

DEVELOPING A STRATEGY TO IMPEL DEVELOPMENT IN KARNALI REGION

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Acronyms and Abbreviation

AC	Air Conditioner
ADP	Area Development Programme
AIDS	Acquired Immune Deficiency Syndrome
B.S	Bikram Sambat
BSC	Business Service Center
CBS/NPC	Central Bureau of Statistics/National Planning Commission
CO	Community Organization
DADO	District Agriculture Development Office
ECD	Early Childhood Development
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GoN	Government of Nepal
HDI	Human Development Index
HIMALI	High Mountain Agri-business and Livelihood Improvement
HIV	Human Immunodeficiency Virus
HVAP	High Value Agriculture Project
ICIMOD	International Center for Integrated Mountain Development
IFAD	International Fund for Agriculture Development
KASDA	Karnali Sustainable Development Programme
KIRDARC	Karnali Integrated Rural Development and Research Center
KTS	Karnali Technical School
MoAD	Ministry of Agriculture Development
NGO	Non-Government Organisation
NHDR	National Human Development Report
NRREP	National Rural and Renewable Energy Programme

NTFP/MAPs	Non-timber Forest Product/Medicinal and Aromatic Products
PAF	Poverty Alleviation Fund
PRSP	Poverty Reduction Strategy Papers
SEZ	Special Economic Zone
UNFCO	United Nations Field Coordination Office
WVIN	World Vision International Nepal

Abstract

The report looks into the existing challenges and possible solutions to improve the situation of livestock farming, apple and herbs cultivation and their promotion. These sectors that have always been influential in determining the economic opportunities and well-being of the people of Jumla, therefore, their situation is examined to understand if they have the potential to enhance the capacities of the residents of Jumla to sustain their livelihoods. Six focus group discussions at six community organizations and a case study of an elderly agriculturist were conducted in four VDCs, namely Chandannath, Mahatgaun, Kartikswami and Talium in the course of four days using random stratified sampling method. The respondents identified the components that could put them in a better position than where they stand today, for they believe that, they are still deprived of the basic amenities and the concern from the central level. Several recommendations touch upon the previous of existing policies of the State and the demands of the people of Jumla for improved benefits and the economic well-being of the population.

Keywords: livestock farming, apple cultivation, herbs cultivation, sustainable livelihood

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Executive Summary

Karnali zone, a Mid-western development region is stranded in terms of overall development, the HDI indicators rank one of the lowest at 0.447 after the Far-western region at 0.435 (NHDR, 2014). Karnali Region has always been in the limelight for reasons, such as abject poverty, food insecurity, inferior health and education facilities, increasing migration and in general being subjected to policies that are created at the central level but are incompatible with the region.

The presence of NGOs across the region has been successful in widely acknowledging the spheres where the region lags, thereby, encouraging people to come up with pronounced demands for the development of their communities and the entire region. The idea of the project is therefore, to engage in the field, understand the problems borne by the people of Karnali and devise suitable recommendations to encounter the challenges faced by them.

The main objective of the research is to examine the situation of livestock farming and apple cultivation, two things that almost every household of Jumla is engaged in, as well as understand the promotional activities for apples that people are involved in and assess the situation of herbs cultivation. Alongside, the research will also look into the problems and challenges faced by the respondents in the above mentioned activities and devise a collaborative strategy to enhance the ability to sustain the lives of the people of Jumla.

This project was born out of the need to decipher the current bottlenecks and constraints on reviewing the ongoing government projects and other initiatives and identify strategies for innovation and collaboration in order to break the developmental quagmire in Karnali Zone.

The possibility of small scale livestock farming, apple production and its promotion, and herb cultivation in sustaining the livelihoods of the people of Jumla has been analyzed through a series of responses provided by the benefactors of KASDA, HVAP, PAF and WVIN. In due course of participatory observation and interviews with the community members, including men and women of different castes and ethnic backgrounds, it was understood that they had come a long way in terms of acquiring basic amenities, such as, food, clothing, education, significantly better health, as well as, engaging in productive economic opportunities and in decision making. The little positive changes that are seen looming in the air of Jumla has made the people wanting to engage more substantially in developing their economic and social livelihood options and lead better lives so that the future generation doesn't have to live in endangering reality amidst poverty and scarcity of resources.

Respondents were engaged in Focus Group Discussions to understand the problems and challenges faced in the areas of concern their potential to enhance the sustainability of their livelihoods was analysed. Contacts with the respondents was made through KASDA, with the help of two social

mobilisers allotted for the purpose of assisting in research. The Focus Groups were formed on the basis of the availability and willingness of the beneficiaries of six COs in four VDCs, namely, Chandannath, Talium, Kartikswami and Mahatgaun. One case study was conducted on a veteran agriculturist at this home in Raddikhela.

The constraints that the people of Jumla faced were lack of electricity, proper education for their children, health facilities for themselves and their livestock and birds, traditional farming practices, lack of availability of better quality cattle and goats, insufficient drinking water and irrigation facilities, increased prices of goods and commodities and relatively lower income, lack of microfinance services, lack of technical knowledge and facilities required for apple and herbs cultivation and lack of understanding of herbs processing and market mechanisms.

To be able to stand on better economic grounds, the respondents clearly identified their need for better credit facilities, skill-based trainings, a good understanding of market and distributors, construction of cold storage for apple preservation, quality education for their children, electricity, revision of state policies pertaining to the region and mobilization of local work force, among others.

Introduction

In this project, the idea of eclectic development of the Karnali region has been undertaken in due consideration by looking at piece of the region, i.e. Jumla district. Although, Jumla fares as one of the lowest in the HDI indicators due to farfetched education, health, and access to basic facilities and services, its mountain diversity, climate and topography provide a comparative advantage over a variety of niche products, such as apples, walnuts, vegetables, potatoes, beans, NTFP, etc. that it could produce for its own as well as for the lowlands and other trade points in the country and beyond.

Various projects have come up in Jumla with their poverty reduction plans and goals. This project will examine the current situation of the people of Jumla, in terms of livelihood strategies amidst the resources it possesses and provide suitable recommendations in case of need for sustainable livelihood development.

Sustainable livelihood, is looked at as a concept with a central goal of enhancing progress in poverty reduction of rural poor population by identifying the factors that affect their livelihood, understand the relationship between the various factors or inter-connected influences that affect how these people create a livelihood for themselves and their households (The Sustainable Livelihood Approach, IFAD).

Livestock farming refers to raising animals for a particular use. It could be for personal use or for economic purposes. The animals that are of major concern in the study are dairy cattle, pigs, horses, goats, sheep, buffaloes and rabbits. (Encyclopedia Britannica)

Objectives

- To examine the situation of livestock farming, apple and herbs production and prospects for their promotion in Jumla
- To identify existing bottlenecks and challenges in livestock farming, apple and herbs production and their promotional activities
- To develop an inclusive and collaborative strategy to overcome the constraints of the poor population in Jumla so as to enhance their ability to sustain their livelihoods.

