

Large Cardamom Farming In Falelung Rural Municipality Of Panchthar District, Nepal: An Overview

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Abstract—Cardamom farming is regarded as one of the most important sources of income to both the producers and the nation. Nepal has gained its popularity in large cardamom production- a renowned spice- in the world as it is an agrarian country which has employed about 65 percent people in farming providing 27 percent of Gross Domestic Product (GDP). Fruits and spices crops share about 7.04 percent in which spice occupies 1.79 percent of the total production. This article is an overview of large cardamom farming in Phalelung Rural Municipality of Panchthar District. The study area is located at the altitude of 383 meters to 4565 meters with 971 mm annual rainfall which is the most suitable condition for cardamom farming. Both primary and secondary sources of data are consulted in carrying out this research study. Data are interpreted both analytically and descriptively. Large cardamom is a shade loving plant which requires moisture land to grow. Eastern districts of Nepal mainly Ilam, Panchthar, Sankhuwasabha and Taplejung are famous for cardamom production. About 73 percent of total nation production still comes from these districts. In Phalelung, farmers are growing mainly four types of large cardamom as climatic and altitudinal conditions. The annual Production and income of large cardamom is 12136 kg and Rs. 10315600 respectively. But, still there exists some problems in cardamom farming in terms of production, harvesting, drying, curing and storing. Frequent re-occurrence of diseases and pests have been the matter of torture to the farmers, fluctuation of price and the traders' monopoly in price fixation has added another burden to the producers. Despite the endeavors of farmers for solving problems, the problems still prevail in the cardamom production. So, the local institutions, concerned authorities and the national government should play a major role to eliminate these existing problems as soon as possible.

Keywords—Large cardamom, farming, production, harvesting, drying, marketing

Introduction

Nepal is an agricultural country and agriculture is regarded Nepal's principal economic activity, employing about 65 percent of people directly engaged in farming and providing 27 percent of Gross Domestic Product (GDP). Farming is subsistent in nature and crop is mostly integrated with livestock (MOAD, 2017a). Fruits and spices crops share about 7.04 percent to agriculture GDP. Among them 1.79 percent share is of spice to total agriculture gross domestic product (Pandey, et.al, 2017). It is known as queen of spices.

Two types of crops- food and cash- are produced in Nepal. The major cash crops are Tobacco, Jute, Cotton, Sugarcane, Potato, Cardamom, Tea and Coffee. Cardamom is one of them. There are 109 species of spices growing worldwide, 70 spices in Asia and more than 20 in Nepal (Kandel, 2019). Large cardamom (*Amomum subulatum* Roxburgh) is an important high value spice crop having potential cultivation, mostly in eastern Himalayan region of Nepal, Bhutan and few Indian states (Sapkota, 2019). Nepalese laborers who went to Sikkim India for seasonal work brought some cardamom seedlings/suckers when they were returned back to home and started to cultivate. Therefore, Sikkim is the place of origin for cardamom (Adhikari, 2016). It is believed that large cardamom was introduced in Nepal (Ilam) in 1865 by Nepalese laborers. However, planned development of large cardamom was found to be started after the establishment of Cardamom Development Centre (CDC) at Fikkal, Ilam district in 1975 (GONAP, 2015 cited in Sapkota, 2019). In 1982, Ilam, Panchthar and Tehrathum districts were selected as cardamom development areas for the development of large cardamom in Nepal. Large cardamom cultivation is increasing from eastern Nepal to all over Nepal (Timsina & Poudel, 2016). It is grown in cold humid conditions under shade of trees at an altitude between 600-2000 meters above the sea level with an average precipitation of 2000-4000 mm spread over about 200 days and with temperature ranging from 10-22-degree c. (Pratap et al. 2014).

Ilam, Panchthar, Sankhuwasabha and Taplejung are the major cardamom producing districts. About 73 percent of total national production still comes from these districts. Now a days, it is grown in 51 districts, mainly in the eastern hill and mountain areas and gradually expanding to the western parts (Shrestha, 2018). Over 21960 households in 51 districts are in its farming (MoAD, 2017). Data of Ministry of Agriculture 2016/17 showed that large cardamom was cultivated in 17002 ha. land with the production of 6521 metric ton (ICIMOD, 2016).

