

## Case Studies

### Community Based Forest Enterprises



**Case Study 1:** Community Forest Based Eco-tourism, Chitwan

**Case Study 2:** Community Forest Based Wooden Handicraft Production, Makawanpur

**Case Study 3:** Community Forest Based Bio-Briquette Production, Sindhupalchok

Ms. Sita Aryal (PhD)

Mr. Ghanshyam Pandey

**Green Foundation Nepal**

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## Background and Context

Nepal is a small country with tremendous geographic diversity, it rises from as low as 59 masl in the tropical Terai in the south-eastern alluvial plains to 8,848 masl at the peak of Mount Everest. The country's unique geography, with drastic changes in elevation along a relatively short (150-250 kilometers) north south transect, and associated variability in the physiographic and climatic conditions have resulted various climate induced disasters (GON, 2014).

Diverse communities in Nepal are involving in forest resource management named as community forestry program since 1976 AD. Out of the total forest area of Nepal 6.61 million ha, community forestry represents about 30% that is 1813478 ha of forest area with 19361 community forest user groups involving 2461549 households (DoF, 2017). In Community forest, local people find their livelihood attached through management and use of resources by initiating income generation activities. One of the income generating activity found in CF is establishment of Forest-Based Small-Scale Enterprises (FBSSEs) such as sawmill, briquette, rope, handicraft, juice, herbal medicine (*Trifala*), leaf plate production and ecotourism promotion through sustainable forest management practices. Subedi (2006) believes that enterprise-oriented community forest management can generate positive outcomes for both conservation and local livelihood development. Similarly, Subedi *et al.* (2002) argued that forest-based enterprises have the potential to contribute to better management of natural resources, along with providing income and employment opportunities to poor and disadvantaged groups.

The community forestry policy of Nepal is regarded as a progressive approach for establishing rights of local people over forest resources; however, the promotion of forest-based enterprises has been limited. Because of policy hurdles, development of community based forest enterprise, sustainable forest management and full utilization of forest resources are not fully function so that economic growth from utilizing the forest resources is minimal. The issue of land rights to CFUG is one of the major reasons of hindrance to establish and development of forest based enterprise at community forest level.

In this background, the Right and Resource Initiative (RRI) and Green Foundation Nepal aims to document the good practices of community based forest enterprises in different community Forest User Groups (CFUGs). These organizations aims to further enhance for community based forest enterprise development through sustainable forest management to improve livelihoods and resilience of poor and disadvantage people in Nepal. The Green Foundation Nepal is lead implementing organization for the documentation of three case studied on community based forest enterprise along with its consortium partner Federation of Community Forest User Group's Nepal (FECOFUN) and Asmita Nepal. This paper brings three case studies from different CBFES currently available in community forest in Nepal and examines their impacts on forest management, economic growth and livelihood development. The case studies also highlighted problems and challenges for the establishment and development of CBFES with respect to study sites. The evidence based studies on community based forest enterprises and its linkage to the economic status of the communities through sustainable forest management which has provide existing field based situation and policy consequences, thus prepared document must be helped in further planning and implementation of the program in the relevant sector and has

focus on pro-poor community led governance of forest resources for development, poverty alleviation and ecological security of the local communities.

## Case Studies

The first case study describes a community forest based ecotourism enterprise, located at the Kankali CFUG in Chitwan district. The second case study focuses on wooden handicraft production enterprise located at the Piple Pokhara and Neureni CFUGs in Makawanpur district. Finally, the third case study focuses on bio-briquette production in Banjyang CF in Sindhupalchok district.

### Case Study 1: Community Forest Based Eco-tourism, Chitwan

#### 1.1 Introduction

The Kankali community forest is located in the foot-hills of the Mahabharat Range in Chainpur Village Development (VDC) ward no 4, Chitwan. There was high encroachment in the forest and the illegal harvesting of the woods due to the volatile political situation during the year of 1990 AD (2046 B.S.). Then the Kankali CF was once a degraded and almost like a naked forest. The people living in the lap of the forest suffered the



problems of landslides. The life for survival became complicated and the people began to migrate in another place hence the community realized the importance of biodiversity and took an initiation for forest conservation since 1991 AD (2047 B.S.). Finally the Kankali CF was handed over from District Forest Office (DFO) Chitwan on 1995 AD (2052 B.S.).

