

Large Cardamom Farming In Some Villages Of Ilam District

—Bhim Prasad Subedi★

INTRODUCTION:

Large cardamom in recent years has been an important commodity in the international trade. Recent statistics reveal that India seems to be the largest producer and exporter of large cardamom in the world.¹ Nepal occupied the third position in its production in 1974. The major cardamom exporting countries are India, Guatemala, Nepal, Tanzania, Sri Lanka, Bahrain and Thailand. Few other countries like F. R. Germany, China, Indonesia, Singapore, Laos, Dubai (UAE) are also notable in this respect. In the case of import, Islamic countries are the major importers of large cardamom. Among them Saudi Arabia imports more than one third of the total cardamom in the world (1974), Kuwait is the second largest importer. The other countries like Singapore, Sweden, U.S.A., U.S.S.R., F.R. Germany, Hongkong, U. K., Denmark, Netherland, Iran, Democratic Yeman, G.D.R., Belgium and Luxemburg appear as other cardamom importing countries.

There are two types of cardamom: small and large. Small cardamom is the product of tropical area. It is yellowish in colour. Most of the world trade in cardamom consists of small cardamom. Thailand, parts of India, Guatemala, Tanzania and Sri Lanka are its main producers. Large cardamom is a sub-tropical crop grown in the slopy and moist areas. Nepal, Bhutan and India are its major producers.

Eastern hills of Nepal is notable for large cardamom production. Ilam, Panchthar, Terhathum, Taplejung and Dhankuta are notable districts for its production at present. Ilam contributed about 62 percent of the total

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1. Cardamom Board, Know your Market for Cardamom (Cochin Cardamom Board, 1974), p. 3

production of large cardamom in 1974/75.² During 1977/78 large cardamom contributed about 2 percent of the total export earnings in Nepal. It is a newly adopted crop in comparison to other cash crops like Jute, Tobacco and Tea in Nepal. Therefore there is evidently a dearth of statistics and studies on large cardamom farming. The present study focusses on previous land use, production and marketing of large cardamom in a few village panchayats of Ilam district of Nepal. To analyse the previous land use, the effect of farm size on production and its relationship, trends of market price, and its effect on production are the basic objectives of this study. The conclusion derived from this study however should have some bearing and relevancy to other large cardamom growing areas of Nepal though the study area over here is limited to a few village panchayats of Ilam district.