Rationale of the project

In today's age, potential does not cease to exist.

Nepal is primarily an agricultural country, where most of the people are engaged either in the fields of in livestock farming. These activities provide 66 percent of the total population in Nepal with economic opportunities and contributes to 36 percent of GDP (HVAP, 2011).

Jumla's case is no exception, where people spend most of their time either in livestock farming, vegetable cultivation, apple production or herb cultivation.

In view of the significant potential for economic contribution through livestock farming, apple production and herb cultivation in Jumla among its rural poor families, the Daayitwa Partner, Hon. Ms. Rita Shahi and the author have taken this initiation to identify the current bottlenecks in the development of Jumla and effectively align development plans to catalyze development in the district.

Background

Karnali zone, a Mid-western development region is stranded in terms of overall development, the HDI indicators rank one of the lowest at 0.447 after the Far-western region at 0.435 (NHDR, 2014). Karnali Region has always been in the limelight for reasons, such as abject poverty, food insecurity, inferior health and education facilities, increasing migration and in general being subjected to policies that are created at the central level but are incompatible with the region.

The presence of NGOs across the region has been successful in widely acknowledging the spheres where the region lags, thereby, encouraging people to come up with pronounced demands for the development of their communities and the entire region. The idea of the project is therefore, to engage in the field, understand the problems borne by the people of Karnali and devise suitable recommendations to encounter the challenges faced by them.

Jumla in a nutshell

Jumla is situated in the north-west of Nepal and spread across 2,531 sq. km. there are altogether 30 VDCs and the district headquarters is located in Chandannath VDC (District Profile of Jumla, 2009). Jumla has a significant portion of grasslands and high meadows where the mountain goats, sheep, yaks, cows, buffaloes and goats graze. These are also abundantly covered in medicinal herbs that have great potential for sustainable economic development.

1.1. Socio economic scenario

Jumla is considered the administrative and economic hub of the Karnali Region. With slightly higher HDI value at 0.443 than the rest of the districts of the region, the underdevelopment of the region is considered a product of geographic isolation and poverty. Linked to the Karnali Highway that connects it with Kalikot, Surkhet, Nepalgunj and through them the rest of the country, it is considered a trading point for the entire region.

Majority of the people, at least 99% use firewood for cooking, 44% use solar energy and 29% use electricity for lighting. Households suffer from on an average four hours and upwards a day of load shedding, inspite of 526Kw of electricity being produced by micro-hydro power plants established in Badki, Buramadichaur, Chandannath, Depalgaun, Dhapa, Dillichaur, Garjangkot, Ghodaemahadev, Haku, Kanakasundari, Malikabota, Malikathata, Narakot, Patarashi, Patmara, Talium, Tamti and Tatopani VDCs (UNFCO, 2012).

The health condition in Jumla has been taken to account and recently Karnali Institute of Health Science was established as a recent development. Lack of proper education continues to be a problem in Jumla.

With only 68% males (age five and above) and 41% females literate and only 12% men and 5% women having attained their School Leaving Certificate, the District Education Office had executed a District Education Plan (2010/11-2014/15) and allocated NRs 19,569,000 for Early Childhood Development activities in 2011/12. However, it was found that less a third (21%) of children had access to the ECD when they entered grade one (UNFCO, 2012).

Bus service from Jumla to Kathmandu was brought into operation in April 2015, providing the residents with an alternative to the heavily priced air routes. This could open doors for various economic activities and opportunities for Jumla in the coming days.

1.2. Revenue potential of the district

Largely driven by herbs trade, especially by *Yarsagumba* or Himalayan Viagra, Jumla's economy receives approximately NRs. 400-500 million from it and NRs. 70-80 million from apples (UNFCO, 2012). Jumla has potential to raise revenue from export of goats and sheep, by raising export tax on organic apples (Communication and Management Institute, 2010). Furthermore, it could promote beekeeping, charge entry fee for herbs collectors, and establish herb processing industry as well open trekking routes from Jumla to Mugu and other districts of Karnali Region.

Jumla has access to banking services provided by Rastiya Banijya Bank, Agriculture Development Bank, Nepal Investment Bank, Bank of Kathmandu and Madhyapaschim Gramin Bank. However, these services are limited only to the district headquarters. Although there are a few cooperatives, none of them have microfinance schemes.

The remoteness of Jumla has restricted the accessibility of government services to the people as well as the government's outreach towards the people. The high value agriculture products grown in Jumla, such as, apples, walnuts, vegetables, herbs have not been able to flourish due to the lack of appropriate technology and facilities for storage, packaging, marketing as well as transportation.

Jumla has potential in small scale farming and local businesses if resources are tapped properly and invested upon. These areas could generate sustained income opportunities for the people of Jumla.

Study Approach

Research methodology

- 1.1. Research design-** The study is carried out in four VDCs of Jumla district to find out from a cross-section of beneficiaries of KASDA, HVAP, PAF and World Vision about their involvement in livestock farming, apple production and promotion and herb cultivation and their contribution in their livelihoods. The study will engage the respondents in Focus Group Discussions to understand the problems and challenges faced in the areas of concern and analyze their potential in sustaining their livelihoods. Contacts with the respondents will be made through KASDA, with the help of two social mobilisers allotted for the purpose of the research. The Focus Groups will be formed on the basis of the availability and willingness of the beneficiaries of six COs in four VDCs, namely, Chandannath, Talium, Kartikswami and Mahatgaun. One case study will be conducted on a veteran agriculturist at his home in Raddikhela. Data are collected to understand the relationship between different factors affecting the livelihood of individuals, which in turn would help in developing new programs or recommending interventions to enhance the sustainability of livelihoods in the region. The findings would be analyzed in collaboration with the Daayitwa Team and upon finalizing it would be disseminated through panel sessions, symposium and online forums.
- 1.2. Research site-** Jumla was identified as the ideal site for the purpose of the study, owing to accessibility of terrain and local support. Since it also has a better standing in the region in terms of development, the existing resources could be brought to limelight and opportunities further explored and present it as an exemplary district for the rest of the region. Four VDCs, namely, Chandannath, Kartikswami, Mahatgaun and Talium were visited during the course of study.
- 1.3. Nature of data-** Primary data were collected through Focus Group Discussions (FGDs) with the respondents and interviews with the Key Informants and the subject of a case study. These are present in the form of notes, field observations and video clips.
- 1.4. Data collection methods/techniques-** Mostly Focus Group Discussions using open ended questions were applied to gather information from the respondents. In one of the occasions, case study method was used with one of the respondents, since it was important to understand him and his decisions in the presence of a certain setting and context.

