CHAPTER II

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REVIEW OF LITERATURE

The chapter attempts to review the important studies on cardamom economy. There are a number of studies, which are focusing on different aspects of the cardamom plantations and the impact of trade reforms on plantation sector. This chapter also gave a brief description of the role of the Spices Board in the cardamom economy.

The chapter is divided under two headings viz.(a) empirical framework (b) theoretical framework , for reviewing the literature related to the study.

(A) EMPIRICAL FRAMEWORK:

These studies are classified under two broad headings viz. (1) international studies, (2) national studies and Kerala studies. Before going in to these broad levels, let us have a brief view of the history of cardamom cultivation and the government policies with regard to the use of land assigned for cardamom cultivation.

The History of Cardamom Plantation in India and the various government policies related to the cardamom economy.

The cultivation of cardamom on plantation basis began with the initiatives of the European, John Joseph Murphy towards the end of the 1800’s. The accounts of the then British official, Munro records about the cardamom cultivation in the Cardamom Hill Reserve (CHR) region coming under on the High Ranges of Kerala especially the present Udumbanchola and Deviculam talukas. The political subordinate of the Travancore princely state to the politics of state reorientation on the basis of the languages are some among the various political reasons suggested as causative for the changed economic relations of the landscape leading to the various phases of
cardamom cultivation in the place. During 1940’s food shortages occurred throughout Travancore and as a result, the government opened forest lands for food cultivation. Food shortages and famines in the early 1940 are led to regular demands for the opening of the large forest areas for food cultivation and in response, the government released the land under the Kuttakapattam rules. The Grow More Food Scheme (GMFS); which was initiated to bring large tracts of land under food crops later turned out be the plantation spaces for cardamom cultivation. Early settlers were drawn by the opportunity to develop cardamom and tea plantations; the majority of the migrants were small cultivators, who settled, planted paddy, tapioca, rubber and spice crops and rich people were probably attracted by the availability of land areas suitable for plantations. During the 1970s and early 1980s, most of the farmers were at the verge of abandoning the cultivation of cardamom. The drought of 1982 had added further to the misery. By the mid of the 1980s, the invention of a high yielding variety of cardamom and higher prices in the international market paved the way for a new change in the cardamom cultivation.

The following were some of the important rules and regulations from the part of the government regarding the ownership and the use of land allotted for cardamom cultivation. From a wild growth to a commercial product made the journey of the cardamom to the status of ‘queen of spices’. Attracted by the earning from this crop, large cultivation and conversion of forestland in the cardamom hills resulted in lost of ecological imbalances and deforestation in the region. Therefore, from the British rule onwards, there existed strict regulations on the use and ownership of land. There excited a state monopoly of trade in all commercial crops including cardamom. Until 1820’s, government used to collect cardamom for merchandize purpose from wild
growth as well as from ryots’ plantation. In 1823, government created a special cardamom department. Alleppey was the center for sorting grading and for marketing. Government used tribal labour for collecting and curing wild cardamom. However, gradually by understanding the prospectus of cardamom, government appointed various guards in different places as guardians to prevent the smuggling of the crop.

The important source of revenue to the government in those days was from land and agricultural revenue. To attract more people in to commercial cultivation of the crop, government introduced many liberal rules and regulations like special grants of land for settlement purpose. A plantation-based system of cultivation was initiated mainly by the cultivators from Madurai district of the Madras Presidency besides Europeans and the above two groups owned most of the area under this crop. During those period ryots were given a production price at the rate of 8 rupees 6 annas and 9 paise per thulams but in the year 1870, ryots claim was calculated as share of the average rate of auction price at Alleppey. The ryots were given an advance if needed for weeding and harvesting preparations at the beginning of each season and they were entitled to a share of the market value of their produce less their advance.

The basic nature of cardamom as a commercial crop is the same in the all the period, whether it is under British rule or post British or under pre-liberalized period or post-liberalized period.ie. cardamom is very sensitive to weather condition and the price quoted is very much related to the export demand., and there is wide fluctuations in the total output of cardamom.

This resulted in uncertainty of the returns; lead the government to think about changing the state policy of monopoly trade in to that private enterprise. These private traders purchased cardamom from the growers. Majority of the trader were from
Madurai district and now they acted as oligopolist in cardamom trade. So naturally, marketing center shifted from Alleppey to Bodinaikanur in Madurai District, which later assumed the status of ‘cardamom city’. In a move to promote the cardamom trade, lot of liberal policies were initiated by the government like establishment of a uniform rate of tax, issue of ‘patta’, assigning land to the cultivators on payment of ‘tharavila’ etc. As a result of all the above movements, 13,693 acres of land were under assessment by 1904-05 and number of pattas issued increased to 1515 by 1908-09. This policy of giving assignment continued under the revised rules of 1935, 1937, 1939 and 1942. But in those days there were no ceiling on the extent of a single holding. However, in 1940, it was directed for the first time that single individual may be given land only up to 60 acres.