METHODOLOGY

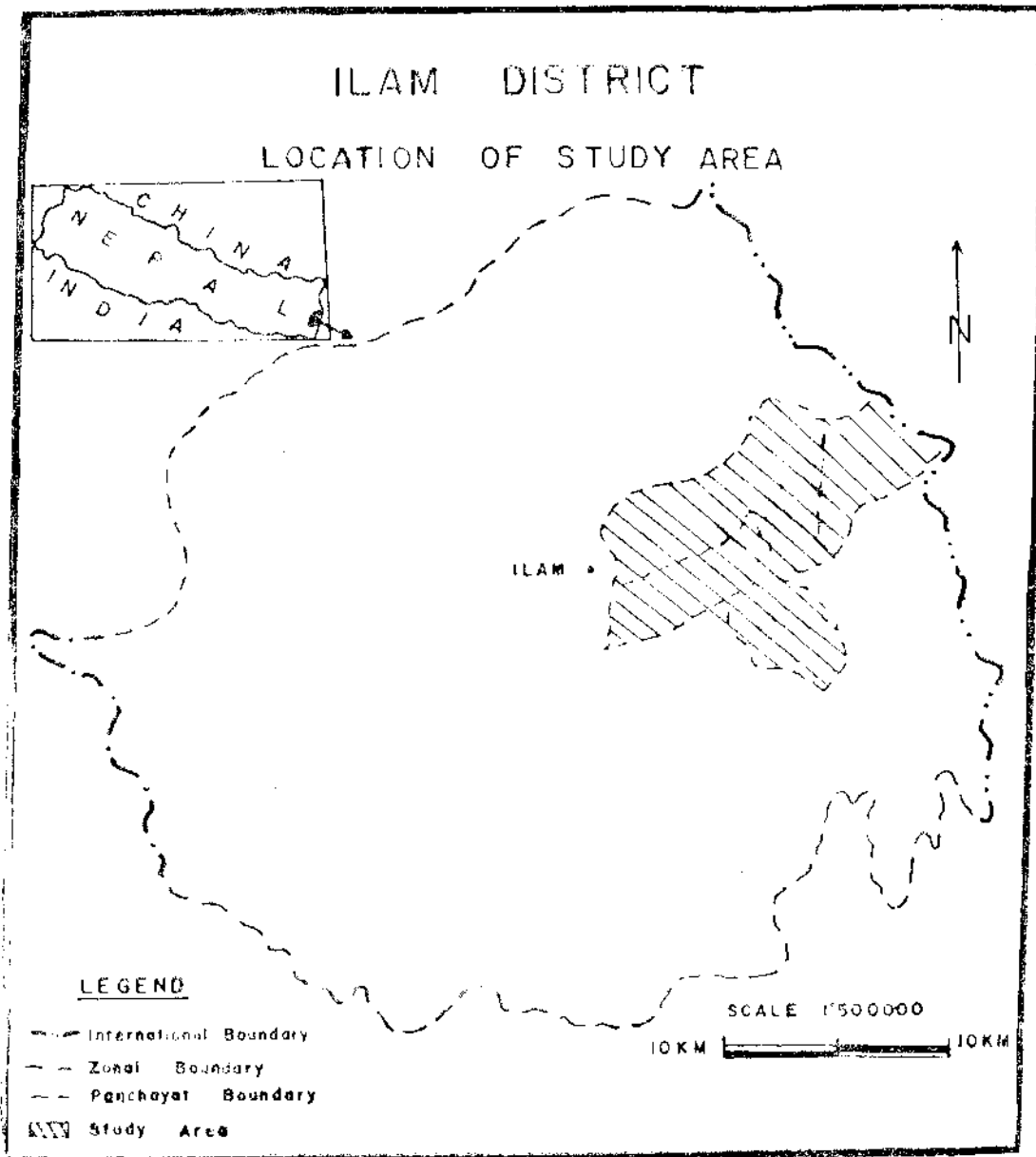
This study is based on the fieldwork conducted in 1979 (May/June). The general trend of its production in Nepal is derived from Overseas Trade Statistics, Custom Office and Agriculture Department of H.M.G. The data pertaining to international situation is based on the bulletin and reports published by different international agencies.³

Selection of Panchayats and households: Panchayatwise or wardwise records of large cardamom production and producing farmers are not available. The available information list the name of main panchayats only. Records on a micro-level do not exist. Because of this reason the study area selected has been biased in favour of the author's understanding of the study area. Ilam district has been selected for its highest contribution in the production of large cardamom. The village panchayats have been selected on the basis of:

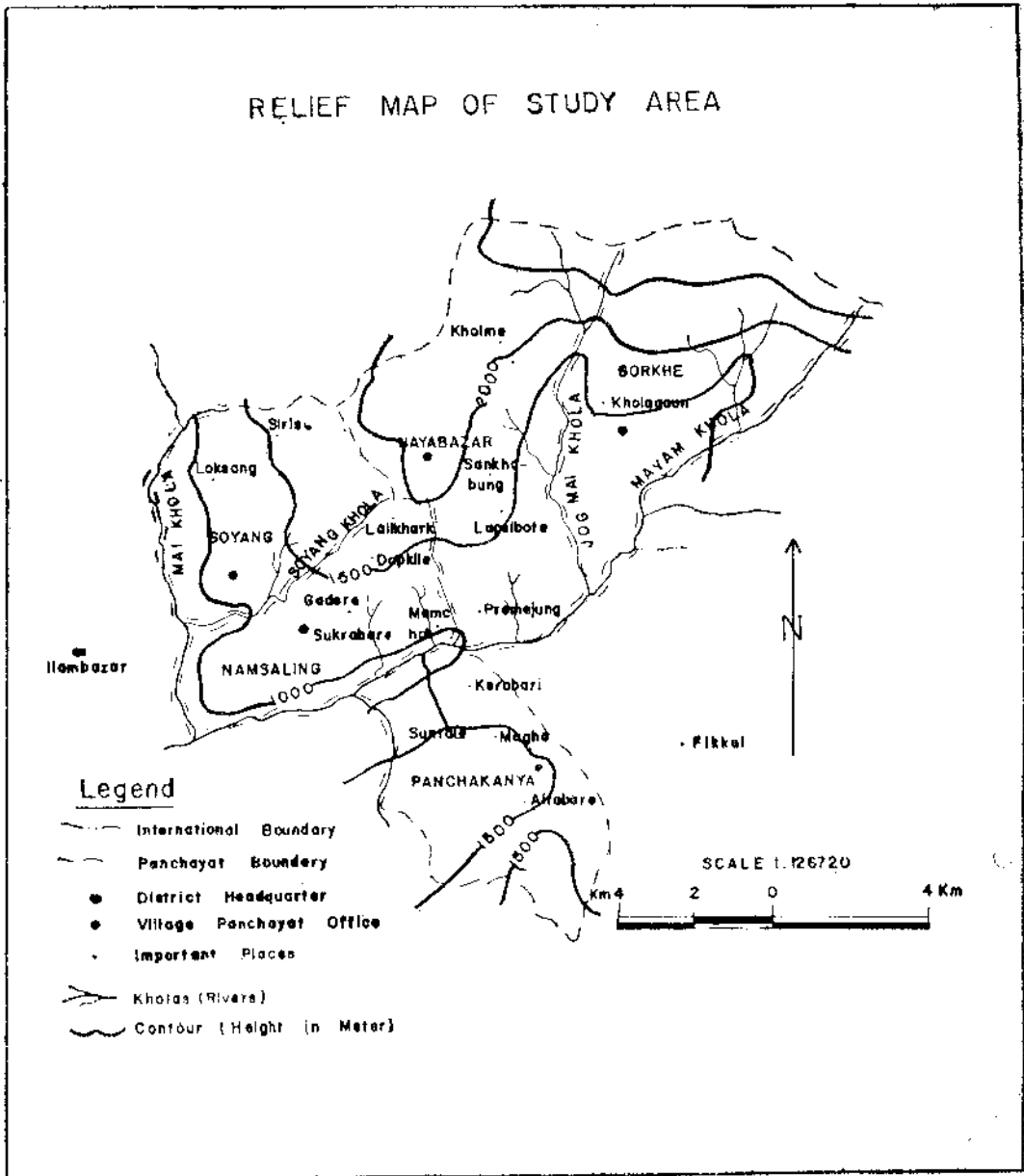
- a. Panchayats with significantly high large cardamom production
- b. Panchayats with a long history of large cardamom farming, and
- c. Panchayats where large cardamom farming has begun very recently.

2. Trade Promotion Center, Nikasi Sambhabyata Adhyayan (Kathmandu; Trade Promotion Center, 1978) p. 34

3. These include: International Trade Center, Spices (A Survey of World Markets) Vol. II (Geneva: ITC, 1974); ITCs Spices, Trends in World Market (Rome: ITC, 1962); L.C. Green, Report on a visit to Nepal (London: Tropical Product Institute, Ministry of Overseas Development, 1978); Cardamom Board, Know Your Market for Cardamom (Cochin; Cardamom Board, 1974)



RELIEF MAP OF STUDY AREA



Soyang falls in the first group; Gorkhe, Nayabazar and parts of Panchakanya fall in the second group and Namsaling and parts of Panchakanya fall in the third group. Personal observation, informal talks with the farmers have played a very important role in presenting the situation of large cardamom production.

BACKGROUND OF THE STUDY AREA:

The present study area lies in the eastern part of the Mai river in Ilam and extends upto the Indian boarder. This area mainly hills, forms part of Mahabharat range. The height ranges from less than 1000 meter to 2000 meter above the sea level (Fig 2). The maximum and minimum average temperature recorded at Karfok (1968) is 21.8° c and 12.7° c. In some parts minimum temperature reaches 0° c in winter. The average rainfall is about 1300mm with maximum in July. Two of the four major kholas of Ilam district flow across the study area. Among them Jogmai is the major khola (Fig 2). Mai Khola although larger in volume flows through the western boarder of Soyang and Namsaling.

More than 94 percent of the total population are engaged in agriculture (The district average is 96.6 percent according to 1971 census). Cereal crops like rice, maize, millet and wheat are still more important although potato, large cardamom, peas are cultivated in most parts of this area.

Farmers suffer mainly from the lack of irrigation facilities. As the altitude rises rice, maize and millet respectively become the dominant crops of the area. Both multiple and intercropping are practised. The whole cropping pattern is of an intensive subsistence nature.