Currently, the 2100 households are included in Kankali CFUG with about 15000 population. The user members are from different ethnicity such as Brahman, Chhetri, Tamang, Darai, Chepang, Kumal, Bote etc. Kankali CF area occupies total 749.13 ha and stretches from 230m to 580m a.s.l.. The forest type represents both natural and plantation. Sal (*Shorea robusta*) is a dominant species which covers about 90% of the total forest and other tree species such as Botdhagero (*Lagerstroemia parviflora*), Saj (*Terminalia elliptica*), Barro (*Terminalia bellirica*), Harro (*Terminalia chebula*), Champ (*Michelia champaka*), dudhe, are



covering 10%. More than 294 different medicinal plants like Amala (*Phyllanthus emblica*), Barro (*Terminalia ellirica*), Harro (*Terminalia chebula*), Sarpaganda (*Rauwolfia serpentine*), Kurailo (*Asparagus recimosa*) and etc are found in community forest area.

Now in Kankali CF, more than 35 species of wild animals such as Leopard (*Panthera pardus*), Deer (*Spotted deer*), Wild Boar (*Sus scrofa*), Squirrel (*Sciurus carolinensis*), Porcupine (*Hystrix indica*), and Monkey (*Presbytis entelluse*) can be found. Over 124 bird species including residential and migratory such as crow (*Corvus splendens*), Kalij pheasant, dove, parrot, eagle, owl, koili, Tumulkari Fiste (*Seicercus anthoschistos*) and Julphe Jurili (*Pycnonotus leucogenys*) are found in Kankali CF. There are also different types of reptiles as snake such as common krait (*Bungarus caeruleus*), king cobra (*Ophiophagus hannah*) and hareu can be found. Many religious, historical, cultural sites and natural resources (water pound, lakes, forest, wildlife, etc) are also available in Kankali CF area.

## 1.2 Methodology

Diversified approach like Group Survey, Focus Group Discussions (FGDs), forest visit was done for data and information collection. Then data entry, analysis, case paper preparation, publication and sharing the results with concern government and non-government stakeholders at local and national level were used in carrying out the success story and its dissemination of eco-tourism program. This case study was done in August and September 2017.

### 1.2.1 Group survey:

Including the members of executive committee and users, group survey was carried out of which includes total of 18 members where 10 were male and 8 were female. Group survey was conducted in order to realize ecotourism background and its actual



impact on socio- economic condition of people and ecological aspect. Moreover, the benefits and satisfactions that people are getting from the ecotourism activities were studied simultaneously. Likewise, group survey was designed to list out the problems and policy berries that people are facing from the ecotourism activities in the community.

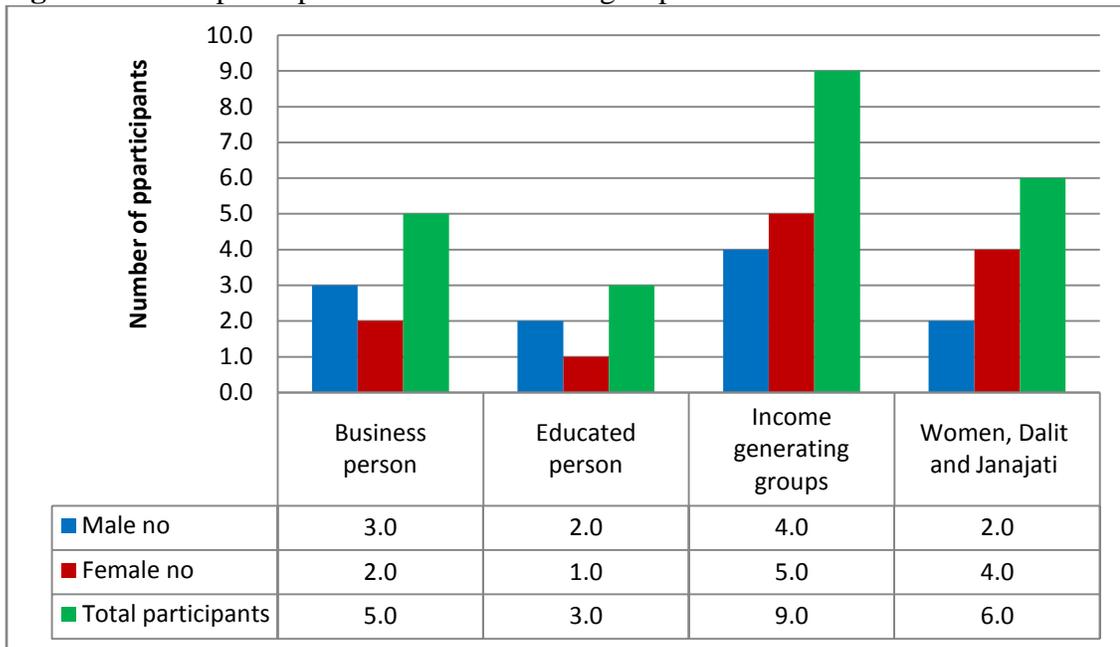
### 1.2.2 Focus group discussions(FGDs)

