

## **Forest resource mobilization for sustainable livelihood: a community approach to local governance in Nepal**

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### *Abstract*

Social debates in forest resource management demands understanding of the complex socio-economic needs of socio-culturally and linguistically diverse community in Nepal today. Academicians and practitioners have been addressing the theories of managing forest resources and community participation with the aim of sustainable livelihood. The main purpose of the paper is to present community forest management and local governance strategies for livelihood empowerment based on community forest user group model. Global evidence and research findings have shown that all the community forests are at risk, and vulnerable environment in hills, rural areas and in plain regions and livelihood has been felt in risk. The attitude of people was found more positive towards the behavior of changing livelihood pattern in weak physical environment. Innovative ways of promoting local governance along with the natural resource management for securing and enhancing livelihood has been felt effective. Integrated Natural Resource Management provided new paradigms for development approaches in rural setting.

*Keywords:* sustainable livelihood, community forest, non-timber forest products, cooperative management

### **1. Introduction**

Role of local communities in forest management seems an international exemplary work in Nepal. Government of Nepal has started to hand over the state owned forest to local communities since the early 1980s. In Nepal, state owned the forest and forest land, and handing over forest to local communities means handing over the management and sustainable utilization rights to the local communities. Based on these rights, nearly 1.9 million people of Nepal have been engaging in community based forestry. Of the total area of Nepal (14.7 million hectares), forest occupies 5.8 million hectares out of which 1.9 million hectares has been handed over to local communities as means of community based forestry comprising 45% of total pollution of Nepal (FSMP, 2013). There are about 18,000 Community Forest Users Groups (CFUGs), 17 Collaborative Forest Management Group (CFM), 6712 leasehold forest user group and 4088 buffer zone management groups which are the exemplary of community based forestry in Nepal. People are put in the driving seat for management of forest resources (FSMP, 2013). More than half of world's poor depend heavily on natural resources for their

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livelihood, and in Nepal about 70% of people are forest dependent (Adhikari, 2004). There is a need to find an innovative ways for natural resource management for securing and enhancing livelihood. Integrated Natural Resource Management (INRM) provides new paradigms for development approaches. But, there has been very little literature that provides an adequate knowledge base in understanding the integration process at the catchment level in developing countries. Forestry sectors have claimed at least partial success in these approaches for community-based management approaches (Parajuli, Pokharel and lamichhane, 2010). In many cases, forest management are very much dependent on each other, and many communities have a CFUG. Yet we know very little about whether or not these are integrated, and whether there is potential for taking a more integrated approach in developing these community-based natural resource management entities. What we don't know is whether communities themselves play more of an integrative role. This all indicates government's realization of the need for institutional mechanism for integrated natural resource management. The rationale behind the provision of the Community Forestry and the CFUGs in Nepal was the consequences of the Government's incapability to conserve the forest and biodiversity effectively through its bureaucratic systems. In 1957, the Government nationalized virtually all forests and placing them under the legal authority of Forest Department (Pandey, 1999). As a result, people gradually lost all of their traditional right over the forests and were deprived from getting their subsistence needs of forest products. Resentment against nationalization contributed to unregulated extraction, creating conflict between villagers and forest department staffs (Upreti, 2007). This distancing of people from resource management led to destruction of forests (Gilmour and Fisher, 1991).

Nepal's community forestry is a well-established legal grounding for decentralization of forest management roles and responsibilities from state to the local communities as it is three decades old in practice (Giri and Ojha, 2010). The community forestry program has met with some notable successes in terms of enhancing flow of forest products, improving livelihoods opportunities for forest dependent people, strengthening social capital, and improving the biophysical condition of forest. Because of these successes, Nepal's community forestry has moved beyond its original goal of fulfilling basic forest needs of the people including firewood, fodder, timber, and non-timber forest products (NTFPs), and hence Nepal is pioneer in terms of community-based natural resource management (Giri and Ojha, 2010).

Various physiographical, geological and hydrological factors contribute to the high incidence of natural disasters, e.g. the seismic faults passing through the country, the high elevation of the mountain slopes, and highly skewed rainfall due to monsoon (Pokharel and Paudel, 2005). At the same time, the pervasive poverty and the rapid population growth have further compounded the disaster scenario of the country, causing the high degree of environmental deterioration, and the increased encroachment in the marginal lands. Of all the major hazards, earthquake is potentially the most devastating (Bhattarai and Ojha, 2001).

