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論説 Article

Large Cardamom (*Amomum Subulatum* Roxb.) Production, Marketing and Trade in the Indian Sub-continent

Niraj Prakash JOSHI*・Luni PIYA**

Abstract: Large cardamom contributes significantly to the household and regional economies in the Eastern Himalayas of the Indian sub-continent, and to the national economy as well. This paper aims to assess the dynamics of large cardamom production, marketing, and trade in Bhutan, Nepal, and India. The assessment is based on data compiled through several government statistics and publications. A brief field visit was also conducted in Birtamod, Nepal, in September 2017. Nepal and India are suffering a loss in their cardamom yield due to disease infestation, poor crop management (including aged plantation), and changing climate. India has a fairly organized market for large cardamom facilitated by the Spices Board India, where its price is set through auction. The system of advance payment to the farmers would cause stress for farmers to sell their produce at a lower price. Price volatility remains the major concerns in the marketing and trading of large cardamom. Differential provisions in inter-country trade is restricting the market and trade of large cardamom produced in the region. Similarly, the adulteration of large cardamom with "false cardamom" remains the major threat to large cardamom production in the Eastern Himalayas. The product-specific data suggests more than 80 percent of large cardamom exported from India goes to Pakistan, suggesting Pakistan to be the biggest global market for the large cardamom produced in the Indian sub-continent. Production constraints—specifically, diseases; poor agronomic practice and inefficient curing in traditional way; marketing constraints through price supports and packaging with geographical indications; and trading constraints, such as custom and phytosanitary barriers in inter-country trading, improper identification of the international market, and adulteration issues need to be addressed urgently for the sustainability of large cardamom production in the Eastern Himalayas. This will be critical for improving the welfare of thousands of small households in the region.

Key words: Bhutan, India, Nepal, large cardamom, trade

I Introduction

Large/big cardamom (*Amomum subulatum* Roxb.), also known as Alaichi or Kali Elaichi or Bara Elaichi in the Indian sub-continent, is a spice crop. Its seeds are astringent, appetizer and diuretic. Its oil is a precious ingredient in food preparation. It is especially used in Indian cuisines and in certain regional cuisines of Pakistan as a flavoring in dishes like Pulav, Biryani and meat preparation (ITC, 2017; Vasanthakumar and Sreekala, 2017; SBI, 2018a). In the Middle East it is widely considered as an aphrodisiac. It is also used in the Arabic dish called Machboss (MoAF, 2017a). It is also regarded as the "Queen of Spices" along with the green cardamom (small cardamom – *Elettaria cardamomum* L.). The crop is native to Nepal, Bhutan, and India. The global production of large cardamom is concentrated in these three countries in the Indian sub-continent mainly grown organically. It is grown as a cash crop in Eastern Nepal, Southern Bhutan, and Sikkim, Darjeeling district in West Bengal, Arunachal Pradesh, and Nagaland in India (Ravindran et al., 2012; SBI, n.d.). Nepal is the world's largest producer of large cardamom (ITC, 2017). Nepal's share on the world's large cardamom market is around 68 percent, followed by India (22 percent) and Bhutan (9 percent) (ICIMOD, 2016).

Increasing international demand and favorable climatic condition for its production in the hilly regions of these countries have proved the large cardamom's prospects as an important high-value cash crop to uplift the living standard of small-holder farmers. Hence, the

* TAOYAKA Program, Hiroshima University
** Graduate School for International Development and Cooperation, Hiroshima University

crop is proclaimed as “Black Gold” (MoAD, 2015a; ITC, 2017) and is being promoted by several governmental and non-governmental organization as an important intervention to uplift the living standard of the farmers. Moreover, the agricultural labors involved in the activities related to large cardamom production and processing are receiving the equal wage rate regardless of the gender. Hence, female agricultural labor force in Nepal is attracted towards large cardamom cultivation. It is contributing to gender equality, thereby, women empowerment in rural Nepalese economy (Kantipur, 2018). However, its area under cultivation and production in the region is stagnant or even dwindling. Under this context, this paper aims to explore production of large cardamom and its distribution, its marketing, and discuss trade related issues that are causing pressure to the producers in the Indian sub-continent.

Ⅱ Methodology

This paper is based on the data compiled from the national statistics of Bhutan, Nepal and India. The data sources were various issues of “Agriculture Statistics” published by Ministry of Agriculture/ Ministry of Agriculture and Forests (MoAF), Bhutan; Spices Board India (SBI) and data compiled from Indiastat in case of India; and various issues of “Statistical Information on Nepalese Agriculture” published by the Ministry of Agricultural Development (MoAD), Nepal. Besides, missing relevant data were compiled from several publications of relevant government organizations.

The brief field visit in the Eastern Terai was made on September 2017 to assess overall agriculture dependence between the Northern hills and Southern plains in Eastern Nepal. During the visit, transactions of large cardamom supplied from the Northern hills in Eastern Nepal were reported. A brief interaction with the trader was helpful in providing the discussion in paper supplemented by the review of literature. We acknowledge that there are ample literatures on the production related aspects in Nepal and India, but is critically lacking in case of Bhutan (Singh and Pothula, 2013).

Ⅲ Production of large cardamom in the Indian sub-continent

Large cardamom is established as the important high value cash crop of farmers in the Eastern Himalayan region of the Indian sub-continent including Eastern hills of Nepal, Sikkim in India and South-western Bhutan. Its cultivation remains the most important livelihood sources for mountain people in this region utilizing the marginal land (K.C. and Upreti, 2017). Hence, preferred by poor/vulnerable groups as well as women (ANZDEC, 2003). Nearly, 22,000 households in Nepal and 17,000 households in the Sikkim Himalayas, most (95 percent in the case of Nepal) of which are smallholding farmers, are engaged in its farming (Sharma et al., 2009; ICIMOD, 2016; ITC, 2017). ITC (2017) even reported that large cardamom is a major cash crop for more than 67,000 farmers in the hilly regions. Partap et al. (2014) reported that the crop contributed to 45 and 54 percent of the total household income for small farmers and larger farmers, respectively, in 1997. Similarly, they reported the crop’s contribution to be 38 percent of the total household cash income in 2000. Even the recent study reported it to be 29.2 percent of the household income (Sharma et al., 2016). Hence, any adverse impact on large cardamom’s production has jeopardized and will jeopardize the livelihoods of many marginal farmers in the Eastern Himalayas of the Indian sub-continent (Sharma et al., 2009; K.C. and Upreti, 2017).

