

# A review on status and profitability of large cardamom production in Nepal

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## Article History

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## Abstract

**Purpose:** This study focuses on the status, strength and problems of large cardamom cultivation in Nepal and also identify profitability of large cardamom farming in Nepal.

**Research Methodology:** Numbers of journal articles and reports were consulted as secondary source of data and conclusion were drawn and summarized.

**Results:** Area and production of large cardamom in Nepal is increasing day by day and major production is concentrated in four eastern districts. B/C ratio of cardamom production varies from 1.70 to 3.06 and one fifth of household income in eastern hill of Nepal is attributed by Large cardamom. Price fluctuation, middleman and diseases are identified as major problems.

**Limitation:** Lack of funding, less access to the data and documents are the limitations of study.

**Keywords:** Status, B/C ratio, Profitability, Price fluctuation, Middleman

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## Introduction

Large Cardamom (*Amomum subulatum*) is a perennial herbaceous sciophytic spice crop belonging to the family Zingiberaceae. It is widely popular as “Black Gold” or “Brown Gold and more popularly known as “Kholso ko Sun” in Nepal. Large cardamom species inhabits cool forest areas near mountain streams and damp forest floors including marginal and semi-marginal types of land. The plants are tentatively 1.5 to 2.5 m taller. It can usually grow on moist and shady parts of mountain streams and hill slopes at an altitude of 765 to 1675 m above the sea level It is climate dependent crop; best production is between temperature of 4-20°C, Annual rainfall of 2000-2500 mm and more than 90 % humidity(Baniya, Böhme, & Baniya, 2013) .

The major producers of large cardamom, Nepal (68%) India (22%) and Bhutan (9%) of total world production per annum whereas Nepal is the top producer (ICIMOD,2016). Large cardamom was introduced into Nepal in 1865 AD, from Sikkim India although, commercial cultivation started much later in 1953 AD and further development of this crop began after the establishment of Cardamom Development Centre at Fikkal of Illam district in 1975. Currently, its commercial cultivation spreads over 37 districts of Nepal. The Eastern development region of Nepal specifically accounts for around

97 % of the total national production. The four major districts (Taplejung, Ilam, Sankhuwasabha and Panchthar) accounts for 81 % of the national production (MOAC, 2010) but most of them are producing in small scales. The annual production in Nepal has been exceeding and many local farmers persuade to increase its production every year.

This review is done to understand about status, strength and problems of large cardamom cultivation in Nepal and to identify the potential of large cardamom farming in the country.

## Research Methodology

For this review numbers of journal articles and reports were consulted as secondary source of data and conclusion were drawn and summarized. No primary data were collected. The results of the different articles were summarized in this review paper.

## Results and disscussion

### Current Status

Total production of large cardamom in year 2017/2018 was 6849 M.T from the area 17004 ha and the productivity was 0.4278 (MOAD, 2019). Districts Taplejung, Illam, Sankhuwasabha and Panchtar accounts for more than 80% of production among them Taplejung is the largest producer.

Year	Area(ha)	Production(mt)
2015/2016	5540	5,165.8
2016/2017	17002	6521
2017/2018	17004	6849

source: (MOAD, 2019)