Nepal is a world's top producer of large cardamom (Singh & Pothula, 2013; Kafle, 2013). It has been the main exportable commercial crop since 1960s, and has contributed 2.25 percent in the total export from Nepal during 1974/75 to 2014/15. The contribution was further extended to more than 4 percent during 2010s (Sapkota, 2019). The area, production and productivity of large cardamom in Nepal in 2015/16 year were 12120 ha, 6439 MT and 0.53 MT/ha respectively (MoAD, 2016b). The quantity and value of exported large cardamom from Nepal during 2016/17 were 3429 MT and Rs. 3.875 billion (TEPC, 2016). About 90 percent of large cardamom produced in Nepal is exported to India through the port of Birtamode in Jhapa district. Other markets are Singapore, Pakistan, UK and United Arab Emirates (Maharjan, 2014 cited in KC & Upreti, 2017).

Government of Nepal have selected large cardamom as priority sector part of the Nepal Trade Integration Strategy (NTIS, 2016). The draft of the large cardamom policy 2016 is being reviewed by MoAD. National economic plans, such as the 13th and 14th plans, which ended in July 2016, are expected to support the growth of large cash crops such as tea, large cardamom and coffee. However, its sustainability is planned by the Agriculture Development Strategy (ADS) 2015 and the large cardamom is one of the cash crops that prioritizes the plans, strategies and programs for MoAD (Shrestha et. al 2018).

This article is related to the large cardamom production in the far eastern region of Nepal. The study is an overview which typically focuses on the cultivation practices carried out in Phalelung Rural Municipality of Panchthar district.

Materials and Methods

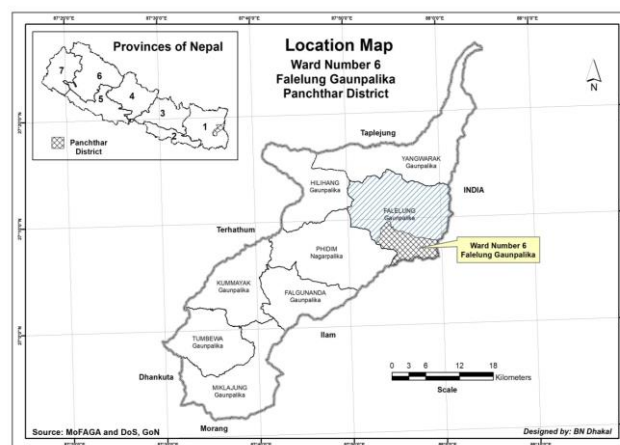
This study is based on primary and secondary sources of data. The field work has been carried out in Falelung Rural Municipality (Ward no. 6) of Panchthar district and about 45 households have been sampled out of total 471 households in the selected ward. The primary data has been collected by structured questionnaire, key informant interview, group discussion and field observations. After the completion of household survey, a total of five key informants have been consulted for the supplement of the gaps of information. FGD method has been used in this research to achieve community level information about problems of large cardamom

production and their solutions. Secondary data has been collected from different sources such as library, agricultural institutions, different government offices, theses, reports, articles, newspaper, web sides, statistical records and office record of study area. This research study has applied both statistical and non-statistical tools for data analysis. Analysis of data using both qualitative and quantitative techniques has helped in description, explanation and generalization of the reality and to acquire the intended knowledge.

Study Area

Panchthar district is one of 14 districts of province one in eastern part of Nepal. It is a hilly district of far eastern Nepal, which covers 1241 sq. km area and Phidim is the district headquarters. This district is geographically located in 26° 28' 00" to 26° 59' 00" north latitude and 86° 02' 00" to 86° 30' 00" eastern longitude. There are Seven Rural Municipalities and One Municipality. Among them Phalelung is one Rural Municipality of Panchthar district which covers 207.14 sq. km area and the total population of the municipality is 21884 (CBS, 2011). Ward no.6 has been selected out of 8 wards of Phalelung Rural Municipality for the study. This area is situated 25 kilometers east from district headquarters. It's bounded by the Sandakpur Rural Municipality of Ilam in east, ward no-7 in west, Self- Rural Municipality in north and Phidim Municipality in south. The location of the study area is shown in the figure 1.