India has the largest area under large cardamom production followed by Nepal and Bhutan. In India, Sikkim constitutes around 87 percent of the area under its production (Indiastat, 2018; SBI, 2018a). Thus, the figures presented for India also virtually depicts the figures for Sikkim, a major cardamom producing state in India. Similarly, the Eastern Hills of Nepal constitutes nearly 92 percent of the area under its production in 2016. Major large cardamom growing districts in Nepal are Taplejung, Sankhuwasabha, Panchthar, Ilam and Khotang, which constitutes nearly 82 percent of the total area under large cardamom producing area in the country (MoAD, 2017). South-West Dzongkhags, namely, Samtse, Chhukha, Dagana, Sarpang and Haa cover 82.5 percent of large cardamom producing area in Bhutan (MoAF, 2018). This shows that the production area of large cardamom is mostly concentrated in the Eastern Himalayas of the Indian sub-continent extending from Eastern Hills of Nepal to South-West Bhutan (Figure 1).

The trend of area under large cardamom cultivation, production and its yield of the last 10 years were assessed.

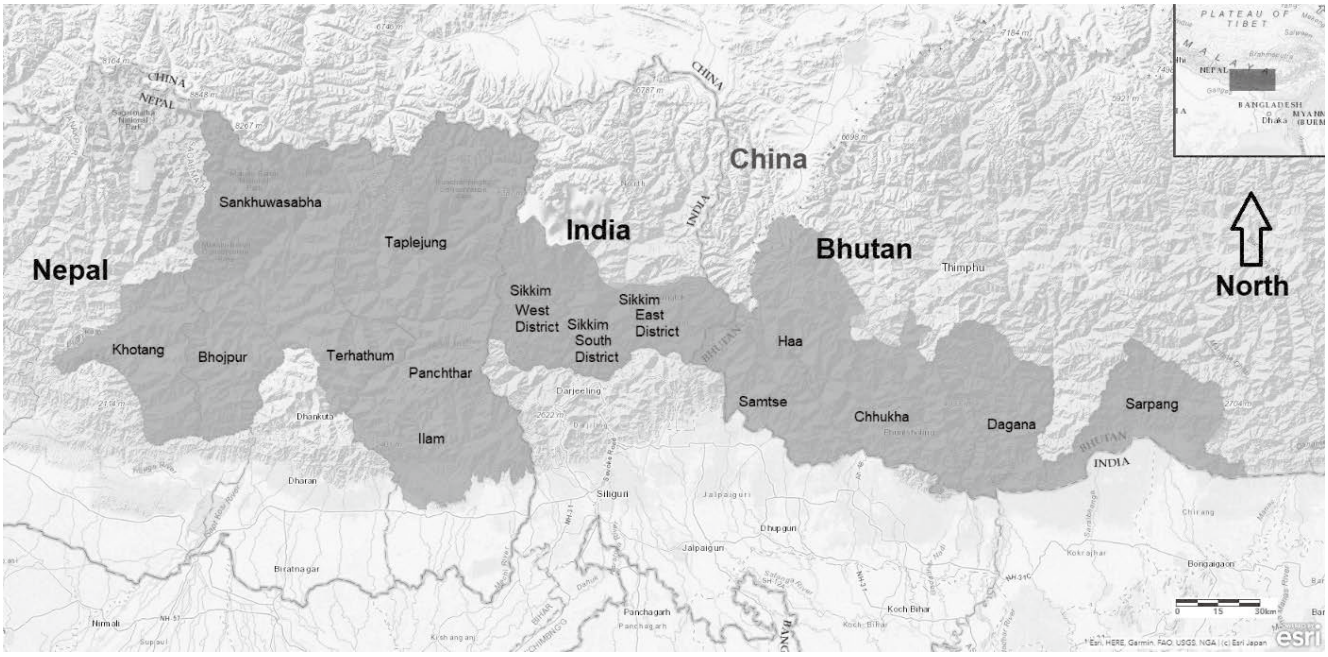

Figure 1　Major large cardamom growing districts in Nepal, India and Bhutan

Source: MoAF, 2018; MoAD, 2017; Sharma, et al., 2016.

The total area under large cardamom cultivation differs from the production area. The production areas, which is termed as harvested areas, productive areas and yielding areas in Bhutan, Nepal and India, is 77.2 and 83.4 percent of the total area under cultivation in Nepal and India, respectively (Indiastat, 2018; MoAD, 2017). In case of Nepal and Bhutan the data on area implies the production areas, whereas in case of India it is the total area.

All the three countries show the increasing trend of the area under large cardamom production (Figure 2). India shows relatively better trend compared to Bhutan and Nepal. However, the area under large cardamom production is dwindling from 2009 till 2012. There is a huge decline in large cardamom cultivated areas due to a decline in its productivity in more than 60 percent of cardamom plantations in Sikkim (Sharma et al., 2016). The cultivation area again started increasing after 2013. This increase is attributed to the revival initiatives started by farmers and extension offices (Sharma et al., 2016). The trend in the case of Nepal is virtually stagnant without much increase in the area under large cardamom production. The declining soil health, frequent infestation of viral disease and more importantly the huge price fluctuation might have harmed the farmers' confidence to expand its cultivation area (ICIMOD, 2016; ITC, 2017; Subba and Ghosh, 2017). This has jeopardized the livelihoods of marginal and cardamom-dependent farmers of the Eastern Himalayan region (Sharma et al., 2016; ICIMOD, 2016; Subba and Ghosh, 2017). In contrast, the area is constantly increasing in Bhutan after 2011, despite its dwindling before. There is a lack of literature to explain this trend, though some of the government initiatives to promote its market can be traced (MoAF, 2017a; MoAF, 2017b). Similarly, the dwindling production in Nepal and India, and the preference for Bhutanese large cardamom in the international market could have led to the increase in the area under large cardamom cultivation thereby its production in Bhutan (Kuensel, 2018). This can be revealed by Bhutan's increased share of area under large cardamom cultivation in the region. The share has increased from 5.1 to 10.4 percent between 2009 and 2016. In contrast, India's share has dropped from 66 to 61.4 percent in the same period. In case of Nepal, it hinged around 28 percent (Figure 2).

