and challenges, *Nepal Public Policy Review*, Vol 2: 339 - 382.
- [9] CBS Nepal (2021). Census (National Statistical Office), accessed in <https://censusnepal.cbs.gov.np/results>.
- [10] Chakraborty, R. N. (2001). Stability and outcomes of common property institutions in forestry: evidence from terai region of Nepal; *Ecological Economics*, 36, 341 - 353.
- [11] Chambers, R., and Conway, G. 1992. Sustainable rural livelihoods: practical concepts for the 21st century, discussion paper 296, Institute of Development Studies: Brighton.
- [12] Charnley S. (2023). Livelihood investments as incentives for community forestry in Africa, *World Development*, 168: 19 pps.
- [13] Chhetri, R. B. (2006). From protection to poverty reduction: a review of forestry policies and practices in Nepal; *Journal of Forest and Livelihood*, 5 (1), 66 - 77.
- [14] Chhetri, R., Yokying, P., Smith, A., Van Den Hoek, J., Hurni, K., Saksena, S., & Fox, J. (2023). Forest, agriculture, and migration: contemplating the future of forestry and agriculture in the middle - hills of Nepal, *The Journal of Peasant Studies*, 50 (1), 411 - 43.
- [15] Dhakal CP (2022). Agriculture Sectors and Its Contribution to National Economy in Nepal, *Nepal Journal of Multidisciplinary Research*, Vol.5 (2), 1 - 10.
- [16] Dev, O. P., Yadav, N. P., Springate - Baginski, O., & Soussan, J. (2003). Impacts of community forestry on livelihoods in the middle hills of Nepal, *Journal of Forest and Livelihood*, 3 (1), 64 - 77.
- [17] Gautam, S., Timilsina, S., Shrestha, M., Adhikari, B., Adhikari Khatri, B. B., & Timsina, J. (2023). Do managed Hill Sal (*Shorea robusta*) community forests of Nepal sequester and conserve more carbon than unmanaged ones?, *Environment and Natural Resources Journal*; Vol 21 (3), 222 - 231 pps.
- [18] Ghimire, P. and Lamichhane, U. (2020). Community Based Forest Management in Nepal: Current Status, Successes and Challenges, *Grassroots Journal of Natural Resources*, 3 (2): 16 - 29
- [19] Gilmour, D. A. & Fisher, R. J. (1991). Villagers, forests and foresters: the philosophy, process and