Figure 1: Location Map of Study Area



Source: Topographical map

This study area is situated in Mahabharat range. So, it is a hilly area. The mean monthly maximum temperature ranges from 20.6^o C in January to 30.2^o C in June and the mean monthly minimum temperature ranges from - 2.4^o C in January to 21.5^o C in July. The maximum rainfall has been recorded 226.1mm. in July (Department of Hydrology and Metrology, 2018).

Results and Discussion

Socio-economic Information

Gender Distribution of Population

The total population of the study area is 204 with 4.53 average family size. The total number of male population is 106 and the female population is 98 respectively. About 80.88 percent population is economically active. There is always an intimate relationship between population and resources. Of the total 45 samples, 15 household heads are females and remaining 20 households are male headed. It indicates that males have the dominant role in the family in resource possession, management and decision-making. In the same vein, males are more involved in cardamom farming than females. The balance of sexes affects social and economic relationship within a community. (CBS, 2003). Sex composition has a significant role to play in the socio-cultural and economic fields i.e. livelihoods of the people. Sex composition varies in the study area which is shown in Table 1.

Table 1: Population Composition of Sampled Households

Age group	Male	Female	Total	Percent
0-14	9	12	21	10.9
15-59	85	80	165	80.88
60 Above	12	6	18	8.82
Total	106	98	204	100

Source: Field survey, 2075

Education Status

The level of education is one of the proxy indicators of human capital (Pain & Lautze, 2002 cited in Paudyal, 2016). It determines the level of well-being of the household. In this study area Education status is categorized into six categories: illiterate (can't read and write, having no formal schooling as well as informal education), literate (can read and write but don't have any school education except informal education), basic (having school education up to grade 8), secondary (having school education up to 12) and higher level (bachelors and above). From the survey, education status of majority of the respondents are secondary (35.78%) followed by basic level (34.31%) and read & write (6.86%). Higher level education status of respondent is 22.06 percent. It predicates that the major population of the cardamom farmers are educated.

Table 2: Educational Structure of Sampled Households

Education Level	Male	Female	Total	Percent
Illiterate	0	2	2	98
Literate	5	9	14	6.86
Basic Level	29	41	70	34.31
Secondary Level	43	30	73	35.78
Higher Level	29	16	45	22.06
Total	106	98	204	100

Source: Field Survey, 2075

Occupation Structure

Nepal is agriculture dependent country and most of Nepalese do agriculture for living. The local people adopt both coping and adaptive strategies for their livelihoods. They undertake a range and combination of activities in order to achieve their livelihood goals. They earn cash, food and other goods to satisfy wide variety of their needs performing different activities. These activities include agriculture, service in governmental and non-governmental agencies, business, foreign labour and others. House members adopt one or more than one activity to meet their needs. The importance of these activities is not similar across the study area and varies by places as a result of variation in natural as well as socio-cultural environment, which have direct implications on choices of livelihood options. Almost all of the households in the study area have adopted agriculture (95.55%) as a primary occupation. It reveals that farming is their source of income and especially cardamom farming has fulfilled their needs and desires. Besides agriculture people are involved in business, service and other activities including foreign migration. The occupational structure of the study area is shown in Table 3.

Table 3: Primary Occupation of Respondents

Primary Occupation	Frequency	Percent
Agriculture	43	95.55
Business	15	33.33
Service	15	33.33
Foreign labour	26	57.77
Other	9	20.00

Source: Field Survey, 2075

Household Services

Household services determine the social status of the population. Social stratification takes place in the community because of the possession of the things. In the study area, people are enjoying the facilities of electricity (97.77%), cell phone (100%), television (88.89%), separate kitchen (62.22%) and toilet (86.67%) but no households have bio-gas. It shows that the living standard of the local people is good in the study area.