Despite the largest area under large cardamom cultivation, India lies second in terms of the global production. India has experienced a consistent growth in its production, especially after 2012 mainly through the expansion of large cardamom cultivation area beyond the traditional production areas such as Sikkim and Darjeeling. Large cardamom cultivation is taking the momentum in Arunachal Pradesh and Nagaland (Ravindran et al,, 2012; SBI, n.d.; Tangjang and Sharma,

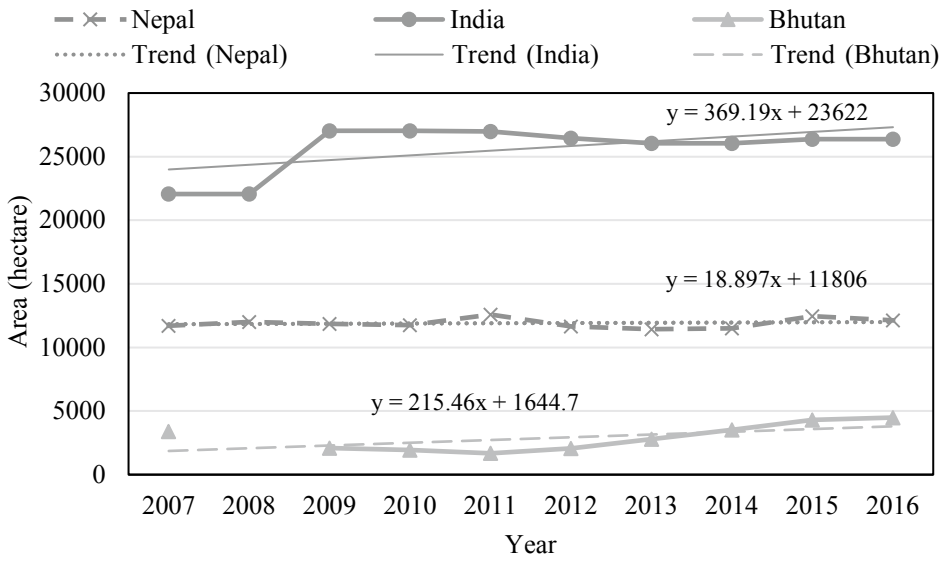

Figure 2　Area under large cardamom in the Indian sub-continent

Source: DoA, 2009; DoA, 2010; MoAD, 2008; MoAD, 2009; MoAD, 2010; MoAD, 2011; MoAD, 2012; MoAD, 2013; MoAD, 2014; MoAD, 2015b; MoAD, 2017; MoAF, 2017b; SBI, 2018a.

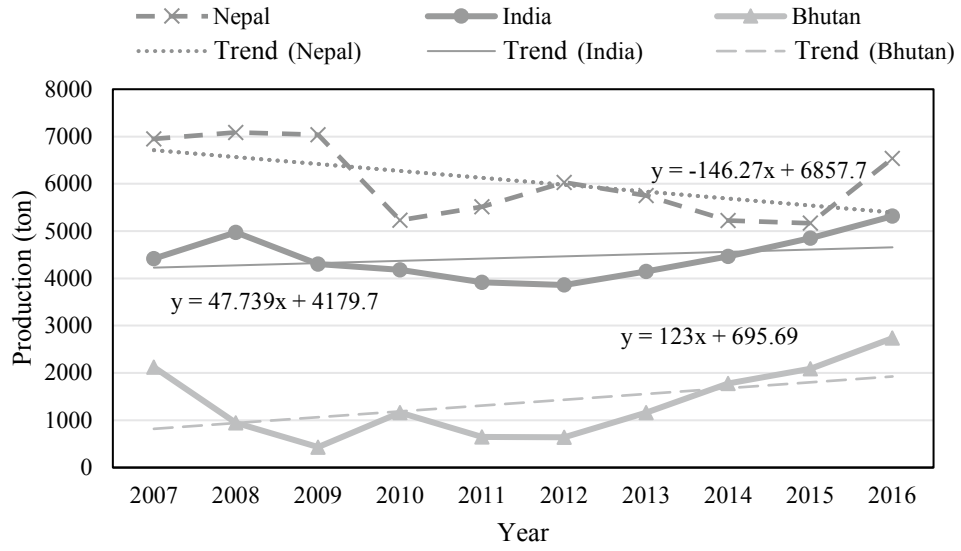

Figure 3　Production of large cardamom in the Indian sub-continent

Source: DoA, 2009; DoA, 2010; MoAD, 2008; MoAD, 2009; MoAD, 2010; MoAD, 2011; MoAD, 2012; MoAD, 2013; MoAD, 2014; MoAD, 2015b; MoAD, 2017; MoAF, 2017b; SBI, 2018a.