Nevertheless, one should remember that, even though there occurred a massive expansion of land under cardamom cultivation, the authorities also given due care to the preservation of forest and thereby maintaining the so-called concept of sustainable development of the environment. The beginning of the 20th century showed an intense migration to the High Range areas of Travancore both cultivators and workers and it was its upswing during 1921 to 1930, when the percentage increase of population growth was highest in the region. In order to mitigate the problem of mounting population pressure and to maintain the ecological balance of the land, deliberate policy initiatives were taken by the then government. Those are briefly examined below.

In 1942, the government prohibited all registries of government land and instead allowed lease of land for periods ranging from three to seven years. In 1944, government announced Kuthakappattam lease rules, where the lease period was
raised to 20 years and individual ceiling was reaffirmed as 60 acres. Because of the increased demand for land, in 1959, Government fixed a 25-acre limit on maximum extent of land an individual could take. In 1961, government increased the lease period from 7 years to 20 years. Policies were also introduced for the preservation of tree growth and forest. The revenue and forest department were given the responsibility for strict implementation of the rules. The Revenue department was given control over the land assigned and leased out for cultivation. In addition, the Forest Department retained control over the trees on the land so assigned and leased out and over the land and trees in the rest of the area. Thus, Revenue Department could able to collect the land revenue and other taxes from the planters and The Forest department could able to prevent the encroachment of land.

By following a liberal policy towards the cultivation of cardamom resulted in the expansion of area under the crop. By 1930’s the area under cultivation increased to 56,000 hectares from 15,000 hectares in 1900’s and productivity increased from 20Kg per Hectare to 35 Kg per Hectare. During 1950’s, programmes like High Range Reclamation scheme for providing waste lands for cultivation and allotment of land under Kuthakappattam lease rules attracted people to this region. A large number of encroachments were done during those periods and 1956, almost the entire eastern portion of Cardamom Hills Reserve came cultivation of some kinds. Therefore, by 1955-56, about 35,000 hectares of land was set apart to the settlers. In 1958-60, about 1, 50,000 hectares of land was again encroached by the people .This process of encroachment continued during 1960’s and 70’s also. The main reason for this type massive encroachment by the people was due to the inefficient government machinery and the rules they formulated for the years. For example, in 1950, policy change
issued by the government whereby the forest department had then lost the control over all the forest land and only trees under their prevalence. And with the exception of 1957, till 1970, the same was the rule. In 1970, by an amendment, the government gave the control over the land leased out to the Forest department.

I. Cardamom Studies at International Level

Bhim (1982) conducted a study on land use, production, and marketing of large cardamom in Ilam district of Nepal. He analyzed the effect of farm size on production and their mutual relationship, trends of market price and its effects on production. He concluded by suggesting that the establishment of a well-organized market is essential to provide real return to the farmer and to promote the quality and quantity of large cardamom. Therefore, giving proper incentives and institutional arrangement to the farmers seems to be of immediate necessity.

Chomchialow (1996) made a study on the production of spices in Asia. The paper discusses the constraints faced by Asian spice growers. These constraints were divided under four headings (a) biotic (b) abiotic and (c) socio-economic (d) technological. In his paper, he mentions about Kerala also. Although, Kerala is termed as ‘the spice bowl of the world’, the problems faced by the spice industry are same everywhere.

Sri Lanka Spice Cluster (2002) published their report ‘A competitive strategy for Sri Lankan spice industry argued to create value for local and global customers of Sri Lankan spices and prosperity for industry participants. The report viewed that even though cardamom accounted for 1 percent or less, the spice export of the country to U.S. contributes the majority. The report continued, if Sri Lanka produces and sells more high quality spices to developed market, it will be able to raise export revenue
from spices. According to the report, the competitiveness of Sri Lanka spice industry is hindered by marketing and procurement problems and yet another drawback is the selling of spices directly to importers and brokers rather than true customers.

Teja et al. (2006) investigates the possibilities for sustainable cultivation of cardamom in the East Usambaras, Tanzania. The study showed that growing practices of cardamom cultivation radically changes the composition of the forest and thus threatening the endemic spices within the forest. At the same time it is a valuable source of income for the poor farmers. The study also claimed that by implementing agro forestry system, the harmful impact of cardamom cultivation in forest might be dramatically reduced.

Lwasa and Bwone (2007) carried out a study on economic potential of cardamom as a source of income for poor farmers of Uganda. They hold the view that the dearth of knowledge regarding the economic potential of cardamom leads to the irrational allocation of scarce resources by farmers. To them yield can be attained through improved advisory services to the farmers and better prices can be solicited with improved market information and collective marketing. The study revealed that to mitigate the problem of the high establishment cost the government should motivate the farmers by providing long-term credit periods.

Dipesh (2011) attempted to explore the current status of large cardamom production and major climatic factors which induced hazards that affect adversely the cardamom production in Eastern hill of Nepal. He concluded his report by stating the urgency to develop and implement a specific climate resilience agriculture development strategy and adaptation measures for large cardamom. He also stressed
the need for the combined effort of both government and farmer community to take active attention in this regard.