The incidence of poverty is much higher in hills and mountains than in the Terai (Southern plains of Nepal). More striking is the difference in the level of poverty between rural and urban areas. As a result of low income and high prices due to poor transport network, the Terai surplus does not easily flow to the hills and mountains, rather much of the surplus goes to India. One implication of this from a food security perspective is that food adequacy at the national level is not a sufficient guarantee for Nepal's food security. The proportion of people in rural areas under poverty line is much higher as compared to the urban areas. The rate of underemployment in Nepal is found to be about 40% of the available person days per year (Chapagain, Kafle, and Nirmal, 2009).

## 2. Research methodology

This study is descriptive. Structured interview, and focus group discussion, were used to collect data. The quantitative data concerning community forest management and other related information were collected and analyzed using statistical tools. Six local forestry groups comprising of four community forest users groups, one leasehold forest users group, and one collaborative forest management group were selected. About 381 households from each Forest User group (FUG) were surveyed. Various relevant literature was reviewed as part of designing of research, and getting in-depth knowledge about the subject of study.

The analysis of data consisted of organizing, tabulating, performing statistical analysis and drawing inferences (Pant and Wolf, 2003). The coding process included the categorization of responses on the interview schedule, giving appropriate numbers for each different response and copying the responses on a code-book (Babbie, 1990). The computer readable forms of coded responses were entered into SPSS and statistical analysis was carried out.

### 2.1 Results and findings

Socio-economic status of the people determines the condition of livelihood of people how they have been living in the rural setting. The influence of the community forest management is considered as the change factor for sustainable livelihood in general. The households participated in the research rated about their status of livelihood in sample districts. The questions were subjective related to the details of all family members including income, expenditure, profession and status of food production and causes of the economic threats.

The households were categorized as rich, middle class, poor, woman led, Dalit, and landless to rate their economic level. The selection of households of different social and economic background has been illustrated in table 1.

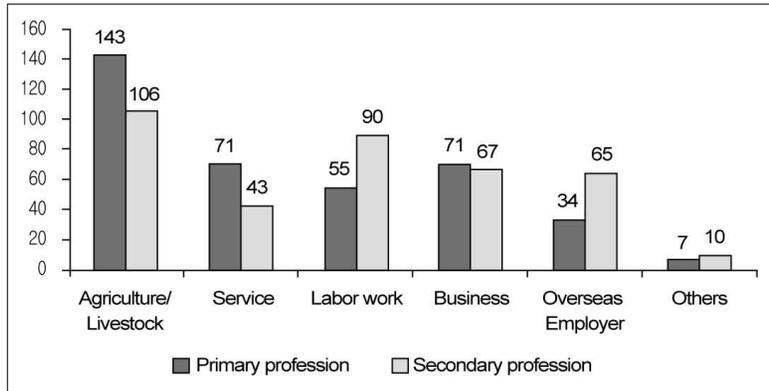
Table 1. Economic status of the household

S.N	Economic Strata of the family	No. of households	Households (%)
1	Rich	25	7
2	Middle class	120	31
3	Poor	134	35
4	Woman led	42	11
5	Dalit	34	9
6	Landless	26	7
	Total	381	100

Source: Field survey (2015)

Out of 381 households, the household of rich family, middle family and poor family were rated as 7%, 31%, and 35% respectively. Similarly, the household of woman led, Dalit and landless family were 11%, 9% and 7% respectively. The majority of the households were from middle and poor classes.

Figure 1. Trend of primary and secondary income sources of the family



Agriculture, livestock, service, labor work, business and overseas employment were recognized as major sources of the family in the sample areas. Out of 381 households, the main income source of 143 households rated agriculture and livestock as their primary profession and 104 respondents placed it in secondary source of income. Similarly, 90 households rated labor work as their primary source of income and 55 rated as secondary source. Besides these two major sources, 71 rated business as primary source and 67 rated as secondary source for their income. However, another 71, 31 and 7 respectively rated service, overseas employment and others as their primary source of employment. Majority of the people rated agriculture, livestock, business and labor works as their primary source of income.

Table 2. Income status of households

S.N	Economic status of household	No. of households	Households (%)
1	Saving	150	39
2	No saving & no loss	56	15
3	Loss	175	46
	Total	381	100

Source: Field survey (2015)

The income and expenditure balance have been rated based on the saving the people make in each year, no save and no loss category, and loss in their income status. The status of income and expenditure of the family has been presented in table 2. Out of 381 households, 150 households that are 39% said that they have been able for saving their income and 56 households that are 15% said that they neither have saving nor loss. The remaining 175 households that are 46% said that they are living with loss; it means their lives are running very poorly and they have fallen in vicious circle of poverty.