Focus group discussions were carried out mainly with four groups' i.e. local business person, educated person, income generating groups and Women, Dalits and Janajatis. Figure 1 shows number of members involved in each FG. Where, business group involves cycle repair, meat shop and other small shops. Educated people represent teacher



and social worker. Whereas income generating group; and women, Dalit and Janajati are involved in animal husbandry, poultry farming, Goat farming, etc. Focus group discussions were carried out within individual group to note down their individual benefits they are getting from the tourists and eco-tourism program. Similarly, the positive and negative impacts they were facing from the tourist and their realization of the importance of the tourists in community forest were recorded.

**Figure 1:** No of participants in different focus group discussions in Kankali CF



**1.2.3 Forest walk and tourism destination visit**

Forest walk and tourism destinations were visited with the members of executive committee, forest guard and user group. Swimming pool, picnic spot, forest trail/trekking route, view tower which is mainly used for bird watching and observing the landscapes, ecosystem maintaining pond, and demonstration plots where people can observe tree growth, carbon stock analysis, etc were directly observed.



**1.3 Eco-tourism programs and initiation**

The Kankali CF is one of the suitable and beautiful community forests for eco-tourism development. Kankali CFUG was initiated as eco-tourism program in the year 2000 A.D. (2057 B.S.). Initially, about NRs 400,000 (four hundred thousand rupees) was invested by CFUG for ecotourism promotion activities such as huts, forest road, and water tank construction. During the initial stage of eco-tourism program, Village Development Committee, Municipality, District Tourism Office, Birjung, were supporting Kankali CFUG by constructing temple, ladder, fish pond and swimming pool. Recently there are many eco-tourism activities such as nature walk,

bird watching, ecosystem management in lake/pond, temple visit, tower visit, picnic spot, swimming, overnight stay in the forest, botanical garden management, and fish farming etc.

#### 1.4 Nature of tourists

Both national and international tourists are coming to visit Kankali CF for different interests. The main purpose to visit this area is research/study, holiday and pleasure, trekking/forest walk, bird watching, religious/pilgrimage, and landscape watching from view tower. Many people come for picnic programs and swimming. Compare to individual, small and large sized group, large sized group tourist comes frequently. Table 1 below shows the data of no of domestic and international tourists visited in last five years in Kankali CF. There are almost increasing number of domestic and international tourist from 2068/069 to 2072/073. No of tourists visited in Kankali CF is high in 2072/073 for both domestic and international, which is 24.2% and 27.5% respectively of the total arrival tourist in last five years. So-far, international tourists are coming to visit from United State of America, Australia New-Zealand, Germany, etc.



**Table 1:** No of tourists visited in Kankali CF in last five years

Year	No of domestic tourist	Share (%)	No of international tourist	Share (%)
2072/073	205535.0	24.2	250.0	27.5
2071/072	185975.0	21.9	200.0	22.0
2070/071	155885.0	18.4	165.0	18.1
2069/070	150590.0	17.8	145.0	15.9
2068/069	150145.0	17.7	150.0	16.5
<b>Total</b>	<b>848130.0</b>		<b>910.0</b>	

#### 1.5 Income and Expenditure

Although CFUGs had initiated ecotourism program in 2000/2001 A. D. (2057/058 B.S.), the income and benefit from this program was generated from 2003/2004 A. D. (2060/061 B. S.) The yearly average income for the last past two years was NRs. 1461853 (US\$14266.3) and last five years was NRs. 118990 (US\$1161.2). The major sources of income were picnic, entry fee, swimming, etc. Similarly average expenditure for the last past two years



was NRs. 1399143 (US\$.13654.3) and last five years was NRs. 918901 (US\$8967.6). The major activities for expenditure are salary for staff, wage for labors, electricity, water supply, etc. The earned income is being used for income generation and poverty reduction program through establishing revolving fund. In 2016, seventy (70) persons are being benefitted through income generation program which includes animal husbandry, goat farming, poultry farming, bee keeping, furniture and many other small local businesses such as cycle repairing, meat shop and other small shops. Through this, it is recorded that every individual have been receiving the fund equivalent to 15,000 to 20,000 for income generating activities like goat, buffalo, poultry farming, bee keeping, furniture and shop establishment.