Table 4: Household Facilities

Facilities	Number of Household	Percent
Electricity	44	97.77
Cell Phone	45	100
Television	40	88.89
Separate Kitchen	28	62.22
Toilet	39	86.67
Bio-Gas	0	0.00

Source: Field Survey, 2075

Land Category and Land Holding Situation

As the people of the study area are mostly farmers (95.55%), they respect and worship land as their mother (*Dharti Mata*). People believe that to have land means hard work but it ensures a long term return and survival. Households with large land holdings have higher economic and social status. In the study sites, land has been categorized into *khet* (lowland), *bari* (upland), *pakha*, forest and bushy area which is shown in Table 5.

Table 5: Land Types of Study Area

Land types	Volume (in ropani)	Percent
Khet	65	2.18
Bari	2115	71.02
Pakha	429	14.40
Forest and bushes	369	12.38
Total	2978	100

Source: RM Profile of Falelung, 2075

Varieties of Cardamom Grown in Study Area

The type of large cardamom cultivated in Panchthar district (Ekteen and Sidin) was Ramsey while other varieties were also cultivated in small scale. Topography and climatic conditions are the major factors determining the varieties of cardamom to be cultivated which favored the cultivation of Ramsai variety. And this variety is supposed to give little more production compared to other varieties. Ramsai variety of cardamom is cultivated by 57.78 percent of surveyed households followed by Saune (24.44%), Golsai (11.11%) and very few farmers have cultivated Madhus and local varieties of cardamom. Among cardamom cultivating together with more than one variety, Ramsai, Saune and Golsai combination of cardamom cultivation has occupied in the study area. Table 6 shows in detail the large cardamom varieties grown in the study area.

Table 6: Varieties of Cardamom Production

Types	Household Number	Percent
Ramsai	26	57.78
Saune	11	24.44
Golsai	5	11.11
Others	3	6.67
Total	45	100

Source: Field Survey, 2075

Cultivation Practices

A large cardamom plant develops through seeds, and its planting starts with soil preparation, seed management and other related activities. In general, the plantation begins in June, when the field gets enough rain. Its cultivation can be carried out at an altitude of 600 to 3000 meters above the sea level. Panchthar district is located at the altitude of 600 meters to 2000 meters and the study area Phalelung

also comes under this height. Large cardamom plant grows best at a temperature between 10-22° C depending on its varieties and requires 2000-4000 mm of annual precipitation. Although the temperature is more or less similar in the study area but the annual rainfall is not as requirements. The annual rainfall in this area is about 971 according to metrological record of the district. In addition, a large cardamom cannot grow in direct contact with the sun; soil for cardamom planting should be in the shade (Pratap et al., 2014). After planting seeds in the field, after about 3 to 4 years, it begins to produce cardamom. Cardamom saplings can also be planted in a designated area after germinating them in a nursery. First, pits are dug in the field by maintaining certain distance between plants relying on the varieties of cardamom, nature of soil as well as the slope of land. Generally, the distance between pits is 1.2x2 to 2x2 meters. Cardamom plants needs moisture and cool environment. So continuous irrigation is a must during the dry season and 4 to 6 months after the harvest. It is very essential since the rainfall here is very less as the requirement of the crops. However, depending on the needs, other factors, such as fertilizers and plant protection measures, are required from time to time.

Cardamom plants require much care and tender on a regular basis in order to bear heavy yields. It is, therefore, the farmers have to be busy all the time in the field for various operations like weeding, mulching and cleaning, digging and racking, earthing up etc. besides manuring, irrigation, shade management and plant protection. It is a well-known fact that water is life for living things however, cardamom demands more water in order to survive and in order for good yields. So, there must be a regular flow of water in the cardamom field especially during summer season but not in the pool like situation. Farmers here are using both traditional irrigation system i.e. kulo and water supply pipe sometimes digging pond in the nearby field or using modern irrigation system. About 53 percent of the total cultivated area is irrigated here and rest of the land is deprived of irrigation facility. The field in general should be watered twice a week for three to four hours in a day for plant protection until the first monsoon showers.