The category of people who are able to save yearly has been ranged from below twenty thousand to above eighty thousand. Most of the categories of houses were from middle class to save some money yearly. Out of 150 families 30% rated that they saved below forty thousand in a year. Similarly, 23% rated below sixty thousand, 15% rated below eighty thousand and 17% above eighty thousand to save every year. Most of the people of medium category save money with the range from forty to eighty thousand every year.

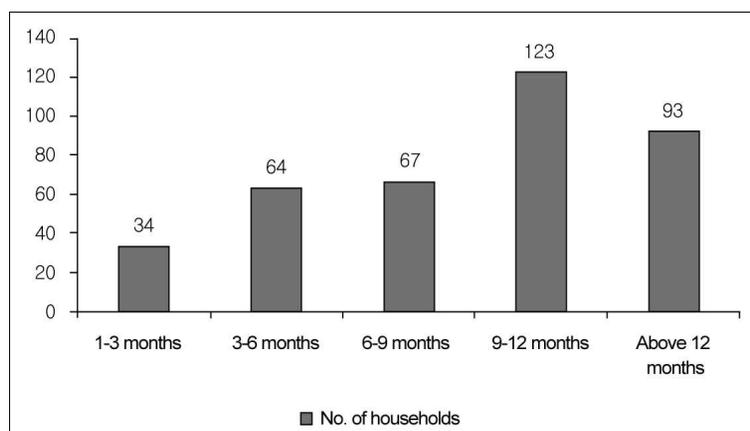
Table 3. Yearly saving status of households

S.N	Saving (yearly)	No. of Households	Saving household (%)
1	Below 20 thousand	23	15
2	Below 40 thousand	45	30
3	Below 60 thousand	34	23
4	Below 80 thousand	22	15
5	Above 80 thousand	26	17
	Total	150	100

Source: Field survey (2015)

In the rural setting, the food produced by the family has not been found sufficiently even for their yearly food requirement. The category was rated from the sufficiency starting from three months interval exceeding even more than a year. This figure is only related to agricultural professional families.

Figure 2. Food production status of the households



Out of 381 families, only 93 families rated that they have food sufficient for more than a year and majority of the families, i.e., 123 families demonstrated that they have food sufficient for 9-19 months. The agricultural production of 34 families, 64 families, and 67 families has available food only for 1-3 months and 3-6 months and 6-9 months, respectively. People who participated on the survey agreed that they have not yet set any food security plan and for emergency they need to import food from out of the village.

The economic condition of the people from the past ten years has been rated under three categories namely as good, normal and weak in the interval of two years. In the beginning of ten years during 2004-2006, the economic condition of the people was rated as 12% good, 45% normal and 43% weak where as in 2006-2008, the level changed to 16% good, 46% normal and 38% weak. Similarly the trend of changing economic condition has been increased in 21% good, 51% normal but weak condition reduced to 28% in 2008-2010. This trend further continued to 27% good, 53% normal and 20% weak in 2010-2012. From 2012-2014, the economic condition has been found good by 36%, normal by 53% and weak condition has fallen to 11%. The major

influence of changing scenario has been realized due to community forest management as one of the effective change factor.

Figure 3. Trends of economic status of the households

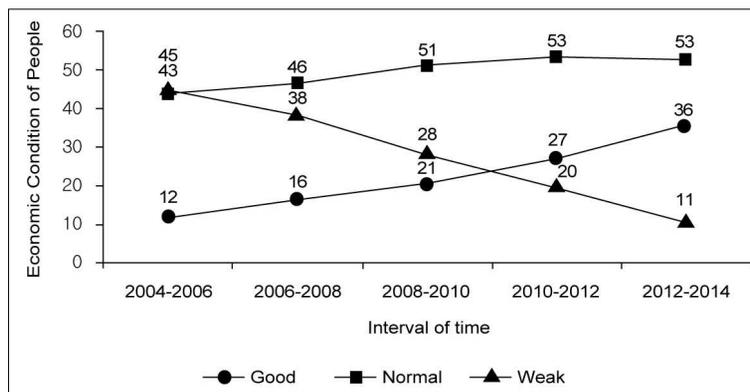


Table 4. Reasons for good economic status

Reasons for good economic Status	No. of household with good economic status	Households of good economic status (%)
Increase in employee in national level	14	9
Increase in overseas employment	17	11
Increase in agricultural production	54	36
Increase in business investments	21	14
Increase in livestock keeping	34	23
others	10	7
Total	150	100

Source: Field survey (2015)

The various reasons have been identified behind the good income of some households in the region. Among the 150 families rated in the good economic status, 36% respondents realized that the increase in income is because of growth in agricultural production. Similarly, 23% of the participants rated that the increase in income is due to increase in livestock keeping and availability of fodder from the community forest. About 14% realized that their income has been good through increase in business investments and generation of employments. Some 11% respondents also agreed that overseas employment has also contributed them for having good economic status in the village. However, 9% respondents identified that because of increase in employee in national level with development interventions in the rural areas, the income has been good for them.