According to the executive committee members, about 20% of the total income of Kankali CFs shares by eco-tourism activities. The total income from the ecotourism activities during the last past five years is NRs. 5949950 (US\$ 58070.9) and total expenditure for eco-tourism promotion activities is 4594507.32 (US\$ 44838.0). Table 2 shows the total income and expenditure from eco-tourism activities of Kankali CF in last five years.

**Table 2:** No of tourists visited in Kankali CF in last five years

<b>Year</b>	<b>Income (NRs)</b>	<b>Share (%)</b>	<b>Expenditure (NRs)</b>	<b>Share (%)</b>
2072/073	1542775	25.9	1907895	41.5
2071/072	1380931	23.2	890391	19.4
2070/071	1122505	18.9	1074238.32	23.4
2069/070	1009077	17.0	541103	11.8
2068/069	894662	15.0	180880	3.9
<b>Total</b>	<b>5949950</b>		<b>4594507.32</b>	

### **1.6 Employment**

The eco-tourism program has generated full-time employment for 25 individuals for the positions of accountant, office assistant, forest guard, sport guard, gate keeper, life guard for swimming pool, night guard, etc. Out of the total employee, male represents 76% (19 individuals) and female represents 24% (6 individuals). Dalit and Janajati represent 72% (18 individuals) of the total employee.

### **1.7 Forest management and the eco-tourism enterprise**

The CFUG has adopted regulated forest operational activities which are defined in the operational plan. In addition, plantation in open area of forest is also doing by CFUG. Mix species has given priority to keep in forest during forest management activities. Scientific forest management is adopted in 500 ha area of the Kankali CF where altogether 65 research and demonstration plots were established. Tree growth and carbon stock analysis is also doing in the plots. Moreover, 10 ha forest area has used for eco-tourism activities where promoting mixed forest species, ecosystem pond conservation, maintain bio-diversity, etc.

### **1.8 Planning, record keeping and monitoring**

Kankali CFUG is doing activities based on their forest operational plan. In case of new activities they realized to do in forest and community, the working committee proposed the plan activities, then council assembly has recommend the plan activities and finally general assembly approved. There is full implementation of planned activities. There are provisions in the community regulations that require the all activities to update its record of inputs and outputs, which the CFUG then has to monitor. The record keeping system is very good and transparent. Annual progress report and financial records have shared among all users through public auditing and hearing.

### **1.9 Problems and challenges**

As per the survey done with the members of executive committee and focused groups in Kankali CF, there is no any problems and negative impact seen because of ecotourism activities on social, economic and ecological aspects. But there is a policy constraint for ecotourism enterprise registration in CFs. So-far no clear policy guidelines for establishment of eco-tourism enterprise establishment and development in CF is prepared. Moreover, according to Bee keeping farmer, there is problem to graze their Bee in Kankali CF forest area because of lack of flowering plants. So, they are carrying their Bee for grazing purpose from Chitwan to Dang. In addition, there is lack of Bee's insurance and need to approved Bee-keeping policy guideline.

### **1.10 Conclusions**

As a conclusion, ecotourism program helps in environmental protection, bio-diversity (flora and fauna) conservation, capacity building, infra-structure development (i.e. road, pond, school, health post support), income generation and employment creation at local level, and poverty reduction of Kankali CFUG. Ecotourism has directly or indirectly influenced the life standard of local people where its contribution is clearly positive towards the local people for raising their economic standard. As per the information by income generation group, they are fully satisfied with their investment in different income generating activities. As per the information given by the committee and user group, the members are cooperative to each other and do every work with mutual understanding which has piled up the positive things for the community forest. That is why; the CFUG has a strong believe about promoting the ecotourism in Kankali CF making a long-term vision of ecotourism as a best community forest based enterprise.

## Case Study 2: Community Forest Based Wooden Handicraft Production, Makawanpur

### 2.1 Introduction

Three CFUGs from Makawanpur district, Inner Terai Central Development region of Nepal is working together for community forest based wooden handicraft production. The initiation of this handicraft production by three CFUGs has mainly focused women and poor groups with their collaboration. Table 3 highlighted the general characteristics of those three CFUGs.