1.5. Sampling- Purposive sampling technique was used over a sample size of approximately 35 respondents in each of the focus groups organized in 6 community organizations. Samples varied in the nature of the group. Three COs in Chandannath, namely Unnatisheel, Nayabasti and Ekata comprised of Dalit men and women, mixed group of all women including Brahmins, Chettris and Janajatis and Dalit men and women, respectively. Similarly, in Kartikswami, Kalyan CO comprised Dalit and Gair Dalit men and women. Janajagarn CO in Talium saw the participation of only Brahmin and Chettri women and Siddhapaila CO in Mahatgaun comprised Chettri and Dalit women mostly and 2 men. A case study was conducted on Ram Krishna Thapa, an agriculturalist by profession at his home in Raddikhella.

1.6. Data analysis process- Data collected was transcribed and the relationship between the inter-connected influences, such as the social, economic, ecological and political environments was studied along with the relationship between the respondents and these variables to be able to suggest activities or plans for development. Also the information collected from the six different groups of respondents from six community organizations were compared to address their issues and suggest recommendation for the same.

Limitations

The duration of stay in Jumla had to be shortened due to the unexpected turn of event following the Gorkha Earthquake that shook Nepal on April 25, 2015. Therefore, visits that were planned to offices concerning the study had to be called off, which could lead to inadequacy of first-hand information of the project specifics, such as livestock farming and production and value chain analysis of apple. As transportation facilities to Jumla are expensive, a second visit was not a feasible option for further clarification.

The social mobilisers used for the purpose of the study are employees and the respondents are beneficiaries of the same organization, Karnali Sustainable Development Academy (KASDA). Although unidentified, there could have been an unintentional pouring of several problems in the presence of the mobilisers.

Key findings

Approximately 215 respondents from six beneficiary community organizations of Karnali Sustainable Development Academy (KASDA) sat for a focus group discussion in the span of 3 consecutive days to talk about their engagements in livestock farming, apple production, herbs production, their engagement in the promotional activities of their home grown products and the existing problems and challenges that have surfaced owing to the same activities. Their aspirations for themselves and their future generations were identified to help us understand where they stand and whether they have been successful in enhancing their abilities to sustain their livelihoods.

It was found that majority of the respondents were engaged in the informal sector. Most of them have taken to livestock farming inclusive of cattle (cows and buffaloes) goats, local horses, rabbits, pigs and sheep. Some are engaged in poultry farming, whereas the others either run local businesses, such as convenient store, tailor shop, restaurants, organic farms and vegetable farms. In two of the groups, we encountered two teachers from Karnali Technical School (KTS) is one of the most reputed educational institutes in the region), a shaman, a beekeeper, a staff nurse, a health assistant and an owner of a nursery where people bought seeds and plants. Apple production is one the salient features of Jumla's economy, as apples orchards are a common sight in every household. However, the economy fostered by apples is limited to about 2 months post-harvest in August- September, and for the rest of the year, they have to depend on other alternatives to apples. Non-timber forest products (NTFP) are abundant in Jumla in the form of herbs, however, only a minority of the people are involved in herb collection, processing and distribution.

1. Livestock farming

Livestock farming runs in the veins of Jumla. An ancestral occupation, it has been passed on for centuries from one generation to another. However, not without much improvement. Livestock are assets in Jumla, they're used as emergency capital, for nutrition purposes (milk, ghee, meat), as soil nutrients (manure, urine), transportation, animal fibre and are associated with religious sentiments.

1.1 Cattle

1.1.1 Problems

1.1.1.1 Insufficient loan amount

The majority of the respondents claimed that although various organizations, especially KASDA, had arranged for direct benefits to them, they were still deprived from using the provided loan to buy better breeds of cows and goats that yield more. Cattle, including cows and buffaloes are used by most of the farmers for milk that they use for both consumption and sale, manure for their farms as well as for sale,

ghee preparation, and for religious purposes. There are equal number of people that choose cows over buffaloes and vice-versa, depending on varying factors, such as benefits they reap from selling their products, time factors, animal breed, monetary factors as well as religious purposes. It was found that a few respondents who had access to better monetary opportunities reared higher quality of cows, such as Jersey that yield more, thereby enhancing their economic status. It was observed that individuals possessing Jersey cows that are of a relatively higher breed take pride in announcing that they own one and others automatically expect them to be faring well in economic aspects. These higher breeds produce 4 times more milk than an average local cow that most houses have in Jumla. As a reason for not possessing one, the respondents claim that the loans provided by the benefactor are not enough and that it had to be raised at least by 30 percent to seek benefit from them.

1.1.1.2. Collection of forage and buying seeds

In addition to the provision of loans, they mentioned that collection of forage and seeds is a major problem. Forage is scarce during winters, and seeds are very expensive. Most of them are unaware as to the proportions in which these should be fed to the cattle. During winters, especially December onwards until April, cattle lose 7 to 8 kilos of their body weight, which also reduces their production by almost half.

1.1.1.3. Traditional cattle sheds

Cows and buffaloes are accommodated in old and traditional sheds without proper sanitary facilities. The sheds are dark and cold and have been a major source of bacterial infections.

1.1.2 Solutions by respondents

Many solutions cropped up from interaction with the respondents. As they poured their hearts out, speaking of myriad problems, they would also hint various solutions that they were aware of but hadn't put them to practice. Some men and women mentioned that almost all of them in the village had taken up those professions and activities that had been passed down to generations and they had been pursuing them without giving it a second thought. Women, mainly expressed that they were responsible for an overwhelming chunk of work on a daily basis, including, fetching firewood, farming, taking care of children and other domestic chores, grazing their cattle or taking care of livestock, taking care of apple orchards and handling their businesses while preparing for the next day. They said they hardly have time to think of the problems they face and alternatives to them. When the male respondents suggested that one individual should opt for only one line of work without engaging in other activities, the female respondents immediately gestured that they would not be able to fare economically well if one chose just one line of work.

Most of them want better sheds with modern physical infrastructure for their cattle, one that can keep them warm during the winters and where their feed could be stored without causing it much damage. They said they had heard places in Bandipur and Gorkha that use new technologies to support livestock

farming and wished to learn more about them. Trainings are considered as powerful ways of educating the people in Jumla. Trainings are thought to be essential as they would equip the farmers with the knowledge and understanding of the feed, health and sanitation requirements of the cattle they own. Although, the respondents had received other trainings, they have rarely received trainings on cattle rearing.