LARGE CARDAMOM PRODUCING AREAS:

Large cardamom is the main cash crop of this area. It is grown between the altitudes of 1000 meter to 2000 meter but the better suited areas are between 1000 meter to 1500 meter. Since the study area has an average altitudinal range of 1000 meter to 2000 meter, most areas are suitable for large cardamom production. Table 1 shows the percentage of land under large cardamom in the study area.

**Table- 1: Land under Large Cardamom Farming:
(Among Sample Farmers)**

Panchayat	Total cultivated+ land (in Hectare)	Land under large cardomom (in Hectare)	Percentage
Namsaling	73.56	16.72	22.7
Soyang	46.98	9.49	20.2
Nayabazar	60.51	21.24	35.1
Gorkhe	60.00	15.18	25.3
Panchakanya	58.00	19.95	34.4
Total	299.05	82.58	27.6

Nayabazar due to its physical configuration particularly slope and altitude, has the highest percentage of land under large cardamom. Large cardamom was introduced quite earlier in this area. Panchakanya the second, with the same condition is further enhanced by transportation linkages specially by Charali Ilam Highway. In Soyang the southern areas are more fertile for rice and other crops. Also it has transportation and marketing problem to take their produce for market compared to other areas. The sample figure shows that about 28 percent of the total cultivated land is devoted to large cardamom farming in these areas.

PREVIOUS LAND USE IN LARGE CARDAMOM GROWING AREAS:

Substantial change in the land use has occurred in these areas. The different land use categories of the past has been changed to the large cardamom producing areas at present. The present large cardamom growing areas were wasteland, forest, bushes and pastureland mostly in the past.

+ The common unit of land is Ropani in this area. This has been converted into Hectare where one ropani equals 0.05128 Hectare.

Table- 2: Type of Land Brought Under Large Cardamom Farming Areas
(Among Sample Farmers)

Previous Landuse Categories	Total land (in Hectre)	Percentage
Wasteland	32.77	39.7
Forest and Bushes	32.00	38.8
Pastures	12.11	14.6
Cultivated land	5.70	6.9
Total	82.58	100.0

Waste land includes relative slopes, swamps, land near the streams. Of the total large cardamom growing areas in the sample about two fifth was wasteland in the past. After the benefit and nature of crop was realized by the farmers, they gradually brought such wastelands under large cardamom farming. Among the five sample panchayats Namsalling has more areas under wasteland due to its low productivity in the northern areas.

About 38.8 percent of the present large cardamom growing areas were bushes and forest previously. These lands were not economically used during the past. The bushes and forests perform ecological function. Some of the species came to be actually useful for large cardamom because these functioned as major shade a trees, i. e. 'uttis' (*Alnus nepalensis*), 'Siris' (*Albizia lebbek*). Shade is one of the essentials for the existence of large cardamom plants.

'Kharkas' or 'Nagis' were common in most of the areas above 1500 meter in these areas. About 14.6 percent of the present large cardamom growing areas were grazing ground or pastures in the past. Lack of irrigation facilities and altitudinal constraint have made these areas less productive compared to the relatively low altitudinal areas of large cardamom farming.

Previously cultivated lands were also encroached for large cardamom farming. This process took place when the farmers realized the comparative advantages of large cardamom farming in their marginal areas. Among the

4. 'Kharkas' or 'Nagis' mean large open field used to grazing of the cattle along with sheds.

total encroached cultivated land about 56 percent constitute rice producing areas and 44 percent malze areas. Because of easier irrigation facilities more rice areas were brought under large cardamom farming than malze areas. But this sort of encroachment over cultivated land is only confined to the high altitude where field per unit of cereals is very low.

This process of change in landuse is still underway in the study area. Marginal lands and even cultivated land with low economic returns are gradually being turned over to large cardamom. Perhaps this is the reason why large cardamom farming in the study area is of an extensive nature.

