Role of Lamjithang community forestry towards quality of life of the local people

Bhagat Suberi*, Sittipong Dilokwanich, and Nathsuda Pumijumnong

Faculty of Environment and Resource Studies, Mahidol University, Nakhon Pathom 73170, Thailand

Abstract

This study was conducted to find out the role of community forest for supporting the quality of life of the local people. The objectives of this study were to investigate pattern of use of forest and non-forest products from community forest supporting quality of life of local people and to analyze roles and responsibilities of the people in managing Lamjithang community forest at Rinchengang village. Total of 86 households were registered for the management and use of forest product. All 86 households were interviewed during the data collection, thus the method used was census. Questionnaires for household interview, checklist questions for key informant interview were developed. The data were analyzed by applying descriptive statistics. It was found that pattern of use of timber products such as timber and poles were mainly used for construction and maintenance purpose. Out of 86 households, 60.5% used timber for construction and 38.8% used for maintenance work. In case of poles, almost equal number of households (50%) used for constructional and maintenance works. It was also found people used timber product from the government reserved forest because there are not enough matured trees for the constructional purpose at the moment. Households used non- timber product for consumption and sale if excess after domestic use. For non-timber product 79.1% of households collect firewood, 20.9% collect fern for domestic purpose and 2.3% sale, 41.2% use asparagus for domestic purpose and 3.5% sale and 74.4% use for domestic purpose and 8.1% sale and 30.2% collect bedding material for domestic purpose only. The products they sale was for the extra income for the household to support the quality of life. Besides income from non-timber forest product, people also generate income from agricultural activities and livestock rearing.

Key Words: Community forest/Forest Management/ forest product/quality of life

1. Introduction

Bhutan has preserved a good amount of forest through people's participation in protection. Bhutan has a total of 72 percent of land under forest at present and aim to ensure that at least 60 percent of the land will remain under forest cover in times to come, while at the same time improve the livelihoods of the rural communities who depend on this resource. The country's forest resource has been valuable resources as a means to support rural livelihood supplying basic needs (Temphel and Beukeboom, 2006).

Rural people in Bhutan live in the vicinity of the forest and rely on forest resources for their basic needs. Goods and services they receive from the forest are, such as fire wood, construction materials, fodder for livestock, food, medicine, leaf litter (used as bedding for cattle), water for domestic use and irrigation. Management and use of forest resources is regulated by the Department of Forest (DoF) before the development of concept of community forest in Bhutan, where authority lies with Department of Forest to manage and control the use of forest product (Phuntsho and Sangye, 2006).

* Corresponding author.
E-mail address: bsubberi@yahoo.com

Realizing the importance of forest in supporting rural livelihood, the government started community forestry program with an objective to fulfill the basic needs of the local people.

The Royal Government of Bhutan felt that local people who are the forest users can also be the forest resource manager and the implementer. The first community forest was established during 1997 and only during the year 2000 it has been fully recognized as community forest according to the 2000 forest and nature conservation rules (Wangdi and Tshering, 2006). Currently there are 131 community forests managed by the local community forest management groups, the 6,608 households manage 16,379 hectares of national forest till date (Temphel, 2009). The quality of life in the community forest in the study area is low and characterized by small landholding with low income and low education level.

The link between quality of life and community forest income has not been explored. The type of forest in the study area is temperate coniferous where, no much of the vegetation underneath is allowed due to the nature of the dominant species and acidity soil. Therefore this study will try to investigate the community forest contributing to the quality of life of the local people. In addition, this is the only grown up natural forest in the district as a community forest which has a potential for study to be carried out. Where else other community forests are more degraded and some are only of plantation nature. Moreover, only few or no research had been carried out to look at the contribution of community forestry towards the people's quality of life, hence the significance of this research is felt necessary to find out the relationship between the community forest and the quality of life of the local people.