1.2 Goats, local horses, pigs, rabbits

1.2.1. Problems

1.2.1.1. Contamination by unknown diseases

Farmers in Jumla rear goats mainly for meat, milk and breeding purposes. They have been a major source of income for many poor families. Some claim that rearing goats has proven very beneficial for them, whereas some claim that they had to leave the profession due to uncontrollable deaths of goats by some unknown disease. The respondent exclaimed that her investment had gone in vain and that she is thinking of opting for beekeeping instead, because it has proven profitable, is easier to take care of them and consumes less time.

1.2.1.2. Fear of wild animals

Rearing goats is difficult when it comes to protecting them from the foxes and jackal that encounter them on their way to grazing.

A majority of those respondents engaged in goat farming were happy with their outcome, however a few suggested that if they could have a male goat of a higher breed, their production could increase by manifolds.

Local horses in Jumla are mainly used for transportation purposes and are generally owned by Adivasis and traders who use horses to load goods to take them to various trading points. Horses are seasonal beasts of burden and are one of the most scantily reared animals in Jumla. They are not sheltered in stables but tethered to logs in open grounds. Respondents who take to horse rearing also engage in other activities for income generation, like weaving, carpet making, and other small businesses.

Very few respondents reared pigs, one due to the notion of unhygienic that is attached to the animals and other because most of the families recognized themselves as non-pig consuming families. However, pig rearing has proven profitable for those engaged in it. The demand for pig meat is very high at the army and police barracks and if one can cater to their requirements, their household income would be enough to support a family. They claimed of no such problems in association with pig rearing.

The rearing of rabbits for economic gains is a recent phenomenon. Those who kept rabbits mainly sold them for meat, and one claimed that it was out a sheer interest. Although rabbits do fetch some earnings for an individuals, they alone do not suffice the economics demands of a household.

1.2.2. Solutions by respondents

Contraction of bacterial and fungal diseases is seen as one of the underlying problem in the rearing of goats, horses, pigs as well as rabbits. The respondents wish to seek adequate and relevant trainings on sanitary and healthy ways of rearing their livestock. If finding a veterinary is a struggle in Jumla, transporting the animals to clinics that are located further away from the residencies is a tougher battle for the respondents.

Adequate training would help them understand the disease symptoms and treat them via local means and procedures. Feed scarcity, which is one of the pertinent issues in Jumla, could be minimized if people knew of other food and forage items that could be fed to the animals apart from the forage and grains they have been feeding them.

2. Apple production and promotion

The history of apple plantation in Jumla dates back to the 1970s when the then Nepal Government introduced apples grown in Himachal Pradesh of India to a similar climatic zone of Jumla which has proven suitable to one of the delicious home grown apples. About 10 varieties of apples are cultivated in Jumla, the most common of which are the Red, Royal and Golden Delicious Apples, which make around 70 percent of the total plantation. Other varieties include Jonathan and Macintosh that account for 10 percent of the total plantation (A Value Chain Analysis of Apple from Jumla, MoAC and SNV, 2011)

According to CBS (2011/12) report, 11,816 holdings of apples that account from under 0.1 hectares to over 10 hectares were reported to be grown in Jumla. Compact plantation of apple trees of both productive and non-productive ages were cultivated on 520.7 hectares of land. 144,097 trees were found to be of productive ages and 484,221 trees of non-productive ages. These figures combined plus those that are scattered accounted for 14 thousand holdings of productive ages and over 18 thousand holding of non-productive ages. This provides Jumla with over 30 percent of production capacity of apples followed by Mustang, a western mountain district in Nepal (SNV, 2011). Apple is therefore, one of the most important crops in terms of area coverage, production and household economy in the district (Lama, U. 2010, Spotlight News Magazine).

The commercial demand for apples in Nepal was estimated to be more than 20, 000 metric tons (Lama, U. 2010). And around 90 percent of the demand deficit for apples was met by imports from the biggest import destinations, China and India. This leaves Jumla with room for greater potential to supply and cover the deficit demand for apples in the country along with other homegrown apples in different districts of the country.

1.1. Problems

Almost all the respondents grew apples even in the tiniest of land they owned. Almost every respondent, both male and female know that the district is well lauded for its organic apples, however, they are infuriated that they can't sell their apples any longer than 2 months upon harvesting them in August through September due to lack of storage facilities. The respondents of 3 VDCs opined that they have not had any type of storage facilities for apples, whereas, the respondents in Kartikswami VDC claimed that Himal Multi-purpose Cooperative had supported them with one storage cell. Although, a great start to preserve the apples, the respondents are of the opinion that they would need 3 to 4 more of the storage cells to accommodate apples grown by the community members, from around 20 households. Some suggested that they need cold stores with AC fitted in them, whereas the agriculture teachers and experts seated among the respondents suggested that traditional mechanisms with water channels constructed with the cells was enough to preserve the apples for at least 6 months post-harvest.

1.1.1. Grading of Apple

Other such problem mentioned by the respondents was regarding the grading of apples. Jumla, since becoming a certified organic district of Nepal is trying hard to carve its niche in the organic market. But due to lack of monitoring on the grading system, the apples are not sold at stipulated prices.

1.1.2. Market management

The concept of free market does not to work for a lot of apple farmers for a majority of the responded suggested that they do not know where their market is or who are the distributors they should deal with. The respondents believe that some people exercise monopoly in distribution and sale of apples in market. Some term it as lack of proper management of market.

1.1.3. Animal trespassing

Only one group of women interviewed in all 4 VDCs mentioned the troubles they are facing due to animal trespassing into their apple orchards and destroying their saplings. Animals like buffaloes and goats could not be tamed into not trespassing, therefore, they need fences or barricades, like barbed wires to protect their samplings from being eaten or derooted. They are of the opinion that the benefactors need to make fencing easily available to their beneficiaries for lower costs.

1.1.4. Treatment of apple saplings and trees

Apple trees need to be maintained and protected from diseases and pests. They need proper pruning and sufficient rain during the flowering season in April. A lack of understanding of the symptoms and the types of diseases have caused the degradation of the quality of apples. Apples that could be sold for Rs. 30-40 per kilo are sold for almost half because of such problems. Pruning requires technical knowledge and practice, some respondents mentioned that they had attended trainings organized for them, some

showed complete ignorance and some mentioned that they had skipped it in spite of their knowledge of it. Since becoming an organic district in 2007, the farmers have not been able to use pesticides for the prevention of pests. DADO has authority over these matters and yet they have not provided the farmers with any information regarding the use of bio-pesticides.

1.1.5. Absence of unity among community members

When it comes to apple preservation and the use of cold stores, responses from a 3 community organizations suggest that there is lack of unity and cooperation among the members of the community. When a respondent suggested working different group collectively farming for apple production, a few of them pointed out that they fall short of patience and team work, and it was evident from the blame game they were playing against one another. Also, there have been cases of loss of apples from one's cell at the cold stores, which has prompted people of the same community to store apples at other storages away from their VDCs.