TRENDS IN LARGE CARDAMOM PRODUCTION:

Though large cardamom was introduced much earlier than 1963/64 it does not have a long history compared to other cash crops. It gained its popularity after 1963/64 among the farmers mainly because of the increased market price. In these days it is very popular and farmers of this area are continuously bringing areas under large cardamom. Consequently large cardamom production has been on the increase (Table 3) though there are fluctuations. Fluctuations are basically the result of natural constraint (i. e. climate), pesticides and market price. The decline in production during 1974/75 was because of the draught since irrigation facilities are extremely poor. Again decrease in production during 1977/78 is the result of

Table- 3: Trends in Large Cardamom Production
(Among Sample Farmers)

Fiscal Year	Production (in quintal)	Absolute change	Percentile change
1973/74	114.0	—	—
1974/75	111.2	-2.8	-2.5
1975/76	157.6	+46.4	+41.7
1976/77	172.8	+15.2	+9.6
1977/78	171.6	-1.2	-0.7
1978/79	200.4	+28.8	+16.8
★1979/80	214.8	+14.4	+7.2

★ Estimated by the farmers since the survey was conducted in such a situation where farmers were just to harvest it.

pesticides and uncertain rainfall, Increased production in 1975/76 was due to favourable natural condition and increase in acreage of land. Due to heavy dependence on nature the causes of fluctuations can not be explicitly explained. However, it is only the nature that determines the production of large cardamom especially in the areas of early introduction, according to the farmers. This is more so in the case of Nayabazar, Panchakanya and Gorkhe Village Panchayats,

THE EFFECT OF FARM SIZE ON PRODUCTION:

Farm size is one of the important factors related to production. Since large cardamom is cultivated by traditional method in most cases the medium farm size is better suited and has better yields.

**Table- 4: Distribution of Farm Size
(Among Sample Farmers)**

Farm Size (in Hectre)	Number of farmers	Percentage	Cumulative percentage
0 - 0.26	24	24	24
0.27 - 0.52	28	28	52
0.53 - 0.78	12	12	64
0.79 - 1.04	10	10	74
1.05 - 1.30	9	9	83
1.31 - 1.56	7	7	90
1.57 and above	10	10	100

Table 4 shows that about 52 percent of the total land holding falls below 0.52 hecter of land (approx 10 ropani), This is probably the result of small land holding of most of the farmers in which they are compelled to grow various crops for their threshold livings. Recent introduction of large cardmom in most of the areas and a little irrigational facilities further aggravate the holding of land. Since most of these lands were economically unproductive in the past and they had to pay revenue if they claimed their ownership farmer kept very little of such lands. This situation was more prominent in the case of 'Kharkas' and 'Nagis' where they had to pay nothing as revenue before the topographical and geodetic survey (1972/73). Almost about 26 percent of the farmers have more than one hectare of land. There are only two percent of the farmers who have the land holding of more than two hectare. The general nature of Hindu society, and poverty seems partially responsible for the existence of dominance of small holding of land,

Along with the study of farm size the study of production provide insight into the variation in production as a result of the differential size of the farms. Table 5 depicts the farm size, production and productivity (in the loose term) among the sample farmers.

**Table- 5: Farm Size and Production of Large Cardamom
(Among Sample Farmers)**

Farm Size (in Hectare)	Average Production (in quintal)	Average Productivity Hec. (In quintal)
Below 0.26	0.84	6.6
0.27 - 0.52	1.92	5.0
0.53 - 0.78	2.04	3.2
0.79 - 1.04	2.40	2.7
1.05 - 1.31	3.16	2.7
1.32 - 1.58	3.04	2.2
1.59 - 1.84	3.44	2.1
1.85 - 2.01	2.76	1.4
2.02 and above	5.06	2.1

Increase in farm size result in the increase of production in the absolute terms. Such an increase, however, is not proportional (Table 5) Average yield per unit seems decreasing as the farm size goes on increasing. The average yield per hectare in the first category i. e. below 0.26 hectare is 6.6 quintal and it decreases to 2.3 quintal when the farm size reaches to more than 2 hectare. The 'r' value calculated to see the relationship between farm size and productivity after Pearson's Product Moment Correlation appears to be - 0.87. This shows negative relationship between the farm size and productivity. Productivity appears to decrease with an increase in the farm size.

This sort of relationship may be the product of two reasons. One, as the farm size increase large cardamom farming becomes extensive in nature. The relative lack of economic competition in land use in most of large cardamom growing areas means that any addition to the real income through this crop is welcome to the farmers because the opportunity cost is very low. The second and the related reason is that irrigation and pesticide facilities are limited in the study area. Therefore, the larger is the farm size, the lower the productivity has been.