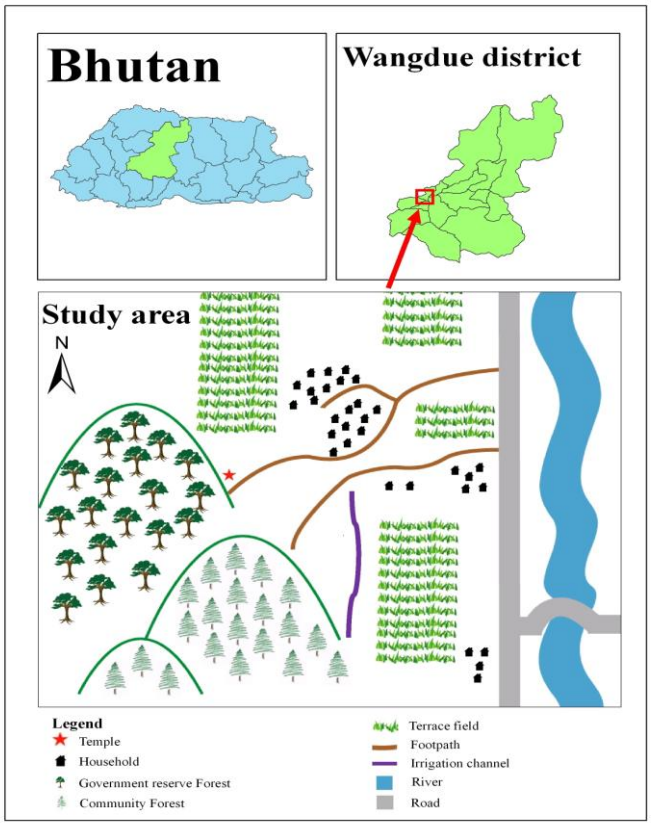

Figure 1: sketch map showing village, study site and physical barriers

2. Study area

The study area (Fig.1) is at Rinchengang village under Wangdue district in western part of Bhutan. Community forest lies towards the south of the village at the distance of approximately 2 kilometer. The forest composition mainly comprises of *Pinus roxburgii* species as dominant. The topography of the site is undulating with gradual to steep slope. All the management activities and protection of the forest lies on the communities of the village. Similarly like community forest, there is government reserved forest also within the vicinity of the local people which lies towards the west of the village. Government reserved forest is managed and looked after by the local forest office. It is located at a distance of approximately 5 km from the village. Before the establishment of the community forest local people relied on government reserved forest for various products for their daily needs such timber and non-timber products. The timbers are mainly used for construction and maintenance purposes. Non-timber products such as mushroom, ferns and asparagus are used as vegetables for daily consumption. Before the community forest came up people had to obtain the permit from the local forest office to extract forest products and it was a very long process. Moreover they had to travel long distance to collect the forest product from the government reserved forest and accept the rules and regulation set by the government for use of forest products for different purpose.

However in 2003, people expressed interest and propose to their local government for a need to establish community forest. The local government approved the proposal and new community forest was established in 2004 within the vicinity of the village. Since then, this community forest was managed by the community with technical support from local forest office and need no special permit from the local forest office.

3. Methods

3.1 Target population

All the 86 households were selected as the respondent for the questionnaire survey. Therefore, the survey carried out was census. Three executive members namely, head of the village; chairman and secretary of the community forest user group were selected as key informant for the in-depth interview. From Department of Forest two central forest officials and two district officials were selected for in-depth interview. One official from donor agency was also interviewed.

3.2 Data collection

Data were collected through household interview, key informant interview and through secondary data. Methodology and data collection tools were reviewed and approved by MU-RIB (Mahidol University Review and Institutional Board). Data collection were; Socio-economic data, data on pattern of use of forest products and data on roles and responsibility of the local people in managing community forest. Structured questionnaire was used for the household survey and checklist questions for in-depth interview.

3.3 Data analysis

The socio-economic status, pattern of use of forest product and roles and responsibility of the local people in managing community forest of the 86 households were analyzed by using descriptive statistics. Microsoft excel version 2007 and Statistical package for Social Survey (SPSS) version 15 were used for data analysis.