**Table 3:** General characteristics of the selected three CFUGs

S. N.	Name of CFUGs	Address	Forest area [ha]	Forest type	No. of HHs	Population	Year of FUG formation
1	Piple Pokhara	Hetauda municipality - 5	199.53	Natural	1352	7419	2052
2	Manakamana	Makawanpurgadi - 9	92.90	Natural	361	2082	2052
3	Neureni Chisapani	Hetauda municipality - 7	71.32	Natural	230	1262	2047

(Source: Operational plans, 2017)

Piple Pokhara, Manakamana and Neureni Chisapani all these community forests are rich in forest resource in both timber and non-timber species. Out of the total area of three CFs, 363.8 ha area has been found effective for wood production. Out of the total 363.75 ha area of three selected CFs, 287.86ha area has been found effective for wood production. The main species found in three CFs are Sal (*Shorea robusta*), Uttis (*Alnus nepalensis*), Sisso (*Dalbergia sisso*), Karma (*Adina cardifolia*) out of which Karma and Sal



is the best species for the wooden handicraft production. At the moment, total 17 members (14 women and 4 poor men) from three selected CFs are producing wooden handicraft.

### 2.2 Methodology

Interaction with handicraft producer group, interaction with local level supportive organization (Asmita Nepal) and meeting with the executive committee members of Piple pokhara CFUG were done for primary data and information collection. Then data entry, analysis, case paper preparation, publication and sharing the results with concern government and non-government stakeholders at local and national level were used in carrying out the success story and its dissemination. This case study was done in August and September 2017.

### **2.2.1 Interaction with producer group**

An interaction meeting with wooden handicraft producer group was organized in Piple Pokhara CFUG's hall on 9<sup>th</sup> August, 2017. Total 7 women, who are involved in the wooden handicraft production, are participated in this meeting. Producer group was interviewed to illustrate about their satisfaction of working and getting benefits from the wooden handicraft production. Not only this, it focused mainly about the challenges and issues they are facing during this production and enterprise registration process including the hands of support they are receiving from others. Moreover, interview was conducted in order to ask them whether the production of wooden handicraft was sustainable or not. A set of questionnaire was prepared during interaction with producer group.



### **2.2.2 Interaction with supported organizations**

This interaction was conducted with 2 members (i.e. Chairperson and program coordinator) of Asmita Nepal on 8<sup>th</sup> August 2017. A set of checklist was used during interaction meeting. The main purpose of this meeting was to know why they have been supporting the CFUGs and producers group, what and how they are supporting, their objectives to initiate the wooden handicraft production program, strategy for sustainability and their expectations from producer group.



### **2.2.3 Meeting with the executive members of CFUG**

Total 10 (8 male and 2 female) members of the executive committee of Piplepokhara CFUG were interacted during the meeting on 9<sup>th</sup> August 2017. The main purpose of this meeting was to collect the information that how CFUG and executive committee (EC) is providing support for the wooden handicraft producer group, their views on the sustainability of wooden handicraft, linkage between forest management activities and raw material for wooden handicraft, problems and challenges on the development of wooden handicraft enterprise, and finally the their expectation from handicraft producer group.



### 2.3 Initiative for wooden handicraft production

Makwanpur is famous for wooden Theki. The district is suitable for wooden handicraft production because of availability of suitable tree species like Sal and Karma. Realizing the possibilities of developing handicraft production in Makwanpur, a local organization Asmita Nepal initiated wooden handicraft production program for the women and poor members of CFUGs in August 2015.

Selection of CFs for wooden handicraft promotion, co-ordination with executive committees of CFUGs, feasibility study and value chain analysis of wooden handicraft, selection of the producer groups, handicraft production skill development training, business plan preparation training, etc were done by Asmita Nepal with the collaboration from other organizations like APFNet, Care Nepal, Forest and Farm Facility (FFF), Green Foundation Nepal, and District Development Committee (DDC) Hetauda. The main objective of Asmita Nepal is to promote wooden handicraft enterprise in CFs for economic empowerment to women and poor through sustainable forest management. Through it, unwanted, unused and low value woods can be utilized and make more money.