1.1.6. Lack of equipment for apple products

Besides apples, apple products can also create income generating opportunities for people in Jumla. Respondents name the different apple products, such as, chips, apple cider, apple jam and jelly, apple juice, apple pulp, apple brandy and apple wine, all of which can be locally produced without much investment, advanced physical infrastructure and technology. Most of these products, apart from apple wine and brandy, require cost effective and simple equipment that they do not possess. Therefore, none of the respondents, except one in Unnatisheel Community Organization had produced anything from apples, in spite of the trainings and ample knowledge on the processes required for making the products. One of the respondents in Mahatgaun VDC said that the apple seeds were being sold at Rs. 30,000 per kilo, which is highly expensive for nursery holders.

A majority of the producers are not equipped with an understanding of the market. They are not aware of where their apples go from Jumla apart from Nepalgunj and Surkhet, the closest trade destinations, they do not know who their buyers are, or the processes that apply for promotion, or if they can approach private owners for collaboration.

2.2. Solutions by respondents

Respondents believe that their biggest victory would be in organizing their benefactors to build cold store for them with cell lockers to preserve them without the fear of apples being stolen from their chambers. Another group of respondents want fencing system implemented in their VDC to stop animal encroachment on their apple orchards. A part of the solution that they think is mandatory is a training program. Members of one of the community organizations mentioned that none had approached them to inquire about their situation or understand their concerns, prior to the study.

The respondents are of the opinion that grading system should be monitored by the cooperatives, and not limit it to just an understanding between stakeholders. A few respondents mentioned that the equipment for preparing apple products should be arranged for subsidized rates so that people can

easily buy them. They added that frequent trainings should be organized that incorporates not just the pruning practices, or about the diseases but also about the use of bio-pesticides and bio-chemical fertilizers.

Respondents with apple nurseries suggested that the local state bodies should sell the seeds at subsidized prices. One of the respondents in Chandannath VDC mentioned that it is also very important for each individual to identify the challenges they are facing and come up with solutions to them in front of their benefactors for support and that, it is up to them to identify the organizations or institution that can help them.

3. NTFP products: Herbs

3.1. Problems

3.1.1. Insufficient capital for investment

One of the female respondents in Chandannath VDC shared that she collected *Yarshagumba*, a medicinal herb every year but the investment capital which is around Rs. 50,000 to Rs. 60,000 is not enough for Yarsha production as labor is very expensive, so, she just picks them and sells them when a certain number of it is collected.

3.1.2 Lack of awareness of the economic benefits

Some respondents mentioned that there had been a few organizations that had approached them for trainings and even allocated funds for them but they were the ones who chose not to attend them. They said that they had not been able to realize the economic advantages of herb production and collection back then. Not all of the respondents were engaged in the cultivation or collection of herbs as in the case of livestock farming and apple farming. Some of them had tried their hands at herb cultivation, and then left not having recognized its market and potential for income generation. One of the female respondents mentioned that some herbs just grow in their doorsteps, some grow as wildlings amidst the rocks, and they know what their benefits are but never thought of taking it up as a business. They have heard that collectors from Surkhet and Nepalgunj come to Jumla for herbs collection to sell them to India for medicines, but they have seen no evidence of it. A respondent shared that she had tried planting *Satuwa*, but the climate and environment weren't feasible so she stopped cultivating it. Some respondents had tried cultivating *Gucchi* mushroom but had failed because they were hard to protect.

3.1.3. Lack of interest

Another respondent had tried her hand at cultivating *Padamchalo*, but she wasn't very keen on increasing its production since it didn't seem of much importance to her. Her opinion was that had they received trainings or made aware of the market for herbs, they would have engaged in their production.

Case Study

Introduction:

An agriculture teacher by profession, 70 years old Ram Krishna Thapa has always been interested in widening his interests and horizons. With a hectare big land to his possession, he enjoys calling himself an innovative agriculturist. To those who believe that there is no limit to what one could do, Mr. Thapa reassuringly claims that there are a lot of possibilities in Jumla, if only one opened his/her eyes and is supported by the State.

Start of a movement: Success stories

Experience with apple cultivation

Not wanting to limit his knowledge and expertise to teaching alone, Thapa started to experiment in agriculture by growing apples, when saplings from Himachal Pradesh were introduced in Jumla for the first time around 2023 B.S. Priced at only 25 paisa per sapling, Thapa remembers buying quite a few that needed to be accommodated on a bigger area of land than his home. And that, was his first step into becoming the owner of his bit-by-bit acquired land in Raddikhela that contains eclectic subjects of study, such as birds, animals, plants, a powerhouse, a flour mill, a distillery, a fish pond and beehives. Apples grew in abundance, in his orchard and the others' as well, too many to be consumed by the locals alone.

Their investment in apple farming was hit hard since their access to market was obstructed by the lack of roads and transport facilities, and as a result many took to cutting the trees down. Thapa, however did not give up and kept expanding his orchard and utilized the apples as feed for livestock and preparation of toddy. He is now a happy man, since the apples have found their market and are easily transported to various parts of the country with the recent access to road and transport facilities.

Herbs Cultivation

Thapa is more attracted by the lucrative prospects of herbs cultivation. A name synonymous to the herbs sector, he believes that herbs, such as, *Yarsagumba*, *Guchhe mushroom*, *Kutki* and *Katuko* that were recognized by their forefathers have been financially supporting the low income families of Jumla for decades. These herbs were collected from the forests by the natives and taken to Nepalgunj to be traded with salt, oil and clothes. In the years that followed, when poverty and unemployment struck the region, many people who were aware of their value would fetch these herbs in an unorganized and unscientific manner and sell them to whoever gave them some money, consequently threatening their existence. Thapa knew of their importance, therefore, started their cultivation and production in the sheer hope of trying to save Jumla's degrading economic condition.

Thapa recounts how the educated people in Jumla were wary of agriculture, as they associated with work done by the uneducated, ill-equipped, unskilled and relatively poorer people. People were surprised that Thapa had taken to not just teaching but practically engaging in agriculture. Although he

was looked down upon by a few people in Jumla, including his near and dear ones, he persisted and kept studying, experimenting and cultivating herbs that he would collect from the forests. It was a difficult task and a challenge that he had taken upon himself. However, he was successful in proving its worth to the people when Dabur Nepal approached him to lease his land for herbs cultivation for a project worth 1 crore, funded by IFAD. He had become the example that he always wanted to be for the people. Farmers and other agriculturists had started approaching him for seeds and saplings, different people came to him to learn from him and get trained by him. Soon after, he had become the resource man for herbs, apples, beekeeping and livestock farming.