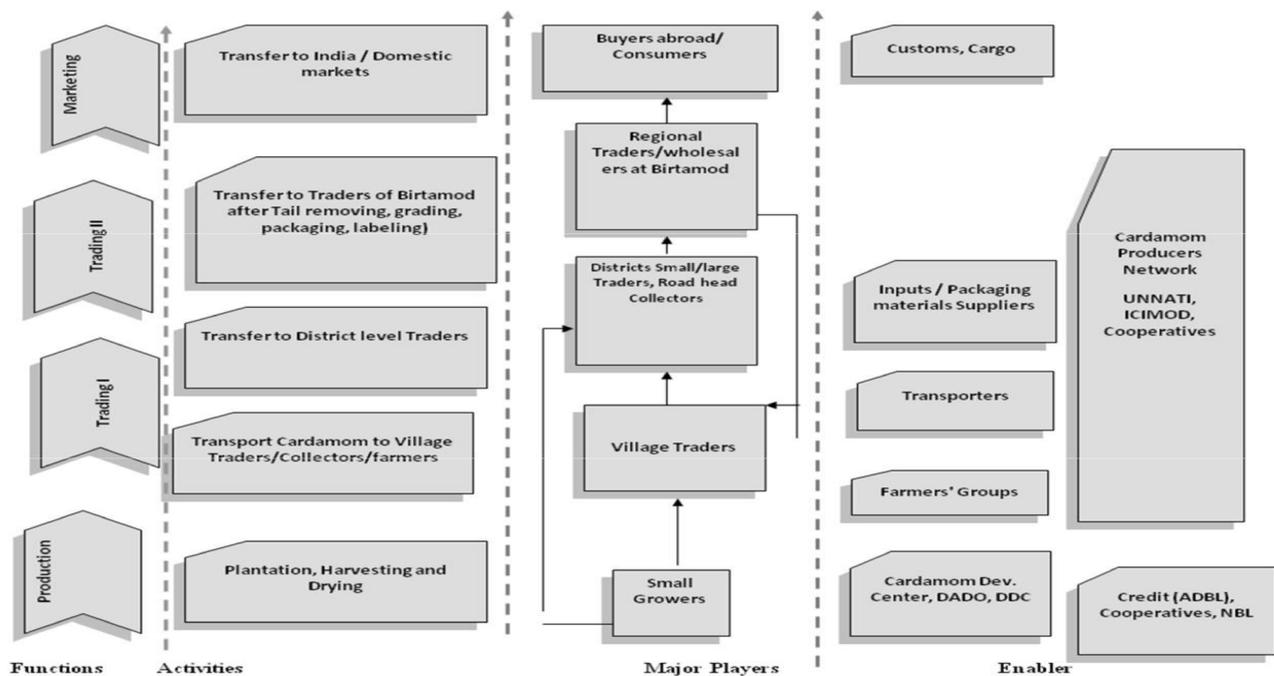
The table above shows that in recent year the area and production of large cardamom is significantly increasing in Nepal this might be due to increasing in interest among farmers and increasing global demand of Neplase large cardamom. Similarly, the productivity has significantly increased after 2016/2017 to 2017/2018. This increment might be due to awareness among farmers, increasing donor agencies, use of improved technology, high demand of the product, etc.

K. P. Shrestha et al., (2018) showed in a research that Large Cardamom production is declining in most of the growing districts in Nepal due to various production constraints. In the study areas, rhizome/clump rot, chhirkey, and foorkey diseases were reported as the major factors of Large Cardamom decline. The fruits remaining unripe due to unknown reason and declining in subsequent year was reported as the new problem in Taplejung. The inadequate irrigation, use of disease infected seed materials, lack of knowledge about the mode of disease spread and continuous deforestation of

shade trees from the Large Cardamom orchards were observed as the major causal factors of the decline in the study areas. The diseases appeared most severe in older orchards in Ilam. Seed abortion and unripening had created a threat to Large Cardamom growing areas in Ilam. However, newer plantations were also poor due to the plantation of unhealthy planting materials. The plantations have almost collapsed in Ilam. However, some plantations of those farmers, who have given good care of management and sanitation, are still performing well for good yield.

## Marketing

India is largest market for Nepalese cardamom which covers about 99% of total exports (Bahadur Pun, 2019). The products are then packed and re-exported from India to Pakistan and the Middle East due to high demand and the high prices they fetch because of the preference for *Nepali large cardamom in the whole world*. The value chain map of Large Cardamom in the study area is represented by the chart below which clearly shows the Large Cardamom value chain activities, functions, actors and enablers. Annex 1. Large Cardamom Value Chain map in the Eastern Nepal, Source: ( K. Shrestha & Shrestha 2019)



For the export of the cardamom from the producing district, cardamom is firstly sent to the local traders. From the local traders the product reaches to the district level and regional traders and whole sellers. After that regional traders sell the product to India through border. There are many middlemen involved during the process. They may be organization, whole sellers, local collectors or district collectors. Whole sellers were also very few in number and they were located only in Jhapa (Shrestha, 2018b).