### 2.4 Investment and Income

Asmita Nepal with the support of different organizations has been investing NRs 7266100 for skill development training to handicraft producer group, equipment, machinery and raw material support, etc. Piple CFUG has provided training and handicraft production hall and one store room for 2 years including water and electricity facility with free of cost. From the participants and producer group from three CFUGs, only labour day's equivalent to about NRs 1743300 was contributed during the period of two last years.

But, in case of income, only the producer group is getting income. So-far their income from the sale of handicraft products like photo frame, Nepal Map and key rings is NRs 30,000. In addition, the group has stocked some products to be sold very soon, which is equivalent to NRs 300000. The producer group feels satisfactory about their work and benefit.

### 2.5 Products production, marketing and employment

Handicraft producer group is producing seven different products such as photo frame, Mirror frame, Nepal's map, Aakhijhal, t-table, key rings, and token of loves. The wood of Karma (*Adina cardifolia*) and Sal (*Shorea robusta*) are being used as a raw material for handicraft. After two basic (160 days) and advance (85 days) training for handicraft production, the producer group is working their own house individually. So-far the produced products are not fully sold because of lack of market



information and linkage among producer group and problems to register and establish showroom. However, with the support of Asmita Nepal, They are selling the products. Now, the members of producer group are in the process of micro-enterprise registration. So, after the registration of micro-enterprise they will work together in their showroom in district headquarter. Recently, total 17 (14 women and 3 poor men) members of three CFUGs are getting employment in wooden handicraft production. The producer group believes the employee might be increased after the establishment of showroom and registration of the micro-enterprise.

## **2.6 Forest management and raw material for wooden handicraft**

All three CFUGs have adopted a regulated harvesting system which is defined in the operational plan. In addition, an increasing availability of plantation trees in open land of CF is also contributing to the supply of raw materials to the enterprise. The system allows a steady supply of the raw material to the enterprise. So far three CFUGs are providing wood to handicraft producer group with very minimal cost. The executive members of three CFUGs are very positive to support to the handicraft producer group. So for small scale production there would not be problem for raw material. The existing community forest resources are enough to support them. But in future, if the production will be in large scale and need more raw materials at that situation Timber Corporation of Nepal (TCN), private forest, neighboring CFs, etc will be the source of raw material to the wooden handicraft enterprise.

## **2.7 Problem and challenges**

As per the discussion with executive members of CFUG, handicraft production group and local level supporting organization (Asmita Nepal), there were many problems and challenges available for the development of wooden handicraft enterprise in this initial stage. Those are:

- There was problem to register for handicraft production enterprise as a co-operative model, in which model producer group and selected CFUGs wants to establish and development of enterprise. Therefore, producer group change their decision for the registration as micro-enterprise model, although they are not interested for it.
- Lack of safety health measures/kits, while working for wooden handicraft products.
- No guarantee for sustainability of the handicraft and producer group because of unsupportive government policy.
- Government's policy barrier to supply the wooden handicraft products in international market.
- No insurance system prevailing in wooden handicraft production.
- Amendment of CF's operational plan including the support to wooden handicraft-enterprise.
- CFUG's resource mobilization towards handicraft producer group might be difficulties in future because the income and expenditure of producer group will not share CFUG's income.
- In present, problem to sale products because of less knowledge of market and marketing system within producer group. Therefore, products are in stock.

## **2.8 Conclusion**

As a conclusion, the net-work of three neighboring CFUGs is positive marks to support the wooden handicraft production group for their sustainability of enterprise. The resources existing in the selected forests are also harmonized to support handicraft production. So, this enterprise will support to growth the economic status of women and poor peoples, bio-diversity management in CFs, promote private plantation, skill and capacity building, etc. As per the information by supportive organization, they are satisfied with their investment for skill development trainings for women and poor for handicraft enterprise establishment. According to CFUG and producer group, they are also satisfied with their decision to promote handicraft enterprise so they are active for registration and showroom establishment process. Widow, old age women and disable people who do not have other options for income generation, this handicraft production enterprise creates best opportunity to make more money at their own place.