Quality of life of the local people was evaluated from the use of timber product and non-timber products and for sale, if, found excess from the community forest they were managing. The quantity of timber and non-timber products used by the households for different purpose are explained under the heading **"4.2 Pattern of use of forest product**" and the **"5. Quality of life"**. Quality of life of the local people was looked from the different parameters such as health, education, food, income and shelter and evaluated categorizing into high, medium and low. The different criterion are set after the collection of data to foreseen the level of quality of life of the local people through the use of forest product from the community forest as explained in **Table 9 "Degree of quality of life through five parameters".**

4. Result and discussion

The result and discussion are based on the actual finding from the data collected and are explained as below:

4.1 Socio-economic status of the respondents

The socio-economic status of the respondent is presented below.

Socio-economic characteristic of the community forest user group, such as gender, age, and occupation are described as to find out the current status of the household in various aspects like land ownership, number of livestock raised and the type of agricultural activities they had practiced, which is very crucial in supporting quality of life of the rural people.

The village has the total population of 420. Out of the total population, 31 are small children, 102 were student out of which 47 were male and 55 were female or 46% and 54% respectively. Those children younger than 6 years were not enrolled in schools. As per the government requirement, a child must attain at least six years of age to be eligible to get enrolled into public schools. However there is no age limit in the private school.

Apart from the population aged less than 10 years old, there were 252 farmers, who were 125 males and 127 females or it is 50% each. Only 15 members (6%) of the total farmer's population had education background, where 11 had primary level of education, 3 had junior high school level of education and 1 had high school level of education. The rest of 237 members (94%) were illiterate. This clearly indicates that the average educational level of all members is very low. This would hinder the forest development intervention and technology transfer for wise use and management of forest resources as their level of understanding is certainly low.

Out of 10 government employee, 7 were males and 3 were females, which constitute 70% and 30% respectively. Out of the 7 males 4 had college level of education and 3 did not have any educational background. Where else all the 3 females had college level of education. The people working as government employee were mainly teachers and military.

Out of 7 businessmen, all are found to be male where 4 have the junior high school level of education and 3 of them have primary level of education which constitutes 57% and 43% respectively. Carpenters constitute of 18 numbers, who are all men.

When we focus on agriculture in Rinchengang village, the residents had 100 hectares for different activities. Each household had agricultural landholding in the range of 0.5-2.0 hectare or on the average of 1 hectare. The household who owns a land had single landholding, where they practice various agriculture activities alternatively.

Focusing on farming, local people start first paddy during May and harvest in August and simultaneously start second paddy plantation in August. After the harvest of second paddy during the month of November they cultivate wheat and after the wheat is being harvested during the month of February they go for chili cultivation. They harvest the chili from May to June and start paddy cultivation again. Those people who cultivate chili do not practice double cropping of paddy (Table 1).

Table 1: Calendar of three major crops in Rinchengang village

Activities	Months											
	J	F	M	A	M	J	J	A	S	O	N	D
1st Paddy transplantation					↔							
Paddy harvesting								↔				
2n Paddy transplantation								↔				
Paddy harvest											↔	
Wheat plantation												↔
Wheat harvest		↔										
Chili plantation				↔								
Chili harvest					↔							

The total numbers of livestock reared by the communities were 247 which constitute 101 cows, 112 bulls, and 34 pigs. The livestock products produced by the village are milk, butter, cheese, and pork.

Table 2: Calendar of timber and non-timber collection in Lamjithang community forest

Activities	Months											
	J	F	M	A	M	J	J	A	S	O	N	D
Timber										↔	↔	↔
Fire wood	↔	↔										
Mushroom							↔	↔				
Asparagus				↔	↔							
Fern	↔	↔	↔									↔
Leaf litter	↔	↔										

Besides the agricultural and livestock activities carried out by the people of Rinchengang village, they also have other activities in the community forest such as extraction of timber product and non-timber products (Table 2). Timber, firewood, asparagus, ferns and leaf litter are collected during winter months.

Most of the member of the community are self-sufficient and do not depend on market. The bulls can also be rented out to nearby people either in the form of cash or labour. The maximum amount acquired was Nu. 750 and the minimum was Nu. 200 (US1$ = Nu. 45).