## Problems

The findings of (Shrestha & Shrestha, 2018) showed that key problems facing by growers and traders were high price fluctuation, lack of disease free saplings, dependency on Indian market, very old orchard, declining productivity, drying out water resources, adulteration, lack of research and extension support services, lack of favorable government policy and least coordination among the chain actors. Inappropriate plantation of cultivar as per the altitude and climate are also being major problem among the farmers, for instance *Ramsay* cultivar performs better in high altitude but it was also cultivated in lower belts. Although number of diseases has been diagnosed, the remedial pace for the control of these diseases is very slow. Farmers reported that over 40% of loss is associated with diseased orchards and will be collapsed completely by next 2-3 years (Bahadur Pun, 2019). Comparatively lower incidence of diseases as reported in Taplejung could be the reason for higher production, but there were many reports that showed a trend of gradual increase in the disease incidences. All these curtailed the income of growers, forcing them to look to alternate farming enterprises. Lack of favorable government policy and least coordination among the chain actors was also the major problem so, it is necessary to maintain strong vertical and horizontal integration among the value chain actors to increase value chain efficiency of large cardamom.

## Profitability

According to (Shrestha, 2018a), the economic yield of cardamom starts from the fourth year and remains similar up to 20 years. But, it was found from the study that with the proper management of the crop cultivation packages, about 10% yield starts from third year which have not been reported yet. The financial analysis result showed that, the Return on Investment was found about 160% with payback period of 4.09 years. Similarly, Net Present Value was assessed at NRs. 3,545,771 at 12% discount rate. Likewise, the Internal Rate of Return Benefit-Cost Ratio of cardamom production was 82.6% and 3.06, respectively. The sensitivity analysis with 20% increase in the cost of production and 20% decrease in the sold price rate also found profitable and viable enterprises as its Return on Investment is 34%, PBP is 5.64 years, NPV equals NRs. 2,154,393, IRR 57.6% and BCR found 2.06. Hence, the study recommends that this enterprise is very profitable and viable and farmer could invest confidently even its rate fluctuates very often. Also the main strength of large cardamom was the use of marginal lands (Bhattarai, 2016).

Similarly, From the article of (Adhikari, Acharya, & Dutta, 2014) B/C ratio was found 1.70 minimum to 1.86 maximum and gross margin/ropani was Found Rs.1876 minimum to Rs.2106. More than 21 percent of household income was attributed through cardamom cultivation. Increase in marketing margin, marketing costs and decrease in marketing efficiency and producers' share were observed with increase in no. of marketing intermediaries and vice-versa. Years of cultivation, area under cardamom, irrigation, labor use, Plant protection measures use, and involvement of family members in cardamom farming were most contributing factors to total production. More than 29 percent exporters believed that the Indian market was the most responsible factor for price determination (Shrestha et al., 2018).

Export growth rate of cardamom in the later years of WTO membership was higher than in just before and initial stage of WTO membership. It indicates that the cardamom farming could be highly profitable and export oriented enterprise in eastern hills of Nepal.

## Conclusion

From this review we can conclude that, area and production of Large Cardamom is increasing in Nepal and is also the largest producer of world. Mainly four eastern districts cover more than 80 % of production. India is the major market of Nepalese large cardamom which imports almost of produced cardamom of Nepal. B/C ratio of cardamom production is always more than 1.70 and up to 3.06 which shows that cardamom cultivation is profitable in Nepal. Also the one fifth of household income in eastern hill of Nepal is attributed by large cardamom.

The main strength of large cardamom is the use of marginal lands and major problems are high price fluctuation, lack of disease free saplings, dependency on Indian market, very old orchard, declining productivity, drying out water resources, adulteration, lack of research and extension support services, lack of favorable government policy and least coordination among the chain actors. So, it is necessary to maintain strong vertical and horizontal integration among the value chain actors to increase value chain efficiency of large cardamom, farmers training should be increased, programs such as plant clinic should be maintained regularly. Similarly from the government side policies and subsidies should be increased which will encourage the farmers towards the cardamom farming. Studies regarding cardamom diseases, factor affecting the farmers for cardamom farming and insurance status of cardamom farms could be scope for further studies.

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