Other interests

Moreover, with a powerhouse of his own, he generates electricity for his own house and other requirements, he irrigates his land on his own, he has constructed a private distillery with support from HIMALI project, where he prepares herbal products like essential oil and medicinal oil. He has got his own customers, and is certain that other people would have their own customers too, if they invested their time and effort to it. With all this and more, his land has become a source of additional income for him. People from different offices and organizations bring in their technical experts to show them around the place and engage in practice by paying a certain amount of money to Thapa. This way, he believes that he has been very actively participating in the development of his district.

Anticipation from the government

Problems

The gravest problems lie in the inefficiency of the State to act in favor of the people of the country. The state has demonstrated a promotion of crippling mechanism in Jumla. When it provided the region with apple saplings, it deprived them of roads and access to market. When the country and the people of Jumla could have simultaneously benefitted financially from cultivating herbs, the State did not take notice of their rapid destruction in the forests. When people have realized the profit that herb cultivation could generate, they are obligated to abandon it for the lack of time that they can afford to spend on it apart from agriculture. More than 90% of the population of Jumla are involved in traditional agriculture that makes up their daily earning, pays for their children's school and other daily expenses. A majority of them run their lives without any savings in case of contingencies. Such constraints have deprived most of the people of Jumla to invest in something different or enterprising. Jumla's lack of proper roads and electricity are other reasons that have deprived the people from setting up industries, one way that could generate productive employment in the district. Therefore, till the residents of Jumla are bound by traditional agricultural practices- especially at present times, when the expenses exceed our earnings- farmers will continue to live impoverished lives, and no development can will be seen in Jumla. Adding to the dismay of the region, most of the products consumed by the local residents, such as vegetables, fruit, mutton, chicken, various food items are either imported from Nepalgunj or India at the cost of the region's economy.

Solutions and recommendations

Thapa is of the opinion that the State has a major role to play in the development of any region of Nepal. For Jumla, specifically, the State and the representatives for different political parties should act their parts by encouraging more research work in Jumla, so as to understand its situation and the necessary steps to be taken to improve it.

Learn from practices of neighboring countries

The Indian Experience

Thapa cited an example of Dehradun and Chattisgarh in India- places he has been to in the course of his research and trainings- while talking about how the government could encourage the people to promote herbs cultivation. He emphasized that the government could lease unoccupied lands and mobilize people to cultivate herbs in a systematic manner, provide loans with minimum interest to those who wish to try their hands at it, provide ration in subsidized rates to those below a certain wage or income line so that the farmers would be motivated to engage in herb cultivation without having to worry about the next meal, provide land for the establishment of cooperatives that could bridge the gap between the districts and the central state. Thapa was impressed by how the governments of those states would study different markets of different countries to identify if there could be a demand for their home-grown products and accordingly store them or supply them, and provide the famers with their wages or salaries.

Learnings from China

Similarly, if the government of Nepal utilized its resources and channeled them correctly for the benefit of the people, there's a lot that the nature can offer and quite more what the government can do. For instance, they could utilize the state money to go to China, carry out a research, seek trainings or learn the process and mechanism of growing *Yarsagumba* inside a room. This could benefit Nepal immensely. Blue sheep considered as one of the endangered species in Nepal is generally guarded within the territories of national parks and conservation areas. However, Thapa claims that limiting them to such conservatories hasn't improved their situation, on the contrary they're being killed without notice by authorities who claim to be protecting them. Therefore, he is of the opinion that the people living in higher altitudes of Nepal, wherever possible, people should be allowed to pursue blue sheep farming by the government. Their naval extracts, highly valued for its medicinal properties, could generate huge profits for the people of Jumla and other regions of Nepal as well.

His travels, experiences and learnings have helped him identify the elements that could develop his district; irrigation, hydropower, road construction, promotion of organic apples, production and promotion of herbs and tourism being a few extremely crucial countable things. He believes he has been setting an example for many entrepreneurs and local people in Jumla and hopes that one day the resourceful district prospers and people don't feel ashamed to call themselves 'Jumlis.'

Discussion

The findings suggest that various organizations working in Jumla with the goal of improving rural poor livelihoods have taken steps to call people for trainings and workshops, be it related to livestock, apples, vegetables, herbs, or beekeeping. Among the respondents interviewed there were always a certain number of people who had heard about them and attended, heard about them and not bothered to attend or simply not heard of them therefore, not participated. A lot of responses regarding the problems and challenges they have faced were reiterated by individuals from almost all of the community organizations, except one in Kartikswami VDC where the respondents focused on the potential of Jumla region in the production and promotion of apples and herbs, the emerging trend of beekeeping and its advantages and suggested activities that could be performed rather than emphasizing on what the benefactors hadn't done for them. Although, almost all respondents agreed to be in a better position in terms of access to, availability and control of socio-economic opportunities than in the past, it was seen as a common characteristic of people to expect service delivery from benefactors rather than approaching them for their need requirements.

It was agreed among the respondents that Jumla has utmost potential for apple and herb production, however, owing to the lack of knowledge of the market and the actors involved in it, they have not been able to supply in spite of the increasing demand for their products. They correlate their lower economic status to the lack of delivery of services, such as skill based trainings and workshops on value chain analysis, exposure activities, provision for subsidies, by their benefactors and the State; whereas some correlate it with their indifference towards their present state and their laid back attitudes when it comes to learning new things, seeking opportunities and building their region.

Although, the respondents had more faith in the NGOs and INGOs operating in Jumla, they want the government bodies to be more active and play a visible role for the development of the region. The respondents want the central government to be more responsible towards the people of Jumla and devise a development strategy that is inclusive of people of all regions, irrespective of their geographic terrain and location. There are a lot of lessons, pertaining to the governance mechanism that the Government of Nepal (GoN) can draw from its two big neighbors to improve the situation of economically challenged people of Jumla.

Vision for Jumla

In light of the third objective of the project, i.e. to develop an inclusive and collaborative strategy to overcome the constraints of the poor population in Jumla, so as to enhance their ability to sustain their livelihoods, the four active organizations and their work in the field of sustainable livelihood development have been taken into consideration in an effort to build a collaborative strategy. The four organizations, also the benefactors to the respondents interviewed for the project, are Karnali Sustainable Development Academy (KASDA), Poverty Alleviation Fund (PAF), World Vision International Nepal (WVIN) ADP Jumla and High Value Agriculture Project (HVAP).

During the course of the study, a few fundamental needs, such as good education and proper schooling for children, literacy programs for illiterate men and women, power for household, ability to save, visit places within Nepal for exposure and understanding of the outer world echoed among all the male and female respondents across all castes and ethnicities.