2018; Ngadong and Longkumer, 2018). This has helped to maintain its share of around 36 percent in the regional (global) production (Figure 3). Large cardamom production in Nepal is largely fluctuating even resulting in a negative growth in its production. It is mainly due to poor agronomic practices; declining soil health; frequent attacks of pests and diseases in the absence of insufficient disease-free sapling production; lack of research on plant varieties suitable for specific soils, altitudes and climatic conditions; and changing climatic conditions (ICIMOD, 2016; ITC, 2017; K.C. and Upreti, 2017; Yadav et al., 2015). It has resulted in the decline of its share from 51.5 to 44.8 percent in the regional production. Several initiatives have been taken by the government in Indian sub-continent to deal with the production (yield) decline. Such initiatives can be attributed to the recent positive change in production and production area (Adhikari and Sigdel, 2015; Chaudhary et al., 2015; Sharma et al., 2016). Bhutan's share on the regional production has consistently increased from 6.4 to 18.8 percent between 2011 and 2016 (Figure 3).

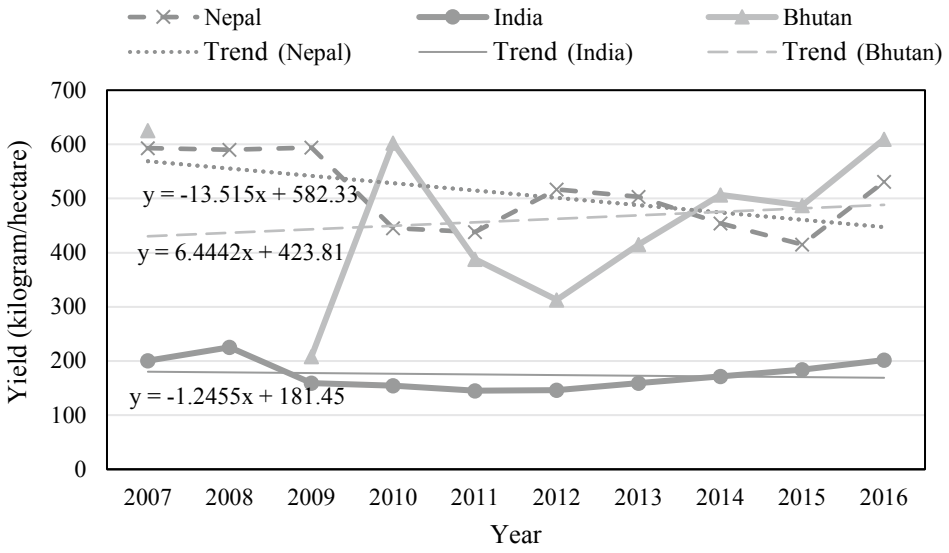

Figure 4　Yield of large cardamom in the Indian sub-continent

Source: DoA, 2009; DoA, 2010; MoAD, 2008; MoAD, 2009; MoAD, 2010; MoAD, 2011; MoAD, 2012; MoAD, 2013; MoAD, 2014; MoAD, 2015b; MoAD, 2017; MoAF, 2017b; SBI, 2018a.

Yield of large cardamom in Nepal and Bhutan is hugely fluctuating over the time (Figure 4) mainly due to the climate variability and disease infestation (ICIMOD, 2016; ITC, 2017; K.C. and Upreti, 2017; Yadav et al., 2015). There is a sharp decline in the yield in Bhutan from 2007 to 2009. Thereafter, however, there is an increase in the yield of large cardamom in Bhutan contributing to the positive trend. Whereas, Nepal has experienced a negative trend in the yield of large cardamom from 2007 to 2016. Nepal reported better yield till 2013, which is now surpassed by Bhutan. The yield in 2016 is reported to be 610 ton/ha in Bhutan, 531 ton/ha in Nepal and 201 ton/ha in India. Yield in case of India is low, perhaps because it is calculated based on the total area under cultivation rather than the yielding areas adopted by Bhutan and Nepal. Yielding area is close to 80 percent of the total area under cultivation. Besides, several factors are attributed for the lower yield, which eventually resulted in declined large cardamom farming in Sikkim, the major large cardamom producing state in India. Diseases and pests; old plantations and its poor management including nutrient management; the unavailability of good quality planting material; lack of irrigation facilities, training and financial support are resulting in the lower yield of large cardamom in India. Moreover, long dry spells, changing season and unpredictable rainfall is also responsible for the increased incidence of diseases and pests as well as decreased number of pollinator species (FSADD, 2014; Partap et al., 2014; Sharma et al., 2016). This consequently decreased the yield of large cardamom. However, the revival efforts by the concerned parties such as cardamom farmers themselves and extension agencies has contributed to steady and consistent increase in large cardamom yield (Partap et al., 2014; Sharma et al., 2016), especially after 2011 (Figure 4).

In contrast to the national figures, the yield reported in a specific location is different. For instance, Bhandari and Bhandari (2018) reported the yield of 232 kg/ha in ten village development committees of Terhathum district of Nepal in contrast to the national yield of 531 kg/ha and district yield of 398 kg/ha (MoAD, 2017). Yield in Nepal is reported as high as above 1000 kg/ha in newly introduced districts like Kavre, Morang, Lalitpur and Baitadi compared to 385−620 kg/ha in hilly districts in the Eastern region, which are the major production pocket of the country. Similarly, Tangjang and Sharma (2018) reported the yield of 345.45 kg/ha in Tirap district of Arunachal Pradesh and state's average of 450 kg/ha by Ngadong and Longkumer (2018), which are relatively high compared to that reported in Sikkim, the major cardamom producing state, i.e., 200 kg/ha in 2016/17 (Indiastat, 2018) and national average of 201 kg/ha (Figure 4). This suggests the better scope to expand large cardamom cultivation in newer areas for realizing the enhanced yield.

Ⅳ Marketing of large cardamom in the Indian sub-continent

Large cardamom is normally harvested starting from August till September in the region and sold to the traders after curing. However, it is not widely consumed in this region, rather consumed beyond the region. Hence, bulk marketing takes place in the major city centers in the plain, mainly in Siliguri in West Bengal and Delhi. Nepalese produce reaches the Indian market after it is assembled in Birtamod. Regional and global trade of large cardamom is driven mainly from Delhi. A small fraction of the produce is also directly exported to Pakistan and United Arab Emirates in case of Nepal (TEPC, 2018) and to Bangladesh (Boghra market) in case of Bhutan (MoAF, 2017b). Before this, there are several market actors involved in its marketing within the region.