### Case study 3: Community Forest Based Bio-Briquette Production, Sindhupalchok

#### 3.1 Introduction

Banjyang community forest is located in the Shikhre Attarpur VDC - 8 of Sindhupalchowk district. It was a total barren land with lots of water scarcity before 2052. People were suffered from different problems such as scarcity of timber, fuelwood, fodder, soil erosion and water scarcity. So, to reduce these problems, Bhanjyang CF was handed over in the year 1995 A. D. (2052 B.S.) The total area of the CF is 40.5 ha and characterized as a mixed forest where the main species found are Uttis (*Alnus nepalensis*), Sallo (*Pinus species*), Katus (*Castanopsis indica*), Falat, Chilaune (*Schima wallichii*), Payu, Dhudhilo and medicinal species like Chiraito, Dhasingare, Pakhandbedh, Argeli etc. The total number of household in that CF is 33 with 160 populations. It has women led CFUG where all members in decision making body/executive committee is held by women.



#### 3.2 Methodology

Interaction with bio-briquette producer group and meeting with the executive committee members of Bhanjyang CFUG were done for primary data and information collection. Then data were analyzed and published. This case study was done in September 2017.

##### 3.2.1 Interaction with bio-briquette producer group

The survey was conducted with 13 members (female 12, male 1) of bio-briquette producer group. The main motive of the survey was to find out the objectives and the level of satisfaction of the producer groups from the bio-briquette production. Similarly, the questions were carefully designed to elicit the views of the respondents towards the problems and challenges they are facing and also the activities they have been doing to promote their briquette production in the market level. Likewise, the long term expectations and goals of the producer groups from the briquette production were also discussed in the meeting.



### 3.2.2 Interaction with executive members of CFUG

Including the members of executive committee of CFUG the interaction meeting was carried out with 4 respective persons from the different posts. The main objective of this interaction was to analyze what they are doing for the monitoring and management of the bio-briquette promotion. Not only this, the interaction mainly focused on the environmental, social and environmental impacts they have been facing due to the bio-briquette production in their CFUG and its long term goal in the field of providing employment opportunities to the poor and needy people. This interaction also listed down how they are providing raw materials and necessary equipments for the producer groups.



### 3.3 Bio-Briquette initiation

Bio-briquette production in Bhanjyang CF was officially started from 2000 A. D. (2057 B.S.) from the motivation of Asia Network for Sustainable Agriculture and Bioresources (ANSAB). Before that, skill development training related to briquette production was given to the women since 1986 A. D. (2043 B.S.) by different organizations (i.e. ANSAB, DFO, etc). The CFUG has decided to prefer women members from their community for briquette production. Now all the producer women members (37 persons) are from Janagati (i.e. Newari) community. Males are assigned to supply raw materials for briquette production from the forests to the production house and also to handle the equipments that are too heavy. Currently, total 9 male members are working for raw material collection and instrument use for briquette production. The main species that are used for the briquette production are unused bushes, weeds, twigs, Banmara (*Eupatorium species*), and Fern. Out of which Banmara and Fern are the best species for the production of bio-briquette. Altogether 9 days of skill development training is provided for the new female producer before they start to make briquettes.



Janagati (i.e. Newari) community. Males are assigned to supply raw materials for briquette production from the forests to the production house and also to handle the equipments that are too heavy. Currently, total 9 male members are working for raw material collection and instrument use for briquette production. The main species that are used for the briquette production are unused bushes, weeds, twigs, Banmara (*Eupatorium species*), and Fern. Out of which Banmara and Fern are the best species for the production of bio-briquette. Altogether 9 days of skill development training is provided for the new female producer before they start to make briquettes.

### 3.4 income and expenditure

The total income of the producer group in a month is recorded to be 12,000 to 13,000 per individual. Each woman receives Rs 3 for thicker briquette and Rs 1.5 for thin briquette. But male receives Rs 40 per tin which is equivalent to 3 kg charcoal/tin. Total income of the briquette producer group in last four years is recorded as NRs. 1500000. Out of which, the highest income was recorded NRs 400000 in 2015 A. D. (2072 B.S.) when 1700000 pieces of

briquettes were being sold at the market due to the blockade done by India, at that time, and the producer group received 50% profit of the total income. The lowest income NRs 200000 was recorded in 2016 A. D. (2073 B.S.) due to the scarcity of electricity. Similarly the average expenditure for the briquette production in last 4 years is recorded to be NRs 36,500 where profit gained in 4 years is NRs 1,135,000. Table 4 shows the income and expenditure of briquette producer group in last four years.