- practice of community forestry in Nepal, Sahayogi press pvt. Ltd, Kathmandu.
- [20] Gilmour, D., Malla, Y. & Nurse, M. (2004). Linkages between Community Forestry and Poverty, RECOFTC, 12 pps.
 - [21] Giri PB, Yucharoen M, Gyawali S, and Gentle P (2023). Implementing SDG - 15 Through Community Forestry Management: A Case of Tarpakha Community Forest, Gorkha, Nepal, *Environment Asia*, 16 (2), 1 - 11.
 - [22] Huang, L., Yang, L., Tuyền, N. T., Colmekcioglu, N., & Liu, J. (2021). Factors influencing the livelihood strategy choices of rural households in tourist destinations, *Journal of Sustainable Tourism*, 22.
 - [23] KC, B. B., Mandal, R. A., & KC, S. (2023). Assessment of sustainability in community forests: a study from Dolakha district, Nepal, *International Journal of Forestry Research*, 13.
 - [24] Kellert, S. R., Mehta, J. N., Ebbin, S. A., Lichtenfeld, L. L. (2000). Community Natural Resource Management: Promise, Rhetoric, and Reality, *Society and Natural Resources*, 13, 705 - 715.
 - [25] Keskinen M, Chinvanno, S., Kumm, M., Nuorteva, P., Snidvongs, A., Varis, O., & Vastila, K. (2010). Climate change and water resources in the Lower Mekong River Basin: putting adaptation into the context, *Journal of Water and Climate Change*, 1 (2), 103 - 117.
 - [26] Kimengsi, JN, Bhusal P (2022). Community Forestry Governance: Lessons for Cameroon and Nepal, *Society & Natural Resources*, 35: 4, 447 - 464.
 - [27] Knutsson P (2006). The Sustainable Livelihoods Approach: A Framework for Knowledge Integration Assessment, *Human Ecology Forum*, 13 (1), pp 90 - 99.
 - [28] Kranz, L (2001). The Sustainable Livelihood Approach to Poverty Reduction: an Introduction, SIDA (Publisher), 38pps, accessed at <https://shorturl.at/zkZe8>, accessed on 12 Feb 2023.
 - [29] Maharjan, S. and Maharjan, K. (2018) Roles and contributions of community seed banks in climate adaptation in Nepal, *Development in Practice*, 28: 2, 292 - 302.
 - [30] Murer, C., Piccoli, A. (2022). Affirmative Policy in Nepal's Community Forestry: Does it Make a Difference in Terms of Social Sustainability? 19.
 - [31] Nuberg, I. K., Shrestha, K. K., Bartlett, A. G. (2019). Pathways to forest wealth in Nepal, *Australian Forestry*, 82: 106 - 120.
 - [32] Nugroho, E., Ihle, R., Oosting, S. J., Heijman, W. (2023). The role of forest extraction in the livelihood strategies of Indonesian smallholder cattle farmers, *Outlook on Agriculture*, 1 - 10.
 - [33] Ojha, H. & Hall, A. (2023). Transformation as system innovation: Insights from Nepal's five decades of community forestry development, *Innovation and Development*, 13 (1), 109 - 131.
 - [34] Pandit, B. H. & Thapa, G. B. (2004). Poverty and resource degradation under different community forest resource management systems in the mountain of Nepal; *Society and Natural Resources*, Vol. (17), pp 1 - 16.
 - [35] Paudel Y, and Paudel A (2021). Contribution of Forestry in Economy and Employment Generation in Nepal, *Indonesian Journal of Social and Environmental Issues*, 2 (2), 188 - 195.
 - [36] Poudel O, Kharel KR and Upadhyay YM (2021). Assessing the Contribution of Agriculture for Boosting Nepalese Economy, *BMC Journal of Scientific Research*, V (4), 31 - 41.
 - [37] Paudel, G., Carr, J., Munro, P. G. (2022). Community forestry in Nepal: a critical review, *International Forestry Review*, 24 (1), 43 - 58.
 - [38] Pokharel, B. K. (2001). Livelihoods, economic opportunities and equity: community forestry and people's livelihood; *Journal of Forestry and Livelihood*, 1, 16 - 18.
 - [39] Rayamajhi, S., Smith - Hall, C. & Helles, F. (2012). Empirical evidence of the economic importance of Central Himalayan forests to rural households, *Forest Policy and Economics*, Vol 20, 25 - 35.
 - [40] Roscher, M. B., Allison, E. H., Mills, D. J., Eriksson, H., Hellebrandt, D., Andrew, N. L. (2022). Sustainable development outcomes of livelihood diversification in small - scale fisheries, *Fish and Fisheries*, Vol 23, 910–925.
 - [41] Roshani, Sajjad, H., Kumar, P., Masroor, M., Rahaman, M. H., Rehman, S., Ahmed, R., Sahana, M. (2022). Forest vulnerability to climate change: a review for future research framework, *Forests*, 18.
 - [42] Shahi, N., Bhusal, P., Paudel, G., Kimengsi, J. N. (2022). Forest—People nexus in changing livelihood contexts: Evidence from community forests in Nepal, *Trees, Forests and People*, 10, 1 - 12.
 - [43] Scoones, I. (1998). Sustainable rural livelihoods a framework for analysis, IDS Working paper 72, 22.
 - [44] Shrestha S, Sharma GB, Bhattarai S (2022). People's Participation in Community Forest Management, *International Journal of Science and Society*, Volume 4 (2), 256 - 276.
 - [45] Singh, P. K. and Hiremath, B. N. (2010). Sustainable livelihood security index in a developing country: A tool for development planning, *Ecological Indicators*, 10, 442–451.
 - [46] Smith, A. C., Hurni, K., Fox, J., Van Den Hoek, J. (2023). Community forest management led to rapid local forest gain in Nepal: A 29 year mixed methods retrospective case study, *Land Use Policy*, 11.
 - [47] Solesbury, W. (2003). Sustainable Livelihoods: A Case Study of the Evolution of DFID Policy, ODI, 36.
 - [48] Springate - Baginski, O., Dev, O. P., Yadav, N. P., Soussan, J. (2003). Community Forest Management in the Middle Hills of Nepal: The Changing Context, *Journal of Forest and Livelihood*, 3 (1), 5 - 20.
 - [49] Sterling E. J. et al. (2022). The state of capacity development evaluation in biodiversity conservation and natural resource management, *Oryx*, 2022, 56 (5), 728–739.
 - [50] Sterling E. J. et al. (2020) Creating a space for place and multidimensional well - being: lessons learned from localizing the SDGs, *Sustainability Science*, 15: 1129–1147.
 - [51] Taylor, P. J. 2022. The geographical ontology challenge in attending to anthropogenic climate

change: regional geography revisited, *Tijdschrift voor Economische en Sociale Geografie*, 114 (2), 63–70.

- [52] TRN (2023). The Rising Nepal, accessed in <https://risingnepaldaily.com/news/32119>, accessed on 25 July 2024
- [53] Toner, A., Franks, T. (2006). Putting livelihoods thinking into practice: implications for development management, *Public Administration and Development*, 26, 81–92.
- [54] Zhou, S. and Chi, G. (2021). Farmland Rental: The Impacts of Household Demographics and Livelihood Strategies in China, *Land*, 11, 18.
- [55] Vernooij R. (2022). Does crop diversification lead to climate - related resilience? Improving the theory through insights on practice, *Agroecology and Sustainable Food Systems*, 46: 6, 877 - 901.