The households were asked to respond different expectations regarding the socio economic status improvement strategies including provision of national employment, loan for overseas employment, modernization of agriculture sector, investment in business and investment in agriculture. Out of 381 families, 123 families that are 32% rated that their expectation was modernization of agricultural sector, 102 families that are 27% agreed that their expectation was investment in agriculture and 56 families that are 15 % said that the expectation for

improvement of their present economic status is to provide investment in business. About 12% rated expectation of provision of national employment and another 12% expected the need of loan for overseas employment to raise their socio economic status.

Table 5. Expectation of households

Expectation of households	No. of households	Household (%)
Provision of national employment	45	12
Loan for overseas employment	46	12
Modernization of agricultural sector	123	32
Investment in business	56	15
Investment in agriculture	102	27
Others	9	2
Total	381	100

Source: Field survey (2015)

### 3. Changing pattern of the livelihood adaptation strategies

There were various reasons found behind the increase in the green coverage as compared to past ten years. The respondents indicated the various reasons including decrease in mobile farming, control of deforestation, community awareness, and increase in reforestation.

Table 6. Reasons for increasing the forest resources in the past ten years

SN	Reason for Increasing	Agreed Participants	Agreed (%)
1	Decrease in mobile farming	78	20
2	Control of deforestation	80	21
3	Community awareness	135	35
4	Increase in reforestation	67	18
5	Others	21	6
	Total	381	100

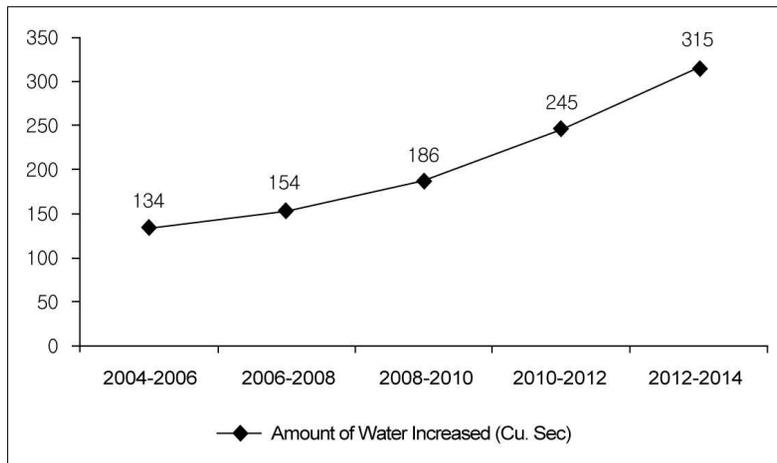
Source: Field survey (2015)

There were different views on the reasons behind the increase in the forest or green coverage. Out of 381 participants, 135 participants that are 35% said that it is due to the community awareness in the recent years. Similarly, 80 participant that are 21% believed on controlling of deforestation, 78 participants that are 20% responded on decrease in mobile farming and 67 participants that are 18% said that it is due to increase in reforestation. 21 participants that are 6% said that it is due to the help of governmental and non-governmental sectors on protecting trees in farming for grass and fire wood, supporting for plantation of trees and fruits, etc.

#### 4. Change in the amount of water in sources in the past ten years

There were various participants responding the change factors to increase in water sources in the regions. They demonstrated the amount of increase in the regions with evidences. The increase in water has been in growing trend as shown in Figure 4.

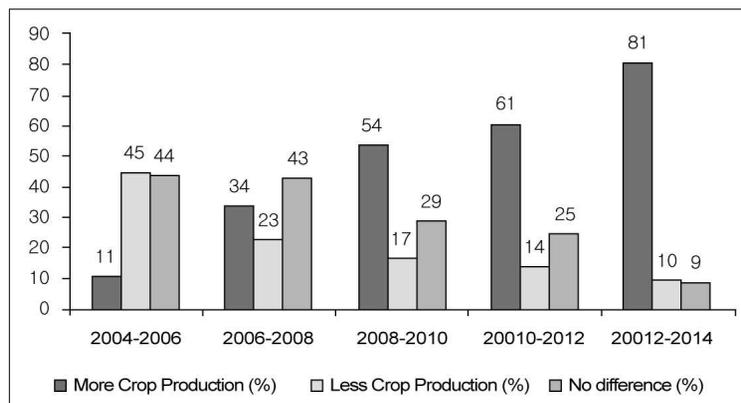
Figure 4. Amount of water in sources of water in the interval of ten years



Amount of water in sources of water from 10 years ago to present was found with increasing trend. Out of 381 participants, 206 participants that are 54% said that there used to be less amount of water in sources of water. Similarly, 63 participants that are 16.5% said it has become more and remaining 67 participants that are 17.5% said that there is no any difference and remaining did not respond clearly.