**Table 4:** Income and expenditure of briquette producer group in last four years

Year	Income (NRs)	Expenditure (NRs)
2070	300000	9,000
2071	300000	9,500
2072	400000	10,000
2073	200000	8,000
<b>Total</b>	<b>1500000</b>	<b>36,5000</b>

### 3.5 product and marketing

The final product is Bio-briquette. Bio-briquette is produced by mashing the waste called charcoal, where 3 kg charcoal is used to prepare 7 pieces of thick briquettes (i.e. equivalent to 1kg/briquette) and 3 kg of charcoal is used to prepare 17 pieces of thin briquettes (i.e. equivalent to 0.5kg/briquette).The bio-briquette that is produced in Bhanjyang CF is being sold to the Himalayan Natural Company where they receives NRs 15 per thick pieces and NRs 8 per thin pieces. So, producer group are not aware about the market-chain of their briquette.



### 3.6 Employment opportunities

In Banjyang CFUG, there is the trend of rotating employment in the production of bio-briquette. Therefore, almost every household has got a chance to work which helps in raising their living standard. Now, there are total of 46 employees working for raw material collection and bio-briquette production work. Out of which, 37 women members are producer and 9 male members are raw material collector. Employee are assigned to helping the producer group collecting raw materials, produce charcoal, prepared briquette, drying, collecting and store of briquettes after it is prepared. Briquette production in production house in Bhanjyang CF is conducted for six months where income is circulated for whole year.

### 3.7 Forest management and briquette production

Briquette production in Bhanjyang CF has a positive feedback from the producer group where they are doing bush and weed cleaning and thinning activities. The output came from these

activities such as bush; twigs, leaf, etc are uses as raw materials for the briquette production. The bush cleaning and thinning activities are also supporting to reduce forest fire and its' risk. Not only this, clearance of weeds and waste from the forest helped in the beautification of environment they are easily removing dead and decaying trees from the forest which lower down the risk of being epidemic. Removal of dead and diseased bushes has made the site clear due to which cutting of grasses has been easy. Plantation has added some of the soil management techniques due to which risk of soil degradation and natural hazards have been reduced in the area.



### 3.8 Problems and challenges

The major problems and challenges of bio-briquette production in Bhanjyang CFUG are:

- Complex and unsupportive Government's policy barrier to register and establish bio-briquette production enterprise.
- Lack of safety health measures, while working for briquette production.
- No guarantee for sustainability of the briquette production and producer group because of unsupportive government policy.
- Lack of proper market for the sale of briquettes that are produced.
- Market value of briquette is diminishing because it is only used for heating and not for cooking.
- Transportation is also the key problem for the producer group as there is no proper road for the supply of briquettes to the market.
- Handle of equipments has become one of the biggest challenges for women as the machineries are too heavy to be handled by them.
- Linkage and collaboration with other organization is poor.

### **3.9 Conclusion**

As a conclusion, bio briquette production in Bhanjyang community forest has given them the good opportunity of employment which helps the members to uplift their living standard. Moreover, women empowerment has been clearly seen as the committee is held by women itself .not only this, bio briquette production has directly or indirectly supported for the development of infrastructures like roads, drinking water in the CF. And it is clearly seen that the members of Banjyang CFUG are fully satisfied with the policy and law made by their committee member which provided them the hands of support in every steps for the briquette production. For instance, they are always expecting for the production house to be reopened and give them good employment opportunity. And as per the information gathered from the producer groups and the committee member groups, there is a proper coordination, cooperation and mutual understanding between them which is the plus point for the bio briquette production and developmental activities as well.

### **4. Lesson learnt and overall remarks**

The case studies show that the promotion and implementation of CBFEs can support the livelihoods of poor people of Nepal, highlighting the importance of community forestry in reducing poverty. The initiatives include a wide range of activities supporting the production of value-added forest products that range from subsistence-based agricultural implements to furniture saw-mill, ecotourism promotion, handicraftand bio-briquette production, etc.

The case studies indicate that community forest based productions can make very important and successful enterprise in the ongoing development of community forestry. And the local people are also able to modify their management of forests to sustain the enterprises once established. However, CFUGs are not fully satisfied and freely work on forest based enterprise because of policy berries for establishing forest enterprise and lack of land tenure security in CFs. So, for the full benefits of CBFEs to be realized, there is a need for policy advocacy in favor of this concept in combination with promotion of sustainable community forestry, with a focus on poor, women, and disadvantaged communities.

The documentation and scaling up of best practices on community forest based productions based on experience and lessons learned, is very essential in the present context. That might support to CFUGs for the selection of right enterprise and entrepreneurs in their group and to create pressure for suitable policy formulation in favor to forest users.