LARGE CARDAMOM MARKETING IN THE STUDY AREA

Marketing is an important element for promoting farm production above subsistence. The locational arrangement of market centers play a more pivotal role in the production as well as price of the cash crops. In order of magnitude of flow of the crop there are five centers working as market centers for the large cardamom in the study area. These centers are Fikkal, Hambazar, Gorkhe, Nayabazar and Sukrabare (Namsalng) (Fig. 2). Average aerial distance, transportation cost, percentile flow from different panchayats to their respective market center along with the price is given in Table 6.

Table 6: - Transport cost, Distance and flow of cardamom.

From / To	Hambazar (3312)	Sukrabare (3187)★	Nayabazar (3125)★	Gorkhe (3125)★	Fikkal (3500)★
Namsalng	Distance (In Km) ★	—	1	—	—
	Transport (cost Rs/q)	--	12,50	--	--
	Percentile flow	--	100	--	--
Soyang	Distance (in Km)	5	2.3	5.5	--
	Transport (cost Rs/q)	30	20	20	--
	Percentile flow	70	20	10	--
Nayabazar	Distance (In Km)	—	--	1	7.8
	Transport (costRs/q)	—	—	7.50	15
	Percentile flow	—	—	64	10
Gorkhe	Distance (in Km)	—	—	—	1
	Transport (cost Rs/q)	—	—	—	12.50
	Percentile flow	--	--	--	24
					76

Pancha- kanya	Distance (in Km)	--	--	--	--	4
	Transport (cost Rs/q)	--	--	--	--	15
	Percentile flow	--	--	--	--	100

★ The figure in the parenthesis indicate the price of large cardamom (Rs / quintal after the sample farmers)

★ ★ Distance is calculated from the map published by Topographical Survey Branch 1977 (1:250,000)

Among the five internal market centers Ilambazar and Fikkal are located outside the study area. Fikkal, with its location in Charale Ilam Highway seems to be the major market center of the study area. Gorkba, although located within the study area appears to be of least importance. Relative low price and adverse effect of Charale Ilam Highway (which benefited Fikkal) may be responsible for this situation,

Aerial distance is indicative of the actual distance. Except for the case of Soyang to Ilam distance (5 km) the other distances reflect the reality. The exception of Ilam- Soyang is due to the existence of Mai Khola in between where there is no bridge in the convenient place. Transportation cost differs with increasing distance. Increase in transportation cost within the study area does not seem proportional. Cultural linkage (as they have to visit the market without carrying nothing and have to carry in their return) partially explains the situation.

In the case of flow of goods basic factor responsible is market price which they get from the particular center. The more the price they get the more the flow has been general. In some cases traditional linkage is also responsible for the amount of flow of large cardamom. This can be seen from the flow of 10 percent large cardamom to Gorkhe though they get higher price in Fikkal and the same amount at Nayabazar. Of course it is true that if they have to make a choice of the center with the same price or a little bit higher, distance and transportation cost play an important role,

MARKET PRICE AND PRODUCTION:

Market price of large cardamom has played a very important role in increasing its production in recent years. The available source indicates that its price was only Rs 200 per quintal during 1963/64 while it went up to Rs 2000 per quintal in 1970/71. It shows that within a period of seven years its price increased by 900 (percent) Table 7.

Table 7: Market Price of Large Cardamom

Fiscal Year	Price (Rs / q.)	Fiscal Year	Price (Rs /q.)
1963/64	200.00	1971/72	1400.00
1964/65	250.00	1972/73	1700.00
1965/65	312.50	1973/74	1900.00
1966/67	375.00	1974/75	2012.50
1967/68	500.00	1975/76	2700.00
1968/69	875.00	1976/77	2000.00
1969/70	1000.00	1977/78	2750.00
1970/71	2000.00	1978/79	3295.50★
		1979/80	3250.00★

Source: (1) H.M.G., **Agriculture Statistics of Nepal**. Kathmandu: Ministry of Agriculture, Marketing Service Department, 1977.

(2) Derived from **Overseas Trade Statistics**, Published by Trade Promotion Center and Custom Office of Nepal.

★ Field Survey (Local farmers)

Market price of large cardamom has on the whole been rising but significant fluctuations did take place. The continuous increase of market price was broken down during 1971/72, when it decreased by 30 percent compared to that in 1970/71. It goes on increasing until 1975/76 and then with an exception of 1976/77 there is a steady increase in its price. If average figure is to be taken into account, within sixteen years market price increased by more than 95 percent per annum. Table 7 shows that fluctuations in the market price is evident. Some of its causes are as follows.