Mulching is another way of keeping moisture in the cardamom field which is applied during November-December to reduce the ill-effects of droughts. The main two activities essentially to be done in the cardamom farming are weeding and clearing-. both be carried out either simultaneously or separately. Fallen leaves or uprooted weeds are spread around the plants. Weeding is very essential during the plantation year of cardamom- essential in other years- since young plants have to fight with weeds to survive. Depending upon the intensity of weeds, 2-3 weeding operations are essential in a year i.e. during May-June, August- September and December-January. Weeding can either be done manually or by spraying weedicides. Both the ways are used in the study area. The act of weeding helps both the young and matured

plants grow faster in order to give good and earlier production. Clearing, on the other hand, is an act of removing old and dry shoots of plant to promote the healthy growth of new shoots which is done once in a year with the beginning of monsoon or twice in a year under irrigated condition. Generally, during May-June and August-September this work occurs. In the same way, racking and digging occur at the end of monsoon rain. Soil is dug around the plants up to a radius of 60-75 cm to conserve the moisture for ensuing dry period in low rainfall areas and a thin layer of fertile soil is earthed up at the base of the plant up to the collar region to encourage new growth. After doing all these tasks as a rule on a regular basis after cardamom plantation, it starts bearing fruits in the second year or the third. It takes about 5-6 months to get the fruits matured from flowering. All these scenarios are found in the study area.

Shading

Large cardamom is a shade- loving plant so it is necessary to manage good shading for better yield. It is therefore grown in areas where the average annual rainfall is between 2000 and 4000 which keeps moisture in the soil. Trees are the good sources of shadow and sources of maintaining moisture in the field. In the study area the farmers have planted *titepati* (*artimesia vulgaris*), *bilaune* (*maesaindica*) or *masyamdal* (*vigna umbellate*). Similarly, *chilaune*, *shiris*, *kattus*, *malata*, *jhigauno* and *uttis* are planted. *Uttis* like fast growing trees are planted approximately three years before the cardamom plantation. Leaves of *uttis* are used as nutrients since they rapidly decompose with soil. A research report says that 155 kg of nitrogen is added to the soil by the root of *uttis* trees in 15 years of stand. According to the covering and the growing nature and the size of the trees, a certain distance is maintained between their plantation. The types of shading plants planted in the study area are given in the Table 7 in detail.

Table 7: Shading Trees in the Study Area

Types of Tree	HH number	Percent
Maleta	4	8.88
Shiris	1	2.22
Uttis	30	66.66
Both (Maleta and Uttis)	10	22.22
Total	45	100

Source: Field Survey, 2075

Harvesting

The indication of time of harvesting is when the seeds of topmost capsule turn brown. When this colour appears, to enhance maturity the bearing tillers are cut at a height of 30-40 cm. from ground and left for another 10- 15 days for full maturity. The spikes are collected using traditional knives known as 'Elaichichhuri'. The harvested spikes are heaped for two- three days to easily separate the capsules . The separation is done manually since until now no device

has been used. According to farmers, in general, the standard time of cardamom collection is from mid-August to the end of October depending on the height and the inclination of land. The growth of crops at lower level begins to mature faster compared to the higher height. Flowering of cardamom commences in the third year after planting. Flowers appear during April and May and capsules mature in September and October. In order to get high quality pods of cardamom, it should be harvested at the appropriate maturity stage.

Drying

Drying is one of the crucial stages of cardamom production which must be done with much care so as to maintain the original flavor of the fruits. Newly harvested cardamom contains about 80- 85 percent of water which needs to be dried so that it can be stored for long and can be used in the future. There are various drying techniques in practice in order to dry the cardamom in cardamom farming areas however, in the study area the common techniques are traditional dryers (local bhattis), improved dryers (improved bhattis) and solar dryer. A local Bhatti is a wood- fired dryer made by the farmers themselves in their yards. This traditional processing method causes blacking of the capsules and gives smoky flavor. Cardamom capsules are spread over the wood firing pit on a bamboo mat about 25- 30 cm. thick. Drying process takes about 24-28 hours and frequent racking is made to get uniform drying. After drying, the capsules are rubbed against the rough surface in order to remove the tail. Though this method is common in the study area, the quality of cardamom is poor and they have dark brown colour with smoky flavor. Moreover, much of the fruits become scorched and split in this method.