Timber such as timber and poles are extracted mainly by males in the month of October to December. Other non-timber product such as firewood is collected in January and February, mushroom in July and August, asparagus in the month of April and May, fern from January to March and leaf litter in the months of January and February. Obviously and non-timber products are usually collected by the females. Leaf litter collected are used as bedding for the cattle and later

used as a fertilizer or compost in the agriculture field.

Income from Agriculture production

The people of Rinchengang village practice various agriculture activities such as cultivation of paddy, chili and wheat. The quantity produced was consumed at the household level and sold to the nearby market, if excess. Table 3 below shows the quantity produced from the agriculture field and it also shows the amount consumed and sold for extract income to raise the quality of life of the local people.

Agriculture activities carried out by the each household. The different agricultural activities practiced by the household were cultivation of rice, wheat, and vegetables. From the 86 household, 3(4.5%) household do not have paddy field, 83(95.5%) do not grow wheat and 63 (73.3%) do not grow vegetables. Table 1 show that 82 household (95.5%) consumes the rice and 31 household (36%) also sell the rice beside consumption.

Table: 3 Agriculture activities carried out by households

Variables	N	Percent	Max	Min
Agriculture(kg)				
Rice (Yes)	83	**95.5**	1500	50
Non cultivator	3	4.5		
Consumption-yes	83	95.5	1000	50
No cultivators	3	3.5		
Sell-yes	31	36	1000	40
No sell	55	64		
Value	31	36	22500	1800
Wheat-yes	4	**4.7**	20	10
No cultivator	82	95.3		
Vegetable-yes	23	**26.7**	50	5
Consumption	23	26.7	50	5
Non cultivators	63	73.3		
sell	14	16.3	40	10
No sell	72	83.7		
Value	14	16.3	2400	600

Only 23 household, that's 26.7% grow vegetable (chilli) which is for both household consumption and sell. The 16.35% or the 14 household sell vegetable product which fetches Nu.2,400 at the maximum. The highest amount of income of agricultural products incurred from the rice was Nu. 22,500

People in the village reared different kinds of animals for their daily usage for various purposes. The highest percentage of household that rear Oxen comes to 66.3% followed by cow and a pig with a percentage of 59.3% and 31.4% respectively. Cows and pigs were reared for the purpose of domestic use only. The products they obtain from rearing cow were such as milk, butter and cheese which are used for domestic purpose and they do not have to depend on market. Where else the oxen were used by the owner for their own purposes as well as they give on rent basis to those who do not own the Oxen. The highest amount they fetched through rent of oxen comes to Nu. 750.00 per day which is an additional income. The overall income incurred through sale of agricultural products, livestock and non-timber products was Nu. 519,560.00.

4.2 Pattern of use of forest product

4.2.1 Forest product

Local people depend on timber product for construction of new house and maintenance.

Table 4: Use pattern of timber product from two forests

Products	Community forest	Government-reserved forest	Total
Timber (M^3)	415	226	641
Poles (M^3)	310	183	483

The highest percentage of households that use timber for constructional purpose was 60 % and about 40% for maintenance. In comparison to timber used, 50% of the households use poles for constructional and maintenance work. Similarly, there were households that did not use the timber product for the constructional and maintenance purposes.

They use timber for agriculture tools like handles for the agricultural tool and making of plough and yoke which is used to plough the paddy field. The total quantity of timber product used was 725 m^3 and 409 m^3 from community forest and government reserved forest respectively (Table 4). Non-timber products are the main source of income for the poor. They collect the products from the forest for their own consumption and if excess, sale in the nearby market for their additional income. Local people do not sell any of the timber products like timber and poles but sell non-timber products for income. The total amount of income from the sale of non-timber product was found to be Nu.7,160.00 from the community forest.

Table 4 above shows that the total of 415 m^3 and 226m^3 of timber was used by the community for construction and maintenance work from community forest and government reserved forest respectively. Likewise 310m^3 and 183m^3 of poles used for from community forest and government reserved forest respectively for construction and maintenance work.