Marketing of large cardamom in India is considered as unorganized mainly due to the dominance of moneylenders-cum-traders, lack of proper transportation, communication and processing services driven by the production at a small scale (Bhutia et al., 2017). However, considering the role of the Spices Board India (SBI), which controls and monitors the spice trade, including large cardamom in the country, it can be said that marketing of large cardamom is more organized in India. In Sikkim, the price of large cardamom has been established through auctions facilitated by the SBI since 2010. This has increased the price received by farmers by six fold (BusinessLine, 2016). The price increase and the price alert provided to the farmers has cascading effect benefiting the farmers growing large cardamom in other states as well. The SBI was in process to introduce the e-auction in order to decrease the market inefficiency. The price is also fixed by a negotiation between the farmer and the local dealer. In India, usually local dealers or wholesalers perform the necessary quality grading of dried large cardamom collected from the farmers before selling the produce in bulk to exporters (Bhutia et al., 2018). Hence, large cardamom in India is marketed through two marketing channels; farmers selling their produce after curing to the collectors/traders through negotiation and farmers selling their produce through auction in the auction center (Singh and Pothula, 2013). Singtam is the Sikkim's market hub where the auction is facilitated by the SBI on a fortnight basis.

In Nepal, a number of groups are involved in marketing of large cardamom. The local dealers or wholesalers collect the product from farmers and sell it to district traders or in some instance directly to the exporters based in Birtamod and Biratnagar (Southern plains). Both these agents, local dealers/wholesalers and district traders provide advance payment to the farmers to ensure the purchase after harvest (ITC, 2017). Such advance payments are repaid along with interest by selling the produce to the agent (Bhutia et al., 2018). These agents perform some basic post-harvest processing such as cleaning, grading, repackaging and storing until the product is demanded by the big traders in Birtamod. The final price to be paid to the farmers is determined based on the price in Birtamod. The large cardamom growers who are in need of cash in advance also practice the selling of crops in the field to the local dealers. This is also known as the *dahadani* system, where the price farmers receive is lower (Stoep, 2010 cited in Singh and Pothula, 2013 and Bhutia et al., 2018).

We observed that it is mainly food grain dealers in Birtamod who are involved in marketing of large cardamom supplied from the adjoining hills. There is also a practice of bartering large cardamom with the food grains in Birtamod. The big traders organize grading, packaging, storage and transportation of the produce to the Biratnagar custom points where export consignments and documentation for clearance are prepared and processed for export. In this process the produce is transported directly from Birtamod to Delhi via Biratnagar/Jogmani custom point (ITC, 2017).

Agriculture market in Bhutan is relatively organized as the pricing of potato and other vegetables are determined through an auction system (Kawai, 2018). However, large cardamom does not go through the auction system, but the price is determined by the traders based on the quality of the produce and international price. MoAF of Bhutan identified four marketing channels for Bhutanese large cardamom with the involvement of stakeholders ranging from a single stakeholder (local traders or exporters) to three stakeholders (middlemen, local traders and exporters) between the growers and importers (MoAF, 2017b). The advance payment system prevails in Bhutan as well. Farmers are provided with advance money by traders even before the crop is harvested with the condition to pay back within the stipulated time and supply their

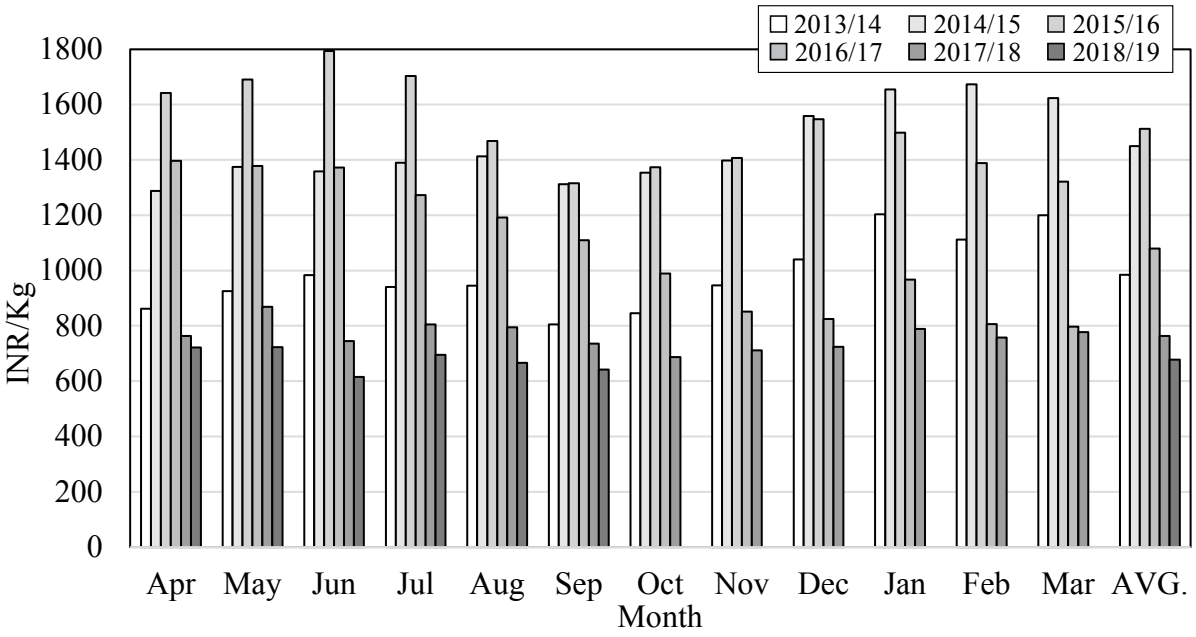

Figure 5　Annual and monthly price variation of large cardamom in Siliguri market

Note: US$ 1 equivalent to approximately Indian Rupee (INR) 58 in 2013/14; 61 in 2014/15; INR 64 in 2015/16; INR 67 in 2016/17; INR 65 in 2017/18; INR 68 in 2018/19 with the maximum recorded as INR 74.34 on October 8, 2018 (PoundSterlingLIVE, 2018)
Source: SBI, 2018b.