The views of participants, about the quantity of crop production in the interval of past ten years are shown in Figure 5. Out of 381 participants, 45% realized that there was decrease in production and 44% responded for no change during 2004-2006. Similarly, 43% responded that during 2006-2008, there were no change in increase in production but 34 realized that there was increase in production. However, because of forest conservation, in 2008-2010, 54% realized that there was increase in crop production in the region which was supported by 61% during 2010-2012. In 2012-2014 and in current year, 81% agreed that there was increase in crop production where one of the regions may be conservation of forest in the sample areas.

Figure 5. The quantity of crop production in the interval of ten years



The view of participants about the number of livestock keeping in the interval of last ten years, are shown in Table 7. Out of 381 participants 45% realized that there was no difference in keeping live stocks and at the same time 43% rated decrease of live stocks during 2004-2006. Meanwhile in 2006-2008, 43% rated constant number of live stocks and 33% realized increase in live stocks in their houses. Similarly, 52% participants said that there was increase in livestock during 2008-2010 which was supported by 59% in 2010-2012 and 79% in 2012-2014. There seemed increasing trend of livestock in past ten years which was decreasing in the beginning.

Table 7. The number of livestock keeping in the interval of ten years

Interval of time	More Livestock (%)	Less Livestock (%)	No difference (%)
2004-2006	12	43	45
2006-2008	33	24	43
2008-2010	52	18	30
2010-2012	59	15	26
2012-2014	79	11	10

Source: Field survey (2015)

Table 8. The reasons for increased crop production

S.N	Reasons for increased production	No. of Participants	Percentage
1	Use of Fertilizers and pesticide	34	9
2	Use of high quality seeds	24	6
3	Proper irrigation	56	15
4	Suitable climate	73	19
5	All of the above	194	51
Total		381	100

Source: Field survey (2015)

The significant growth in the volume of crop production has been one of the symptoms of forest conservation, and balance of environment. The influence of the forest conservation has made proper irrigation, and favorable climate for crop production into the areas as people rated in majority. Out of 381 participants, 73 participants that are 19% said that there is increase in the production of crops due to suitable climate and 56 participants, i.e., 15% realized that there is proper irrigation that helped to increase the crop production. Majority people, 51% realized that the combined effect of fertilizer use, use of pesticides, use of high quality seeds, proper irrigation and suitable climate made it possible to increase in the volume of crop produced to increase.

### 5. Alleviation of poverty of Dalit, marginal, and excluded

One of the major contributions of community forest management through CFUG is that there is improvement in the poverty alleviation and increase in economic level of ultra poor in the areas.

Table 9. The poverty alleviation strategy to excluded and poor people

S.N	Strategies	No. of participation	Participation (%)
1	Forming the CFUG	129	34
2	Forming cooperatives	62	16
3	Participating excluded in CFUG	107	28
4	Utilizing agro forestry practice	56	15
5	Others	27	7
	Total	381	100

Source: Field survey (2015)

The people living and involving in CFUG identified different possibilities of strategies used in managing forest resource in order to alleviate poverty so that the excluded and ultra poor get maximum benefit for their economic growth. Out of 381 participants, 34% with majority of the participants said that forming CFUG with inclusion rights is the best way of alleviating poverty. Similarly, 28% people demanded the effective strategy is the reservation of excluded in the CFUG. However, 16% participants also showed that there is the effective action plan to alleviate the poverty by increasing the speed of present co-operative movement and in the same way 15% participants also rated that utilization of agro forestry practice has also contributed to alleviate poverty. Remaining 27 participants that are 7% said that there are other programs like poverty alleviation fund; NGOs/INGOs, etc. addressing the increase in income.

### 6. Emerging themes from the field

Having a pro-poor concept within the framework of forestry development is noteworthy. Pro-poor leasehold forestry has also opened an avenue for other programmes to rethink on their existing modalities to develop pro-poor strategies within their programmes. One-time policy formulation is not enough; it requires continuous revisits and amendments to make policies and programmes more workable in local conditions. The practical lessons gained from the implementation of policies and programmes are important bases for the policy

formulation and programme design. For instance, the apparent notion of allocating degraded forest land to the poor might not contribute to reducing the level of poverty as expected as it can offer limited products and services to poor households.