Nepal has no factories that need large cardamom either as a flavouring agent or as raw material. That is why producers have to depend on foreign dealers (specially Marwaris). Market price then fluctuates on the caprices of the exporters, it is obvious.

Nepalese market for large cardamom has been linked with Indian market. The price situation of Indian market (specially of Calcutta) directly effect the price of Nepalese large cardamom. The effect is reflected in the fact that if the market price in India increases, the same happens to the Nepalese market.

Market price fluctuates according to the demand in oversea countries. If the Oversea countries becomes high for cardamom many middlemen seem to be interested in large cardamom export. Higher price in the international market, therefore, means a higher price for the farmers though the benefit they get, may not be proportional.

Nepal does not have a well organized large cardamom market. The farmers must sell their produce to the middlemen. The monopoly of the middlemen plays a vital role in determining the domestic price for large cardamom. In many cases farmers are bound to a particular middlemen long before they go to the market with their produce. Dadani- a system of paying price (but low) long before the produce is ready for market - or other facilities provided by a particular middlemen can bind the farmers to sell their produce to him. As a result the monopoly in price is obvious.

Seasonal variation in the market price is also evident. Price is usually high in the drier season because the damage to the crops (fungitic appearance to the large cardamom) is minimal. In general "prices continue to increase during following months, reaching the maximum around March-April"⁵ Although no differential records are available most of the farmers informed the author during field survey that prices of large cardamom fluctuates within hours in the season. Price in the Indian market (specially in Calcutta) and middlemen's monopoly are so far thought to be the causes behind it. This sort of instability in market price has seriously effected the local farmers.

RELATIONSHIP BETWEEN PRICE AND PRODUCTION:

With the increase in market price farmers are motivated to produce more. Despite the fact that time series information was limited, correlation co-efficient was computed to see the relationship between price and production. The 'r' value computed was 0.9. This reflects a significant relationship between market price and large cardamom production.

Economically speaking the increase in production is motivated by an increase in market price. This is more true because of the negligible domestic consumption. Unless market price is not good enough there is hardly any incentive to produce more. "It is natural that when the farmers feel that one crop brings more return than the other, they have the incentive to substitute one for the other and to divert all resources to the

5, L. C. Green, Report on a visit to Nepal (London: Tropical Product Institute, Ministry of Overseas Development, 1978), P. 44.

production of the first crop. This is true for all the farmers and all crops."6 This statement may not be true in most of the food grain production when the farmers have to meet their domestic demand for consumption. This sort of theoretically sound situation is not directly applicable to large cardamom at least at present because the crop in terms of land use hardly competes with other crops. This indicates the increase in market price has led to the increase of annual large cardamom production.

CONCLUSION.

Large cardamom as a cash crop play an important role in the economy of the hill people of eastern Nepal. The cardamom farmers have devoted about 28 percent of their cultivated land. Most of the areas under large cardamom were economically unproductive previously. As it became one of the important means of cash earning, marginal lands even cultivated lands with low economic return gradually turned over to large cardamom. Because of the extensive nature of farm activities its production and return are not satisfactory. The effectiveness of production depends on the natural factors (specially climate). Due to these factors, fluctuations in production has been a common phenomena though production has been increasing. Most of the farm size are small (below half an hectare) probably because of small holding of land in which farmers are compelled to produce various subsistence crops. Productivity appears to decrease with an increase in the farm size mostly because of lack of economic competition in land use. Price has played the most important role in the flow of large cardamom within the internal market centers.

Market price of large cardamom has been increasing with significant fluctuation. Increase and decrease in the market price is the result of absence of factories that need large cardamom as raw material in Nepal, price fluctuation in the Indian market, demand in Oversea countries and monopoly of the middlemen. Though farmers are deprived of actual return increase in production is motivated by an increase in market price. To sum up the whole cardamom production is uncertain. They are deprived of the real value (return) though they produce more. Establishment of well organized market to provide real return to the farmers and to promote the quality and quantity of large cardamom by giving incentive to the farmers seems to be of immediate necessity.

6. Surendra Pd. Sinha, *Indian Agriculture: its fluctuating fortune* (Allahabad: Kitab Mahal, 1965) p. 129.