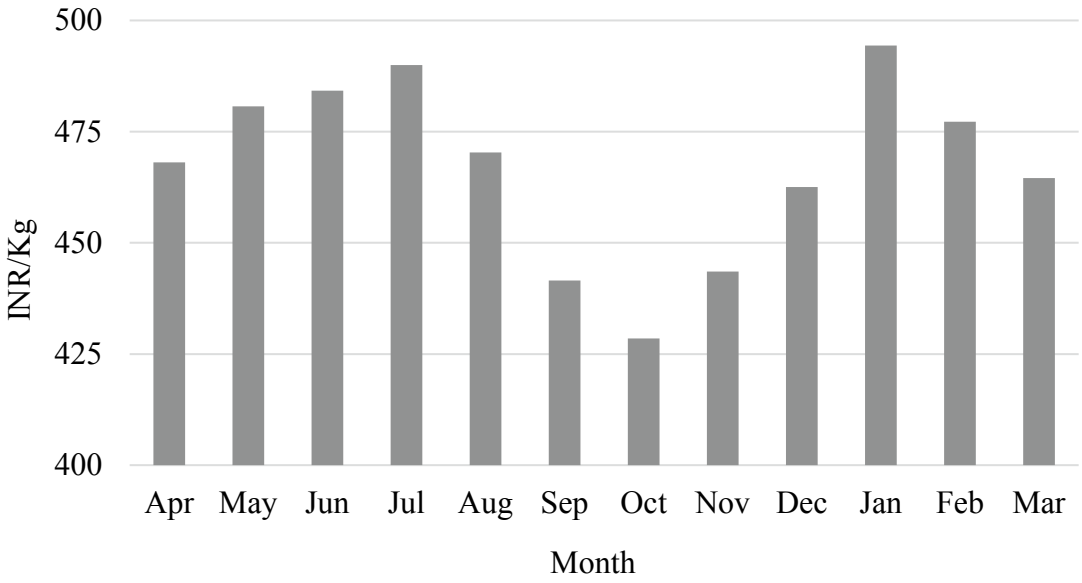

Figure 6　Average price variation of large cardamom (1995/96 – 2018/19)

Source: Indiastat, 2018.

harvest to the traders. This most often compel farmers to harvest large cardamom early, sometimes even before they reach optimal maturity. This practice affects growers because the price is determined by the traders through inspection of the quality upon delivery (MoAF, 2017b).

Price volatility remains the major concern in marketing or even production of large cardamom in the region. The price dipped from Nepali Rupees (NRs) 2700 per kg in 2014 to NRs 850 per kg in 2018 (approximately NRs 100 equivalent to US$ 1) (Portel, 2018). The malpractice of mixing the Nepali produce with the cheap import from China and Guatemala by traders in Nepal, India and even in Pakistan is to be blamed for such freefall (ITC, 2017). A similar trend of price fall can be reported in Siliguri market, which is the

regional market hub in the area. The market price so far in 2018/19 is merely 44.8 percent of the market price in 2014/15, when the price was a record high (Figure 5). The average price in 2018/19 may drop further below as the monthly price variation suggests the market price to remain low during succeeding months from September compared to the preceding months. The price remains low during the September, October, November and December during which the farmers harvest their product and bring it to the market.

Farmers would have received a higher price, if they were able to hold their produce from September 2014 when the market price was INR1312.5 per kg till June 2015 when the market price was INR1793.8 per kg - 36.7 percent higher than in September (SBI, 2018b). However, in recent years, due to the declining price trend, it would be better for farmers to sell their produce immediately after the harvest. Even during the period of price decline (2015/16 to 2018/19) there is a clear evidence that the price of large cardamom starts to increase from December and reach its first peak in January (Figure 5). It starts declining from January and reach the lowest in March. However, the price in March is substantially higher compared to the price from September till November. In July, the price reaches its second peak when the price level is slightly lower than the price level at the first peak. The similar holds true for the average monthly price for the last 24 years (Figure 6).

V Trading of large cardamom

As large cardamom is not traditionally consumed in its production pockets, the produce is traded through the major market centers in the adjoining southern plains. Siliguri serves as the regional assembly market where the majority of large cardamom produced in the region is assembled and moved to New Delhi. This is the market through which around 90 percent of regional produce is traded to New Delhi (Figure 7). Table 1 shows the major market centers in three large cardamom producing countries as well as Pakistan, the largest large cardamom importing country. It is only in Nepal, where the organized market center does not exist.

Virtually all large cardamom produced in Nepal is exported. For instance, the production and export of large cardamom were 5,225 and 4,914 ton respectively in 2014; and 5,166 and 5,300 ton respectively in 2015 (MoAD, 2014; MoAD, 2015b; Yadav et al., 2015). ITC (2017) reported that only 1 percent of large cardamom

Table 1 Major market centers of large cardamom

Country	Market centers
India	Sikkim – Singtam Auction Market Siliguri – Alupatti New Market New Delhi – Garodia Market
Nepal	Fikkal, Dhankuta, Birtamod
Bhutan	Phuntsholing Auction Market
Pakistan	Karachi – Jodai Market Lahore – Akbari Mandi Rawalpindi – Ganj Mandi

Source: ITC, 2017.