Table 5: Use pattern of non-timber product from two forests

Products	Community forest	Government-reserved forest	Total
Firewood (kg)	5745	5120	10,865
Fern (kg)	79	125	204
Asparagus (kg)	92	109	201
Mushroom (kg)	473	488	961
Bedding material (kg)	1420	1167	2,587

Besides agriculture and livestock practices by the people of Rinchengang communities, people also collected mushroom, asparagus and ferns from the community forest as supplementary food products. It was found that, the collection of non-timber product from community forest contributes to their additional income for the household. The highest amount of non-timber product collected was mushroom (473 kg), asparagus, (92 kg) and fern, (79 kg). Of the total mushroom collected, 421 kg of mushroom are consumed and about 62 kg are sold in market fetching 6,200 Ngultrum.

Table 6: Quantity of timber product used by different occupational group.

Timber product (m^3)	Farmer	Business	Govt. service	Carpenter	Total
Government forest					
• Firewood	5120	-	-	-	5120
• Fern	125	-	-	-	125
• Asparagus	109	-	-	-	109
• Mushroom	488	-	-	-	488
• Bedding material	1167	-	-	-	1167
Community forest					
• Timber	415	-	-	-	415
• Poles	310	-	-	-	310
Government forest					
• Timber	226	-	-	-	226
• Poles	138	-	-	-	138
Non-timber product (kg)					
Community forest					
• Firewood	5745	-	-	-	5745
• Fern	79	-	-	-	79
• Asparagus	92	-	-	-	92
• Mushroom	473	-	-	-	473
• Bedding material	1420	-	-	-	1420

Of the total asparagus collected, 74 kg are consumed and 18 kg are sold in market fetching 720 Ngultrum and of the total ferns collected, 66 kg are consumed and 12 kg are sold in market fetching 240 Ngultrum. Usually local people dry the non-timber products and preserve it especially the mushroom. This can be used during the off season. The total amount of income incurred from the sale of non-timber product was 7,160 Ngultrum only. The overall income incurred through sale of agricultural products, livestock and non-timber products from community forest was 519,560 Ngultrum.

Table 6 shows the timber used by the different occupational group from the community forest. The interview was conducted with the head of the household and all the head of the household was found to be farmer. Therefore, the quantities of forest product used were the from farmers group only. Those who have the occupation like business, government servant and the carpenters are the members of the households. The overall timber and poles used by the household from both the community forest and government forest was 641m^3 and 483m^3 respectively and the total of 14,818 kg of non-timber product was collected from community forest and government forest.

4.3 Roles and responsibility of local people in managing community forest

The Table (7) below shows the different roles and responsibilities taken up by the local people on various activities in order to promote the productivity of the community forest which is very crucial for the local people to get the required quantity of forest product to raise the quality of life of the people.

Table 7: Roles and responsibility of people in managing forest (2004-2008)

Activities	Time for execution	Number of times/year	Total in 5 years	Remarks
Weeding	summer	1	5	All the 86 household
Refilling	summer	1	5	were engaged in
Survival rate	winter	1	5	different activities
Patrolling	winter/summer	12	60	
Regeneration	winter	1	5	
Slash/debris	winter	1	5	
Fallen trees	winter	1	5	
Dead trees	winter	1	5	
Maintenance	winter	1	5	

The roles and responsibilities of the each household in managing community forest through different activities. The various activities carried out by the household were weeding, refilling, ensuring survival rate, patrolling, promoting natural regeneration, removal of slash/debris, removable of fallen and dead tree, and maintenance of fire line. It was found out all households were responsible for the management and were engaged in all the activities. All the household were engaged once a year to carry out the activities for the betterment of the community forest and for patrolling

all year round. Therefore patrolling is carried every month of the year.

According to the Paudel and Vogel (2007); DoF (2004b), the role of forest user group is to manage the forest in a sustainable manner so that it ensures the need of the people in a long term, ensure equity, carry out the management of the forest as per the operational plan such as thinning for improvement of the growth rate and diameter of remaining trees; managing regeneration as to replace the harvested trees or to improve forest which is already degraded species; cleaning and weeding for improvement of the forest condition. Similarly, in Lamjithang community forest people are engaged in various activities such thinning, enrichment plantation to replace harvested timber and afforestation work on barren land for the betterment of the community forest which would contribute to enhance the better quality of life of the local people.