One the other hand, the improved dryers are the recently used techniques for drying cardamom capsules which are able to keep the natural flavor, quality, and colour of the fruit intact though they are more expensive in the construction than the local dryers. *Elichi Bikas Karyakram (cardamom development program) Fikkal Ilam* has developed this technique and has encouraged the farmers to use this method to dry the cardamom capsules. The internal structure of this Bhatti is of 'v' shape. The cardamom capsules are dried only by heat. It has six drums with two sections- firing and drying. These sections are enclosed in a wall made of stone and mud and whole assembly is kept under the enclosed covered structure for about 24 hours at about 6 c. Then the capsules are cured and graded and packed in jute bags.

Solar dryer is the best technique to dry the cardamom capsules without losing the original flavor, colour and the quality of the fruits. However, this technique is not very possible for drying large amount of cardamom.

The next technique to dry cardamom is electric dryer. This technique contains mechanical trolley

system operated by diesel or electricity. This curing system consisting of a blower, a heating unit, and a malt-tray curing chamber which is similar to a mechanical cabinet tray dryer. This system works effectively and produces high quality dried capsules. Its capacity is 600 kg and curing time is 12hrs. this system is not available in this study area.

Production and Income

Total world production of large cardamom is about 12278.20 Metric Ton (MT) (Singh & Pothula, 2013). Nepal is a world's top producer of large cardamom (Singh & Pothula, 2013; Kafle, 2013). The eastern development region of Nepal specially accounts for around 97 percent of the total national production. The four major districts (Taplejung, Ilam, Sankhuwasabha and Panchthar) account for 81 percent of the national production (MoAD, 2010). Phalelung Rural Municipality is a major production area of Panchthar district. The field survey and key informants' information entail that there is fluctuation in the total production and in the price of crops. The four years production and income of the study area is given in Table 8 in detail.

Table 8: Production and Annual Income of Cardamom

Year	Production (in kg.)	Price (per kg.)	Total annual income (in NRs.)
2016	10720	700	7504000
2017	11040	600	6624000
2018	10600	2400	25440000
2019	12136	850	10315600

Source: Field Survey, 2075

Marketing

Marketing is one of the important activities that should be intact in all the time- from production to consumption. Here, marketing refers to the business activities without which all agro-based activities become futile for both the farmers and the consumers. It includes the movement of dry cardamom from widely scattered producers to the export market and ultimately to consumer. In marketing system, producers, traders, wholesalers and consumers are main agents involved in production- consumption chain.

In the study area, there is direct link between the producers and the traders. The farmers sell their product to the local traders to their ease. However, the data reveals that the large amount of cardamom i.e.77.78 percent (Table 9) is sold to the businessmen of Phidim. All the farmers seem to sell their product to local traders/ collectors in the months of Bhadra-Margh. The price of cardamom is fluctuating and changing even within a week. In 2016, the farmers have sold cardamom on an average price of Rs.700 per kg whereas in 2018 the price skyrocketed up to Rs 2400 per kg and it decreased in the year 2019 and was sold on Rs 850 (Table 8) per kg. The village

traders sell the collected cardamom to the district traders while some farmers sell cardamom directly to the district traders in Phidim then to Birtamod wholesalers and finally is exported to India. In domestic marketing channel, cardamom is sold to national retailers situated at different regions of Nepal and finally to consumers.

Table 9: Marketing Center

Marketing center	HH Number	Percent
Local market	6	13.33
Phidim Bajar	35	77.78
Other	4	8.89
Total	45	100

Source: Field Survey, 2075

Problems and Solutions

The respondents in the study area have reported they have been facing various problems since long from the time of production to the marketing of cardamom. Time and again, they have had their crops ready for harvesting, devoured by pests and swamped by diseases. The major problem during production is the emergence of strange types of plague. The major diseases of this study area found until now are Chirkey, Foorkey and Rhizome roots. The production that they expected would yield high which in fact could improve their living standard but it was in vain as the diseases finished off their crops. The farmers have not only got their crops damaged but also, they have very often become the victims of other problems like irrigation, labour, drying and curing machines, marketing and the problems of traders. In this area, irrigation has been one serious problem to the farmers. As cardamom needs moisture soil with plenty of flow of water and shade in the land but in Falelung Rural municipality enough irrigation facility lacks. About 71.11 percent household are not getting enough irrigation facility which is resulting low production of crops as compared to their toil, time and investment. The next problem they have faced during harvesting and intercultural operation is scarcity of labour. The farmers are unlikely to get substantial workers for harvesting and drying and curing of cardamom. So, they are not much willing to plant crops in a large area. In the same way, they are experiencing the problems of not having modern equipped facility for drying and curing of cardamom capsules. They have to manage everything manually. Traditional dryer is spoiling the quality, colour and the flavor of the cardamom compared to the modern improved smokeless dryer.