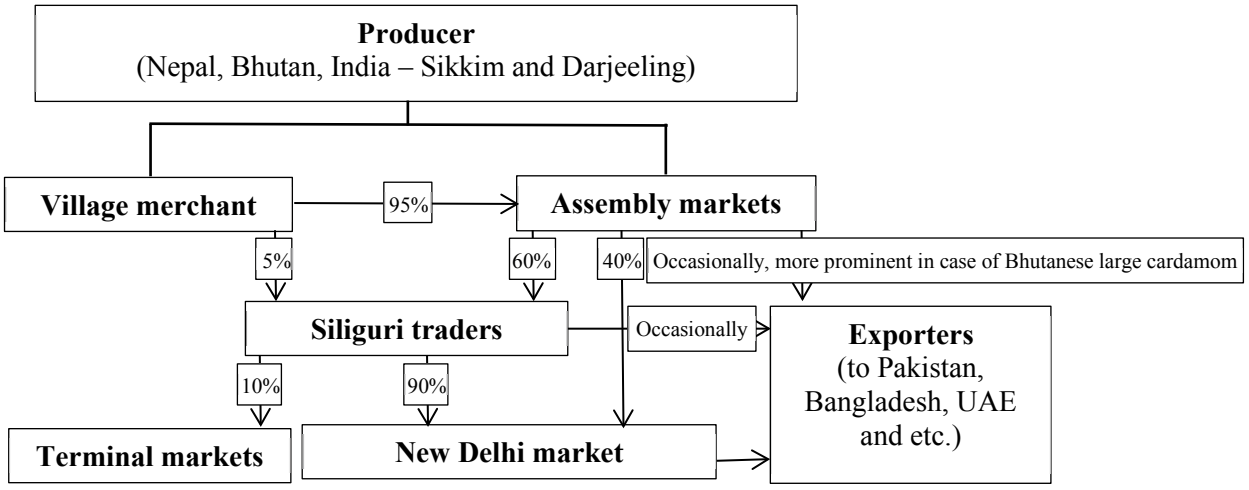

Figure 7 Flow of cardamom from Indian sub-continent

Source: Indo-Swiss Project Sikkim 1993 cited in Joss et al., 2004; ITC, 2017.

production in Nepal is consumed domestically. Hence, with worth NRs 4.633 billion (1USD equivalent to approximately NRs104 in 2017), large cardamom constitutes the second biggest export from Nepal or the first biggest agricultural export of Nepal (MoF, 2017). Siliguri – the nearest market from Birtamod, the major assembly market in Nepal – used to be the major market of Nepali large cardamom (ANZDEC, 2003; Joss et al., 2004; ITC, 2017). However, in the last decade, there is a shift in the market from Siliguri to New Delhi. In recent years, consignments of large cardamom are directly loaded in Birtamod and transported to New Delhi through Biratnagar custom point, the corresponding Indian custom point of which is Jogmani, Bihar (MoAD, 2015a). However, this export is taking place informally as there is a provision of 4.5 percent state movement tax in India, which needs to be paid on the value of the product. Specified tax amount per consignment or the tax imposed by quantity would facilitate formal export of large cardamom from Nepal to India (ITC, 2017). Time taken in transportation and associated price risk as well as differential treatment by India and Bangladesh to Nepali large cardamom export is hindering expansion of international market for large cardamom. It takes one month to travel a consignment from Kolkata (India) to Karachi (Pakistan), which is hindering the direct trade of cardamom with Pakistan, the largest importer of large cardamom. Similarly, the custom tariff of more than 54 percent levied on Nepali large cardamom by Bangladesh is hindering its export to Bangladesh. Whereas, the tariff imposed on Bhutanese large cardamom is substantially waived (MoAF, 2017b). Moreover, all types of taxes involved in the movement of Bhutanese products through Indian territories are waived by India (ITC, 2017). Thus, Bangladesh is an important market for Bhutanese large cardamom.

The proportion of Bhutanese large cardamom export to its national production is only around 47 percent in 2016, despite the produce not being consumed widely within Bhutan. The proportion was as high as 96.3 percent in 2011/12 to as low as 40.5 percent in 2014/15. Despite this, the rate of increase in large cardamom export of Bhutan in the last seven years is quite encouraging. It has increased from 476.2 ton to 1,289 ton between 2010 and 2016 with the corresponding increase in its national production (MoAF, 2017b). Cardamom produced in Bhutan is exported to the importers based in Siliguri in India and Boghra in Bangladesh. The tariff concession has encouraged the Bhutanese large cardamom trade with Bangladesh constituting as high as 67.9 percent of total large cardamom exports to Bangladesh, though it declined to around 46 percent in 2016 (MoAF, 2017b). MoAF (2017b) identified two important concerns for the trade of Bhutanese large cardamom with India. The first one is the tax levied on Bhutanese large cardamom due to the introduction of Goods and Services Tax in India. The second concern is the non-recognition of Bhutan Agriculture and Food Regulatory Authority's Phytosanitary Certificate by the Indian counterpart.

The common Harmonized System Code (HS Code) of 090831, under which the global trade record of large cardamom (black cardamom) and small cardamom (green cardamom) is maintained, makes it very difficult to trace the global trade of large cardamom. This often misleads even the policy makers and places countries in different ranks in terms of global production (export) and consumption (import). The Middle East countries are supposed to be the major market for large cardamom produced in the Indian sub-continent (MoAD, 2015a; ITC, 2017). However, a very recent study suggested that the market potential in the Middle East for large cardamom is not promising. Rather, it is small/green cardamom, which has a good market in the Middle East countries (MoAF, 2017a). Large cardamom produced in Guatemala is regarded as false cardamom or duplicate cardamom. Such produce is generally imported and adulterated with the one produced in Nepal, Bhutan and India. Thus, such practice is a potential threat to the cardamom growers in the Indian sub-continent, most importantly, through the freefall in the international price of large cardamom (ITC, 2017).