## **7. Reform through forest resource in poverty alleviation**

The focus group discussion on the issue of poverty alleviation, was organized on the sample areas with the different stakeholders. The view of participants, about the suggestions to reform the present community forest management system as a basic platform of poverty alleviation has been summarized as:

1. There is need of the educational support for children.
2. The support for family health insurance, livestock insurance and crops insurance, etc. was demanded to have immediate intervention.
3. It has been realized that the identity card for purchasing daily required materials with cheapest price through the CFUG office for economic support and income generation.
4. Provision of the subsidy for community forest management.
5. Provision of the facility of registration of forest groups and cooperatives in local level without any problem.
6. Making the rule of registration of members with reservation of excluded ones in key posts.

## **8. Sustainable livelihood of poor and excluded**

The participants realized that the livelihood of poor and excluded has been a relief when the community forest management has been practiced. The view of participants, about the ways for sustainable livelihood of poor and excluded people by protecting from adverse impact of climate change has been summarized as:

1. Conservation of forest by using the alternative resources of cooking like electricity, bio gas solar energy, etc.
2. Adoption of the modern technology on agriculture sectors according to changing climate.
3. Focus on fruit farming, ever green farming, biannual plants like cardamom, tea, Kibi, herbals, etc.
4. Control of the deforestation and support for reforestation and afforestation through the governmental and non-governmental sectors.
5. Model irrigation system required in farming area as a 'irrigation is the right of land'
6. Alternative crops should be referred to farmers according to changing climate.
7. Support to farmers by providing the best quality of plastics for tunnel house in the vegetables field, herbals, etc.
8. Provision of attractive package to people through the government or non-government offices for planting at least five to ten plants in each and every house.
9. Inclusive and participatory provision of CFUG rule of community forest in favor of poor and excluded people.
10. Support of the awareness programs about the climate change and possible sustainable programs to withstand climate change.
11. Focus on alternative additional professions like farming, trade, handcrafts, animals keeping, bee keeping, silk keeping etc.

## 9. Options for new organizational poverty alleviation models

Good practices in the different communities needed to be replicated for the welfare of the ultra-poor so that they could get economic benefits from the community forest. The view of participants, about the options for any organizational poverty alleviation models has been summarized based on the focus group discussion results from the participants as follows:

1. Establishment of nationwide network of Poverty Alleviation Fund working in local levels like VDC and municipality for mobilizing fund for the well management of forest and local resources.
2. Use of co-operative in different sectors for poverty alleviation, and thus different programs applying from governmental and non-governmental sectors.
3. Use of the 'cost of carbon' for poverty alleviation program which comes from rich and industrial countries.
4. Investment by governmental and non-governmental sectors in income generating areas and solving the problem of employment.
5. Encouragement to the poor people in production sectors by the governmental and non-governmental support.

## 10. Alternatives for poverty alleviation

The use of the fund generated forest resources as the carbon sequestration has been one of the major means and ends in poverty alleviation from the grass root level. The participants demonstrated their views and came into the following conclusion during the focus group discussion are illustrated as follows:

1. The best key factor for poverty alleviation has been good governance and thus needed to be governed fully in local level.
2. Developing short term and long term strategies for alleviating poverty through CFUG in the targeted areas where human development index is very low.
3. Priority to mobilize the funds of development partners in the areas of community forest management and alleviation of poverty as alternative means for development.
4. Private, public and community partnership in managing and utilizing forest resources.

Based on the rise and pitfalls of the different community forest user groups during the discussion in the communities, people demonstrated their experiences about the things what works better and what does not in general. They demanded the need of codification and replication in other similar situation throughout the country.

## 11. Move towards agro-forestry

The cohesive among the diversity, people do not have differences in their social phenomenon. They helped each other during the natural as well as human made disaster. Among the diversity there is uniformity in environment related activities. The perception towards forest conservation and environmental sanitation among different ethnicity, found less in aware in Muslim and Dalit communities. The multi sectoral intervention on the improvement of forest conservation practices was felt needed in the sample districts. The forest sector,

agriculture and education were reported more complementary for the improvement of agro forestry in the CFUG for livelihood improvement.

## **12. Cultivation of medicinal herbs**

The community forests were found safe in case of growing medicinal herbs that grow wild in the forests of different locations. The community people were trained to plant the herbal medicinal plants to make community forest group's income and use it for forest conservation management. They were found mostly in Dolakha, Sindhupalchowk, Baglung, Parbat, Lalitpur and Kaski. The possibility of water sources regeneration is more and the areas were found environmentally safe in Bara and Rautahat. They had prepared their constitution for handling forest products to manage for their livelihood improvement. The furniture and other products used in the household purposes were not maintained properly. The nongovernmental organizations were involved to intervene for the maintenance and management of governance principles in the community through the drill and simulation of activities.