The findings suggest that the key to improving the livelihoods of people in Jumla is through poverty reduction or income generating activities that not just suffice for household expenses but those that can also contribute to their savings for the future.

Karnali Sustainable Development Academy (KASDA)

KASDA is a local NGO that was selected by the High Value Agriculture in the Hill and Mountain Areas (HVAP) under the Public Procurement Act 2007 and Regulation 2008 of the Government of Nepal (GoN). KASDA works to build and promote local capacity development among its target groups.

Most of the respondents in the study were beneficiaries of KASDA. Social mobilisers are deployed by KASDA to coordinate trainings and programmes in 38 of its community organizations. All the concerns and suggestions of the respondents were noted by the mobilisers and dealt with separately.

Findings- Most of the respondents

Poverty Alleviation Fund (PAF)

PAF is implementing targeted demand-driven community based programs that directly support Poverty Reduction Strategy Paper-PRSP (Tenth Plan) of the Government of Nepal (GoN). Along with Jumla, it covers 64 different districts, including 25 such districts categorized as the most deprived by CBS/NPC based on the 28 poverty related socio-economic indicators. Upon identification of the community demand, several activities in line with Income Generation and Infrastructure sub-projects are proposed and included in the program implementation. These income generation activities are related to agriculture, livestock, cottage industries, trade and services.

In Jumla, PAF has been particularly active in building community infrastructure, such as the promotion of entrepreneurship through capacity building and technical backstopping, which include capacity development of women in technical skills, market linkages, product development and design.

Findings- The report findings suggest that among the respondents interviewed, quite a few of the women had undertaken trainings under PAF, however, most of them shared that they had remained disjoint from capacity development programs in market linkages, product designs.

World Vision International Nepal (WVIN) ADP Jumla

World Vision International Nepal's (WVIN) Area Development Programme (ADP) is their primary approach to carry out the transformational development in the community where they work. ADP is a long term development program spanning from 10 to 15 years, in which WVIN works with the poor and its partners in specific, defined, targeted geographical locations to address micro and macro poverty issues in the sectors of Maternal Child Health and Nutrition, Education, Livelihood, Water, Sanitation and Hygiene and HIV and AIDS.

In Jumla, their works have been primarily engaged in social mobilization, income generation and community infrastructure, capacity building, material support and advocacy programmes.

Findings – the respondents of the study rarely mentioned the benefits obtained from and income generating activities introduced by WVIN's ADP.

High Value Agriculture Project (HVAP)

High value agriculture project in hill and mountain areas is a joint effort of the Government of Nepal (GoN) and the International Fund for Agricultural Development (IFAD). It is executed by the Ministry of Agricultural Development (MoAD) in partnership with the Netherlands Development Organization (SNV) and the Agro-Enterprise Center (AEC) of the Federation of Nepalese Chamber of Commerce and Industries (FNCCI).

The main purpose of HVAP is to integrate the rural poor, especially women and marginal groups in high value agriculture and Non-Timber Forestry Products (NTFPs)/Medicinal and Aromatic Plants (MAPs) value chains and markets, and improve income, employment opportunities and ability to respond to market demand and opportunities based on marketing agreements with private agribusiness (HVAP, 2015).

Findings – Although the name HVAP resonates in the air of Jumla, and are visible on signboard along the market alleys, the respondents shared that HVAP had done much in the area of apple production and arranged for trainings on product manufacture and design. However, the learnings had been limited only to the trainings and not otherwise due to the lack of adequate space and equipment.

Very few of the respondents had tried their hands in herb production and its promotion as they claimed that they were unaware of their varieties and their demand in the market.

Recommendations

1. Apple promotion

The recent opening of the highway route from Jumla to Nepalgunj and Nepalgunj to Kathmandu and vice-versa has made the end destinations more accessible and relatively cheaper. If apples have to be chartered in planes to reach Kathmandu, they can be done by buses. This could lower the prices of the apples in other districts and increase the demand for them in Jumla.

Similar to cold storages built in Kartikswami VDC, Khalla Gaun and Urthu of Patmara VDC- built by Himal Multi-purpose Cooperative and HVAP, respectively- other Cooperatives of State bodies could build at least one cold storage in each VDC so that farmers could sell apples even during off-seasons at a relatively higher price. Apple production, by and large will remain one of the important income generating activities for the people of Jumla. Since, most of the Dalit and Janajati families have started growing apples, they are capable of entering this sub-sector, whereby apple production could also become an effective means of nurturing social inclusion in Jumla.

Jumla could be made a tourist sector, as well. The cooperatives working in value chain of apples could conduct a once-in-a-year “Apple Picking” fest, especially as an attraction for internal tourists and agriculture students. This could promote the tourism sector in Jumla as well as open opportunities for people working in other sectors and their product promotion.

2. Renewable energy

Similar efforts like the channeling of renewable energy through National Rural and Renewable Energy Programme (NRREP) in coordination with the Government of Nepal (GoN) that started in 2012 and runs till 2017 could be introduced in Jumla as well. Along with renewable energy, such programs could increase credit financing for renewable energy technologies, prioritize productive end-use of energy and job creation (Geelan and Petterson, 2014). The support received from Denmark and Norway and the government of Nepal through the energy sector assistance programme, together with the ministry of science, technology and environment, the alternative energy promotion center and the private sector have been providing renewable energy benefits to more than 1.1 million households in Nepal, Jumla being one of them. If every household in Jumla was to receive such facilities, the women would not have to fetch firewood, the house would remain smoke-free, children could study for longer hours and women would suffer less from health hazards.

Time invested on firewood collection, used mainly for cooking and boiling water, could be minimized by investing in biogas production. Although the possibility of using LPG seems high in Jumla, they are exorbitantly priced and it would become a burden for many if they were to become a trend in every household, just like it has become one among the more financially sound families. A biogas plant would be cost effective and a time saver for working females in Jumla. 15% of the households having cattle in

Jumla could be considered as potential users for biogas (Sustainable Energy and Technology Management, 2013).

Renewable energy would cater to the demands of women and parents who wish for brighter future for their children. This would save time that could be utilized in other income generating activities for the family.

3. Medicinal herbs production and promotion

In February 2015, the International Center for Integrated Mountain Development (ICIMOD) and Business Service Center (BSV), an NGO in Jumla district, had collaboratively provided hands-on training on bio-briquette preparation and herb cultivation and propagation to a group of women from Jumla at Godavari, Kathmandu.

Also, in the presence of two herbs processing units in Jumla, namely, Karnali Jadibuti Prashodhan Kendra and Rin Moktsha Jadibuti Uddhyog, Dabur Nepal that has its producers and collectors in Jumla could promote herbs cultivation and propagation and a create a demand for these medicinal and aromatic herbs in the national and international markets.