5. Quality of life

Quality of life is expressed as existing health treatment, education level, food consumption, over all income situation, and shelter. According to Pokharel and Nurse (2004) quality of life is the person's means of support in a way he/she earns income from community forest to meet the basic amenities of their life.

Regarding the health, the Royal Government of Bhutan has adopted primary and integrated health care system. Every individual from the village go the hospital for every treatment for the sickness. Interestingly, they reported that they do not have knowledge of medicinal value of forest product for self treatment.

Table 8 below focuses the amount of money saved by the household to raise the quality of life from the community forest on the parameters of health, education, food, income and shelter. The criteria used to measure the amount saved are used as no money saved, saved less than 50 Ngultrum, saved between 50 to 100 Ngultrum, and saved more than 100 Ngultrum. In case of health status of the households, the amount of money saved for not going to hospital is found to be nil since every households visit the government hospital for their treatment and do not collect any kind of medicinal plants from the community forest for the treatment of sickness.

Table 8: Amount of money saved to raise quality of life in Rinchengang village

Parameters	No money saved	Saved less than Nu.50	Saved between Nu. 50-100	Saved more than Nu.100
Health	✓	-	-	-
Education	-	-	-	✓
Food	-	-	-	✓
Income	-	-	-	✓
Shelter	-	-	-	✓

Regarding the forest education local people can save more than 100 Ngultrum because all the training acquired by the household are provided free of cost by the government as a technical support to enhance the knowledge of the local people in managing the community forest.

In respect to food and income derived by the households from community forest they saved more than 100 Ngultrum since it was found that people were consuming quantity of food which cost more than 100 Ngultrum in the market.

As far as the income is concerned, the amount of money saved was found to be more than 100 Ngultrum because they were saving more than that from the sale of non-timber products such as mushroom, fern and asparagus from the community forest.

Regarding the shelter or the housing status of the households, people can save more than 100 Ngultrum because all of them have their own houses and need not to pay for the house, and it was found that members living together were in the process of constructing more houses to live in.

Table 9: Degree of quality of life through five parameters

Parameters	High	Medium	Low	Remarks
Health	-	-	✓	-
Education	✓	-	-	-
Food	-	-	✓	-
Income	-	-	✓	-
Shelter	-	✓	-	-

Note:
1. If the household collect medicinal plant above70 kg, it is high. If it is between 40 to 69 kg it is moderate/medium and if it is below 40 kg then it is low
2. If all the households have the attended the training on forest education, it is high. If it is 50%, it is medium/moderate and below 50% is low.
3. If the amount of food collected by the household is more than 70 kg, it is high. If it is between 40 to 69 kg it is moderate/medium and if it is below 40 kg then it is low
4. If the income from sale of forest product is more than Nu. 700, it is high. If it is between Nu. 400 and Nu.700, it is medium/moderate and if it is less Nu. 400, it is low.
5. If the household can use more than $5m^3$ of timber for construction from community forest, it is high. If it is 3 to $5m^3$, its medium/moderate and if it is less than $3m^3$, it is low.

As shown in Table 9, quality of life of the local people in respect to health status through use of medicinal plant from community forest is found to be low because none of the 86 households made use of it for the purpose of curing sickness. Although elderly people did not have the formal education but they have the forest education, which was gained during the training provided by the government from time to time and the knowledge and the skill they had were utilized during the management of the forest. Therefore, the level of forest education among the people was found to be high.

Regarding the quality of life of the people through food and income generated from community forest, it was found to be moderate on food and low in case of income generated. The amount of food collected by the households from the community forest was found between 40 to 69 kg and the income generated

through the sale of non-timber product was found below 400 Ngultrum.

The quality of life of the local people at Rinchengang village was found to be moderate because many members of User groups of the community forest live in one house. Although it was found that the people are constructing new houses to live separately, still majority are living together. Obviously, the overall quality of life of the local people through use of forest products from the community is low. Therefore, it would be wise to put more effort to manage the forest in a sustainable way to raise the quality of life of the local people responsible in managing the community forest.