## **13. Within, without and beyond the community forestry**

The people from the areas of sample CFUG have managed eco-tourism practices in their areas. Home stay has been established to protect homely environment and preserving culture. They have placed different products for sale made from the forest resources. Their physical environment for healthful living was environment friendly. The landscape of the community forest in these districts was found in natural environment. The resorts were developed in some places but most of the lands were used for the forest conservation. The watering facilities were sufficient and children in the school reported that they get more access on the drinking water and water for cleaning toilets nowadays.

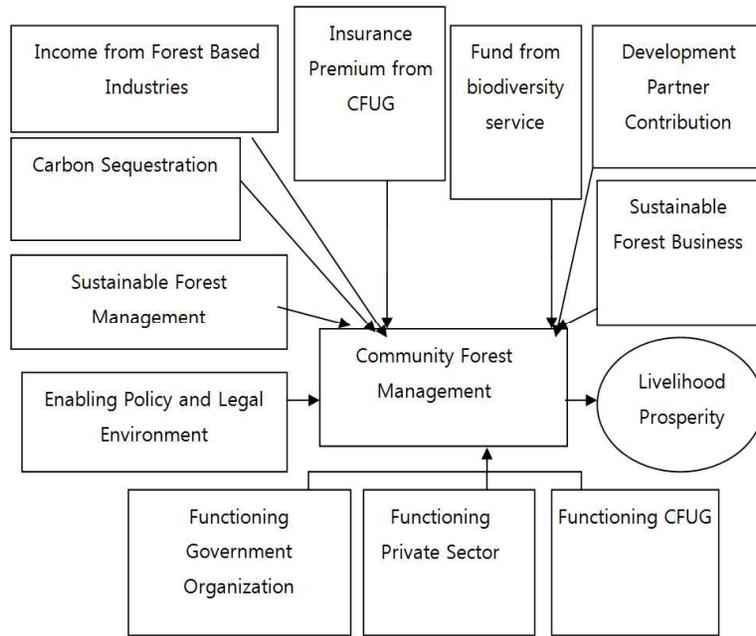
People of sample forest user groups invested on socio-economic activities and for welfare schemes. There is a strong association between health facility delivery, children's education, and wealth quintile. About the basic care of students' knowledge increased based on level of education.

People were found more knowledgeable, practicing good behaviour, and positive thinking about the health, health service and the service providers. They have started the industries which use raw materials from forest. It has increased the preservation of cottage industries and preservation of traditional arts and crafts. The indigenous knowledge has been preserved through forest conservation practices.

## **14. The knowledge contribution**

The study has made a contribution to the field of community forestry focusing on improvement on livelihood condition of ultra poor. The study confirmed pointing out that there is the synergic effect due to the combination of forest resource conservation, behavioral change and natural resource regeneration.

Figure 6. Livelihood prosperity through



## 15. Community forest management

The design framework addressed issues of community forestry covering status of the community, livelihood and utility of the forest products. The study has confirmed that people have been empowered to engage confidently with different aspects of community forestry including forest specific and livelihood sensitive factors. In conclusion, there is extreme need of considering the strengths of forest management and its product utility to be addressed while making improvement in promotional, preventive, transformative and curative community forestry management for livelihood improvement.

## 16. Conclusion

The forest resource materials and their distribution to community members were applicable to help understand the balance need of environmental factors. The management of resources from forests in diverse perspectives made it possible for them to understand the practice better. The incorporation of different practice models together with the resources offered community members the opportunity to consider the ways from different points of view for improving livelihood. The community members confirmed that they used the resource materials to enable them to solve practical problems in the improved livelihood. The findings suggested that managing forest resources from the diverse points of view engaged community members in optimum use of resources and enriched their knowledge. Most significantly, several congruencies emerged between those themes and others, that is, community forest management perspectives and livelihood improvement principles, respectively. The integrated management principles (optimization of resources, participatory management and

livelihood Improvement) determined the extent to which the community management concepts were successful. It was found that, to a large extent, the implementations of the community empowerment strategies were in line with the management framework derived from the principles generated in the theoretical framework.

The field notes recorded from the participants' interpretation of the existing situation demonstrated that the resources mobilization was a motivating and interesting way of livelihood improvement. The members were happy and motivated after their involvement of forest resources themselves in sustainable manner. Managing forest resources through community participation engaged people in maintaining their life more comfortable and enriched their knowledge through theoretical models.