The government has to have a role in promoting the herbs of Jumla. It should recognize the customers, dealers and companies that are interested in aromatic and medicinal herbs and facilitate the trade by cultivating herbs, building infrastructure, constructing roads, holding trade fairs in and out of the country and creating legal platform for herbs promotion and business.

4. Micro credit and microfinance services

Nepal Rastra Bank (NRB) has made a number innovative attempts to develop a microfinance framework in the country. Instances from Bangladesh and India suggest that these microfinance services have been successful in providing access to money to the poor, generating employment opportunities by the formal and semi-formal microfinance institutions and identification of problems face in attaining financial sustainability.

In Jumla, Some of the respondents in some community organizations had started using a rotating credit system as a financial mechanism to promote cooperation among the community members and provide financial assistance to those in need. The interest earned in these systems is nil, therefore, if microcredit or if possible microfinance could be introduced as a mechanism for them to save as well as earn interests on their timely contributions. Some of the respondents mentioned that they kept their savings with them and not at a financial institution. If there was a mandatory design set for all the beneficiaries in various community organizations to help them save and earn interests on them, the complaints regarding the paucity of funds for their businesses could become lesser and people could start using their own money to fulfil their requirements.

5. Creating Jumla as an Economic Zone

Back in 2011, the Ministry of Industry had decided to make Jumla one of the SEZs of Nepal, along with Bhairawa and Kapilvastu. And as assistance, the government was to build infrastructure and provide tax incentives to the workers. There had been news about the SEZs exporting 75% of their total production.

The SEZ bill was never came up, however, Jumla could still be made a resource center for herbs and processing, for organic fruits, walnuts and vegetables, a hydropower hub, a tourist destination that could interest the Great Himalayan Trail and the historic significance of Sinja, where *Khas*, the original language of Nepal is still spoken could be capitalized to attract both internal and external tourists and students of various science and social science disciplines.

Moreover, the musk deer could be allowed to be reared by the locals under the invigilation of security forces, without restricting them only to the national parks.

Conclusion

Over the years, numerous governmental and non-governmental agencies operating in Jumla have been making efforts to improve situation of agriculture, livestock, horticulture, cottage industries, infrastructural development elements, such as, drinking water, irrigation, tracks, bridges, rural services, etc. While some projects have been successful, some are still underway. The above 90 percent of the people, who continue to engage in agriculture still live in dire conditions ruled by inadequate supply of electricity, productive employment opportunities, drinking water, technical knowledge, skill-based training, proper education in government schools, health facilities.

Most of them continue to carry on their traditional occupations, such as, livestock farming, agriculture, apple and walnut cultivation and are not in a position to give them up for other opportunities without guaranteed financial assurance. Their lives depend on these traditional practices and they're all they have known to do in their lives. Livestock farming and apple cultivation have contributed to the income of many households. The respondents could pay for their children's school and at favorable times, even saved some for future needs. With additional benefits such as modern sheds, timely check-ups, vaccines, trainings on livestock rearing, access to better breeds of cows and goats, quality grass, and higher loans with lesser interests could improve their income generated through livestock farming.

Jumla has adequate resources to generate employment for its population, however, lack of proper planning and policy implementation by the central level has eroded the confidence of people in the government. The respondents believe that if the government focused on herbs cultivation and processing, apple cultivation, manufacture of apple products and their promotion, introduction of better breeds of cows and goats that produce more milk than the local breed, provided technical support to build modern sheds, provided irrigation facilities, generated hydropower, mobilized the local residents in construction and if made a tourist destination or route to Mugu, Dolpa, Kalikot, Humla, people would be in an economically better position, capable of sustaining their livelihoods and Jumla would develop in manifolds.

Annex

Annex 1: Day-wise agenda

The research was conducted among Dalit (men and women), Janajatis, Brahmin and chettri men and women who are beneficiaries of Karnali Agriculture Sustainable Development Academy.

1. To understand the activities that the people of Jumla are engaged in for their livelihood.
2. Considering it is one of the most underdeveloped regions of Nepal, the study also looks to understand the challenges and problems that people face in their daily work lives and to come up with ways that could solve the existing bottlenecks for improving the quality of lives of the people, mainly through the promotion of economic activities.

Day 1	Place of visit	Community organization	Approx. no of people gathered	Division based on caste and gender
a.	Chandanath VDC	Unnatisheel	47	Dalit women and men
b.	Chandannath VDC	Nayabasti	35	Brahmin, chettri and janajati (all women)
Day 2				
a.	Kartikswami	Kalyan	20	Dalit and Chettri women and men
b.	Talium vdc	Jana Jagaran	22	Chettri and Brahmin (all women)
Day 3				
a.	Chandannath vdc Dadakot	Jana Ekata	32	Dalit men and women
b.	Mahat gaun Micha	Siddhapaila	25	Chettri and Dalit men and women

Annex 2: Questionnaire design for field study

For the purpose of the study, questions asked were concerning the following:

S.No	Livestock production	Apple production and promotion	NTFP (herbs)	Livelihood development
1.	Type of livestock and number	Apple plant per household	Their degree of engagement in NTFP production and promotion	What does livelihood development mean to them?
2.	Purpose of rearing livestock	Purpose of apple plants	Type of NTFP products	What kind of dreams and aspirations do they have?
3.	Benefit obtained from livestock rearing	Benefits obtained from apple production	Their purpose	Where do they stand now compared to yesterday and where do they think they will be tomorrow?
4.	Problems associated with livestock rearing	Promotional activities they're engaged in	Benefits obtained from NTFP production	What is needed to reach where they want to?
5.	Bottlenecks or constraints associated with livestock rearing	Do they know their market? What are their promotion strategies? What is their outreach capacity?	What are the problems or bottlenecks associated with NTFP production?	What are or could be the problems encountered?
6.	Possible solutions to the problems and constraints	Problems associated with apple production and promotion	What can be done to increase their production and promotion?	What could be the possible remedies?
7.	How can livestock production improve their livelihood	What are the challenges?	Do they know their market? Their customers?	Do they require assistance? Who do they expect to support them?
8.	What is the level of commitment shown by organisations or the state?	Mitigation measures that they have taken so far	Are they aware of promotion strategies?	Have they ever thought of a strategy to sustain their

				livelihoods?
9.	Can livestock production alone generate enough income for a household?	What could be the possible solutions?	What is their outreach capacity?	
10		How can apple production and promotion improve their livelihood	What are the problems associated with NTFP production and promotion?	
11		Commitment shown by organisations or the state?	What could be the possible solutions in mitigating the problems?	
12		Can apple production and promotion generate enough for sustainability of livelihood?	The level of commitment shown by organisations and the state?	
13			Is NTFP production and promotion enough to sustain livelihood in the long run?	