A major portion of Indian large cardamom is consumed domestically within India. The rest, along with the imports from Nepal and Bhutan, is exported to other countries. The trade figure of large cardamom in India suggests that Pakistan is the biggest market for large cardamom produced in the Indian sub-continent. Nearly 80 percent of the large cardamom exported from India was destined for Pakistan in the last two years. In 2017/18, with its share of 81.5 percent, Pakistan was the largest market for large cardamom exported from India

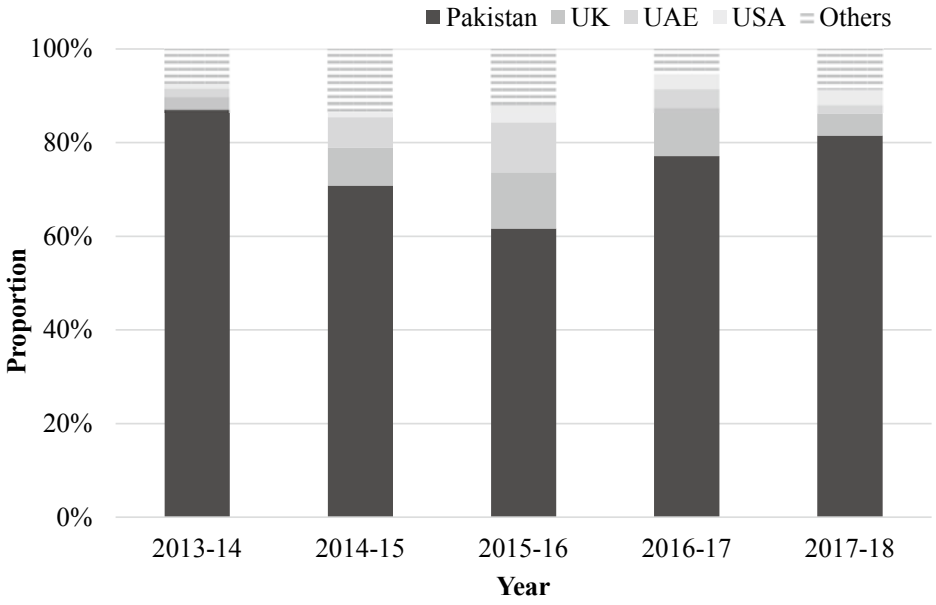

Figure 8　Export of large cardamom from India to different countries

Source: SBI, 2018a.

followed by the UK (4.6 percent), USA (3.2 percent) and UAE (2.1 percent) (SBI, 2018a). South Africa, Australia and Canada are other countries recently importing large cardamom from India (Figure 8).

Ⅵ Conclusion

Large cardamom is the important cash crop for small-scale farmers in the Eastern Himalayas of the Indian sub-continent. It is mainly grown in the Eastern hills of Nepal, Sikkim in India, and South-Western Bhutan. It contributes significantly to the household, regional as well as the national economy. This paper aims to assess the production, marketing and trade dynamics of large cardamom in the three countries of the Indian sub-continent. The assessment is based on the data compiled through several government statistics and publications. A brief field visit was also conducted in the only large cardamom market hub in Nepal in September 2017. The area under large cardamom cultivation in Nepal is almost stagnant. The negative trend of yield has contributed to a reduction of its production in Nepal. In India, however, increase in area under large cardamom cultivation has compensated the yield decline, thereby contributing to increased production. Disease infestation, poor crop management including aged plantation and changing climate is blamed for the yield decline in Nepal and Sikkim/India. In contrast, Bhutan achieved relatively remarkable production growth due to area expansion as well as positive yield growth. India has a relatively organized market for large cardamom facilitated by Spices Board India, where the price is set through auction organized close to its production pockets. In Nepal, Bhutan, and also partially in India, farmers sell their produce after curing to village traders, who either supply the produce to district market or directly to the major market hub; Birtamod in case of Nepal and Phuntsholing in case of Bhutan. Largely the price in these market hubs serves as the basis for the price to be paid to the farmers. The system of advance payment to the farmers prevails in all the three countries. This would cause stress for the farmers to sell their produce at a lower price to the traders either due to the early harvest leading to low quality produce or due to the compelling condition to sell their produce to the predetermined traders. Price volatility remains the major concerns in marketing of large cardamom. Any efforts to enhance farmers' capacity to hold their produce for at least two months would generate a better price for their produce.

Siliguri market in the Indian state of West Bengal is the regional market hub for large cardamom produced in the Eastern Himalayas of the Indian sub-continent. However, traders in the respective countries are also able to expand their access to the central market in New Delhi, India by Nepali traders of Birtamod or Boghra

market in Bangladesh by Bhutanese traders. India itself is the important market. A differential provision in inter-country trade is restricting the market/trade for large cardamom produced in the regions. For instance, the trade of cardamom between Nepal and Bangladesh is discouraged by more than 54 percent custom tariff levied on Nepali large cardamom by Bangladesh. Tariff on Bhutanese large cardamom is substantially waived. Similarly, Goods and Services Tax imposed on Bhutanese large cardamom and non-recognition of the Bhutanese Phytosanitary Certificate by Indian counterpart are important concerns for the trade of Bhutanese large cardamom with India. Whereas, this does not remain the concern for large cardamom trade between Nepal and India, mainly because it is taking place informally. Similarly, adulteration of the large cardamom supplied from the Eastern Himalayas with the false cardamom remains the major threat in the production as it is causing freefall in its price.

It is often misconceived, mainly due to aggregated global trade data of large and small cardamom under the HS Code 090831, that the countries in the Middle East are the biggest market for large cardamom. However, the data suggest Pakistan to be the biggest export market for large cardamom produced in the Eastern Himalayas of the Indian sub-continent. More than 80 percent of the large cardamom exports from India go to Pakistan.

The production constraints specifically, diseases, poor agronomic practice, inefficient curing in traditional way leading to less marketable produce; marketing constraints through price support and packaging with geographical indication; and trading constraints such as custom and phytosanitary barrier in inter-country trading and adulteration need to be addressed urgently for the sustainability of large cardamom production in the Eastern Himalaya of the Indian sub-continent. This will be crucial in improving the welfare of thousands of smallholding households in the region.

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