## 17. Implications

The focus of the study was on community forest management and its enabling impact in livelihood improvement effectively. The concise integrated model is helpful to document the successful experiences to construct their understanding of concepts to be implemented for sustained future.

1. There are certain philosophical implications to the way one entertains livelihood practice. These philosophical implications do indeed lead to good practices in the CFUG members' community involvement in forest management. Resource management and empowerment models, group involvement using cooperative strategies, active involvement (hands-on - heads-on), integration of livelihood component, interaction, and reflection, and flexibility of the members in both learning and management strategies are notable.
2. The practice emphasizes high-quality examples and representations of community roles, high levels of members' interaction, and leader connected to the real world.
3. Another implication of the findings is to include more empowerment strategies to give facilitators and development activists an intense opportunity to examine local situation of the CFUG.
4. Leaders and community members accept community forest as their own area. The techniques and methods involve encouragement of members' direct involvement through discussion, group-work, members' presentation, debates, simulations, brainstorming and individual study. Leader accepts individual differences, and encourages for higher level thinking.
5. Members should be made responsible individual to be autonomous player in the CFUG. Learned lessons and good practices should be evaluated and replicated.
6. Another implication of this study is to apply different CFUG practices. From the findings, it can be seen that not all the CFUG members were successful in improving livelihood.
7. This approach of forest management is a guideline for the vocational and technical educators to adapt the skills and technology based on the available forest resources and localization of technology.
8. The local government actors can play the important role in developing a suitable environment for CFUG management. They have to consider the facilitation of government policies and programs in line with community forest management preferences so as to increase the role of government actors and prepare the module for the training and program evaluation.
9. The community leaders must understand the commitment level necessary for the creation of participatory environment and show willingness for its practice.
10. Policy makers must realize the impact of policy decisions on successful implementation of flexible contextualized model of community forest management, well balanced ecological environment and improvement of livelihood in the community.

This research has attempted to contribute to a theoretical understanding of community forest management and lead to a refinement of the good practices and the design. It would be valuable to be able to make a claim about acceptance and efficiency of the findings of the research if further researches produce evidence of the value of the design framework in similar situations. There needs to be more research conducted in the field of CFUG and the community members' understanding of forest use and livelihood improvement in Nepal.

## References

- Adhikari, B. (2004). Community forestry in Nepal: management rules and distribution of benefits. *South Asian Network for Development and Environmental Economics (SANDEE) Policy Brief*. Number 1-04.
- Babbie, E. (1990). *Survey Research Method*. (2nd Edition). California, US: Wordsworth Publishing Company.
- Bhattarai, B. and Ojha, H. R. (2001). *Distributional Impact of Community Forestry: Who is Benefiting from Nepal's Community Forests?* 68-76, Forest Action, Kathmandu.
- Chapagain, N., Kafle, G. and Nirmal, B.K. (2009). *Well-being and National Poverty Benchmark: Existing Status and Achievements, and Experience from Koshi Hills*. Kathmandu.
- Gilmour, D. A. and Fisher R. J.(1991). *Villagers, Forest and Foresters: The Philosophy, Process and Practice of Community Forestry in Nepal*. Kathmandu: Sahayogi Press.
- Giri, K. and Ojha, H. (2010). Enhancing livelihoods from community forestry in Nepal: can technobureaucratic behaviour allow innovation systems to work?, *9th European IFSA Symposium*, 4-7 July 2010, Vienna, Austria.
- MoF (2015) *Economic Survey (2014-15)*. Ministry of Finance (MoF), Government of Nepal. [replace FSMP, Forest Sector Master Plan (2013). Department of Forestry. Ministry of Forest and Soil Conservation. The Author, 2013.]
- Pandey, D. (1999). *Nepal's Failed Development: Reflection on the Mission and Melodies*. Kathmandu: Nepal South Asia Centre.
- Pant, P. R. and Wolf, H. K. (2003). *Social Science Research and Thesis Writing* (3<sup>rd</sup> edn.), Kathmandu. Buddha Academic Enterprises.
- Parajuli, R., Pokharel, R. K. and Lamichhane, D. (2010). Social discrimination in community forestry: socio-economic and gender perspectives. *Banko Jankari*, 20(2), 26-33.
- Pokharel, B. K. and Paudel, D. (2005). Impacts of armed conflicts on community forest user groups in Nepal: can community forestry survive and contribute to peace building at local level? *European Tropical Forest Research Network*, 43(44), 83-86.
- Upreti, D. R. (2007). Community forestry, rural livelihoods and conflict: A case study of Community Forest Users' Groups in Nepal. Guthmann-Peterson Wien (Austria), Retrieved from <http://agris.fao.org/agris-search/search.do?recordID=XF2015012499>