6. Conclusion

This study was primarily designed to study in one of the community forest in Bhutan, located in the western part of Bhutan. The point of focus was on the management aspect of the community forest by the members of the users group. Secondly, to find out the pattern of use of the timber and non-timber products from the forest the community who are also responsible for the managing the forest.

The household involved in the management of the community forest are characterized by small land holding, low education and low income. People were mainly engaged in agriculture activities like paddy cultivation and production of some vegetables like chilies. It was found that they use their production for consumption and for sale if excess. In terms of livestock, they are reared mainly for the household use only. They types of animals they raise are cows, oxen and the pigs.

The pattern of use of timber products such as timber and poles are used by the people for constructional and maintenance purposes of infrastructure such as houses and animal shed. As per the sources from department of forest it was found that the entire demand from the community forest can be met only after 15-20 years since most of the products are at the pole stage. The non-timber products such as mushroom, fern and asparagus and collected for household consumption as well as sale to the market. It was found that availability of these products were limited in the community forest. Therefore they collect them from government reserved forest whenever they have time.

Quality of life of the local people of the Rinchengang village is looked into through various aspects like, health status, education level, food consumption, over all income situation, and their shelter and housing. People normally visit hospitals for their treatment for any kind of sickness and do not depend on community forest for medicinal plant. Therefore, it would be wise to find out the availability of medicinal plant in the community forest and manage properly so that it can be used to raise the quality of life of the local people and need not depend on hospital for every sickness.

Regarding education, every young children go to school for formal education from every household. Adult members were given forest education through various types of forest based training such as plantation, thinning, harvesting, cleaning and group mobilization. The knowledge on forest is important as it will be passed to the younger generation for the betterment of the community forest. The knowledge gained through the training are applied practically while implementing the activities for the improvement of the community forest. Besides the training acquired, other trainings such as forest nursery management and forest fire management are important for betterment of the community forest.

Regarding food and income, they produce cereals such as rice from their farmland and that was sufficient to some

of them and insufficient to others. Surplus foods were sold in the local market for the income generation. Many families used to live in a single house before the establishment of the community forest. Since, with the establishment of communality forest people had more access to timber, the families have started to build new houses and live separately.

So far people have collected an amount of 21,000 Ngultrum from the fines levied from the illegal activities that have been taking place in the community forest by the outsider. The amount has been deposited in the bank and will be used for developmental activities such as constructing proper footpath inside the village, installing more water taps and improving the sanitation of the village. People also save more than 100 Ngultrum on each aspect of education, food, income and shelter through use of product from community forest which will greatly enhance the better quality of life of the local people.

7. Acknowledgment

The authors would like to thank Thailand International Development Co-operation Agency for providing financial support for this study. We would also like to express our gratitude and appreciation to the college of natural resources, Royal University of Bhutan and the Royal government of Bhutan for support to allow completing this study. We would also like to thank Department of Forest for providing necessary support during data collection.

8. References

DoF. 2004. **Community Forest Manual for Bhutan: Part III Silvicultural Options for Community Forestry**. Department of Forest, Thimphu.

Paudel, A., & Vogel, S. 2007. **Community forestry governance in Nepal: A case study of the role of service providers in a community forest users group.** University of Natural Resources and Applied Life Sciences, Vienna, 31-34.

Phuntsho, S. & Sangye, M. 2006. **Entire Rural Wood Supply from Community Forests–A Challenging mission**. Ministry of Agriculture, Thimphu.

Pokharel, B.K., & Nurse, M. 2004. Forests and people's livelihood: Benefiting the poor from Community Forestry. **Journal of Forestry and Livelihoods** 4 (1): 19-29.

Temphel, K.J. 2009. **Assessment of Community Forestry Implementation in Bhutan**. Participatory Forest Management Project, Department of Forest. Thimphu.

Temphel, K.J., & Beukeboom, H.J.J. 2006. **Community Forestry Contributes to the National and Millennium Goals without Compromising the Forestry Policy**. Ministry of Agriculture, Thimphu.

Wangdi, R., & Tshering, N. 2006. **Is Community Forestry Making a Difference to Rural Communities?**. Ministry of Agriculture, Thimphu.