On the other hand, rapid price fluctuation (Table 8) of the production is another problem and matter of concern to the producers since they have to wait for a year to get output of their toil. But the fluctuation in price has frequently bothered them as it occurs even on weekly basis. They can't get the actual price of their production; they have been exploited by the traders as they fix the price with their monopoly. On

one hand, they can't get the actual price of the production, on the other hand, they have to pay the unnecessary taxes to various agencies and organizations. Time and again they are getting the problems of transportation, they can't easily transport their product in the market hub.

Knowledge, skill, experience, source, facilities, fund and so forth are the things to be taken into consideration in order to solve the problems seen in the study area. Traditional way of farming always does not work well which needs to be transformed. Multifarious ways of cultivation can yield high so as to raise the living standard of the people. In the study area, about 47 percent farmers are untrained in the context of farming so, trainings, seminars, workshops etc. should be conducted frequently concerning to cardamom farming for the application of new techniques in cultivation.

Farmers worried about strange diseases should be provided with pesticides and insecticides for the concerned disease with technique of spraying and equipment as well. Fund management is another aspect for solving problem. The farmers in the Phalelung Rural Municipality are experiencing the problem of fund scarcity. They are compelled to take loan from the businessmen, brokers and from the affluent at high interest. Banks, though are providing the loans, the process is lengthy and loan is not enough. That's why, they are exploited by the local people. The concerned authority should pay much attention in order to provide substantial loan more conveniently at low interest to the farmers. Irrigation project should be launched and extended everywhere to this area so that every farmer can have the access of irrigation facility and production can be high. For this the local government has to play the vital role. In order to maintain the original quality in terms of flavor and colour, modern equipment of drying, curing and storing of cardamom should be applied. If done so, the farmers can get good price for their production. Price fixation for the product is very crucial; fluctuation in market price is sure to discourages the farmers from producing the crops. So, price should be best settled by the government in time i.e. during the harvesting period which may facilitate both the farmers and the businessmen and they should not bother themselves for bargain every time. On the other hand, the rule of taxation should be formulated from the authorized level and implemented accordingly otherwise it always creates negative perception towards the government from the farmers. Accessibility in transportation and market hubs for the product should be managed at any cost in the study area. Extension of transportation facility in the target area and the stretching of market hubs across the country will certainly play the vital role in promoting large cardamom production for the entire nation's development.

Conclusion

Cardamom farming is highly profitable activity which can uplift the living standard of the people involved in this enterprise eventually addressing the country's economy with GDP increment. There is no doubt that this activity has enriched the living standard of people of Panchthar district specially of Phalelung Rural Municipality. Provided that the government launch some crucial policies and programs focusing on the important parameters of cardamom production this profession certainly will be a more profitable source of income to the people of this area.

During the field survey as reported by the informants some problems still exist in the cardamom production. The primary problems faced by the farmers are reoccurrence of diseases and pests and the lack of price information. Similarly, monopoly of traders on price fixation and rapid price fluctuation are the main problems on behalf of traders. There are other multiple problems regarding cardamom production, harvesting, drying, curing, storing, marketing and so forth which can be solved if the local bodies, concerned people and finally the national government become accountable with closure attention towards these problems.

The entire district including Phalelung, can be the destination area for high amount of cardamom production since the place is suitable for cultivation in terms of climate, altitude, and rainfall, so to make cardamom enterprise more profitable, the farmers should be encouraged to use inputs like irrigation, good quality seedlings and recommended amount of manures. The government, on the other hand, should solve the existing problems as far as possible to promote this enterprise.

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