South East Asia Dept of ADB (2011) examined the cardamom economy of Lao. In Lao, it is often grown in forest gardens and wild cardamom is mostly regarded as village owned and cultivation regarded as family owned. But the project showed that local cardamom production is decreasing due to low yields on the one hand and the expansion of coffee and rubber plantation on the other. Again the yield is very low as only 20 kg/ha and its prices is around 3 USD, when compared to green cardamom in which the price is around 7 USD. The project highlighted the fact that cardamom cultivation in Laos directly helps in the reduction of carbon emission. It is the most important source of income and second most important agricultural export after coffee. The report concludes with remarks by giving proper direction and enough funds, they can increase their earnings on the one hand and protect the environment on the other.

Chalathen et al. (2012) in their study examines the potential of cardamom for poverty alleviation under sustainable rural development conditions of increased resource scarcity in the uplands of Northern Laos. They identified supply chain of cardamom and examined the socio-economic opportunities for all actors in the cardamom supply chain. Improved varieties provide sufficient profit to the large farmers. But the study found that land poor and landless collectors of wild cardamom are facing increasing difficulties due to overharvesting and low prices offered by middlemen, leading to the rapid conversation of remaining forest into monoculture plantation. The study stressed the importance of policy implication for protecting
natural forest not only benefit bio-diversity, but also enhance the livelihood of the poorest groups in the uplands of Northern Laos.

Le Anh (2010) made a case study of the potential of cardamom for poverty reduction and sustainable forest protection in North Eastern regions of Vietnam. Though Cardamom is the most valuable non-timber forest product and known as the ‘gold of the forest’, the study found several technical bottlenecks in the debt of the sector. The most important among them were low productivity and yield of cardamom. The yield of cardamom remained very low as 50 kg (dried)/ha/ year. Other problems found in the study were the poor quality of dried cardamom, lack of quality standards for the product, and lack of incentive policies for cardamom development. Le Anh concludes that cardamom production by close limits to the protection and development of forest resources. Hence the identification of intervention for development of the value chain is more complex than for other cash crops value chain. So in order to be successive the strong support from all participants in the value chain is needed.

Spencer (2014) carried out a study of cardamom in Guatemala. He opined that even though Guatemala is the largest exporter and producer of cardamom, the commodity faces threats from wildly fluctuating international prices, pest infestation and sloppy growing practices, posing tremendous challenges for sustainability. In order to strengthen the productive chain of cardamom CARDEGUA (Cardamom Producers Association of Guatemala) was formed in 1998 and recently on August 2013 at the “National Cardamom Congress,” many political and strategic actions were suggested to improve the lot of cardamom.
II. Cardamom Studies at National and Kerala Level

The protracted crisis entangling the plantation sector in Kerala has attracted the attention of both the masses and the government especially the recent strike for hike in wages by the plantation workers in the state in 2015. Kerala, which is sometimes called as the ‘the plantation enclave’ of India, faces the severity of situations like for most of the times. Since, small cardamom, which is indigenous to the Western Ghats, and the total production of it mainly depends on Kerala’s supply condition, she has got a monopoly among the Indian states. So naturally, it is not easy to make a division of cardamom studies at national and state level. The researcher therefore clubs both studies under the same roof. Studies covered many areas from the history, trends, production, marketing, and to trade. Let us have brief view of the existing literature on cardamom economy and identify the gap excited in those studies.

Damodaran (2002) has shown that the crisis in commercial crops cultivation could induce farmers to adopt survival strategies like neglect of long term land improvement measures. He argued that this led to the degradation of land quality through increased soil erosion and ultimately neglecting the so called bio diversity. He took the case of coffee planters in Karnataka, who adopted the intensive cultivation, which adversely affected the environment and has shown that the withdrawal of Coffee Board from marketing had the effect of making the domestic prices of coffee more volatile. But as far as the cardamom, its price is volatile which mainly depends on the production condition in the region.¹

¹ See Annexure related to Annual average price of cardamom (1970-71 to 2013-14)
Harilal and Joseph (2003) have attempted to analyze the stagnation since the mid-seventies and the revival since the mid-eighties in an open economy perspective. It has been argued that the stagnation since the mid-seventies has to be seen in the context of massive remittances to the regional economy resulting from the migration of labour to the Middle East. The revival of commodity producing sectors since the mid-eighties has been attributed to the slowdown of remittances, devaluation of the rupee and the structural adaptation of the regional economy. The researchers remarked the situation as a ‘dutch disease environment’.\textsuperscript{2} In their study they stated an unprecedented growth in the production of all commercial crops during the second period (1987-88 to 1995-96). But when we go through the data regarding the cardamom economy, we could notice that this sector went through a difficult stage in those period also i.e. even before the pre reform period.

Madan M.S. (2002) claimed that a vicious circle of ‘low price – less production’ and high price- more production came into operation in the cardamom economy. Guatemala encroached the traditional Indian market of cardamom by supplying at cheap price. But cardamom being a perennial crop need at least two to three years for harvesting and secondly as far the price of any commodity traded in the international market, we can’t guarantee its stability for a long period. So the feasibility of the ‘circle’ is to be examined.

According to Ravindran and Rajeev (2002), price fluctuations, escalating cost of production and increasing labour shortages are the emerging constraints that would

\textsuperscript{2} \textbf{Dutch disease} is the apparent causal relationship between the increase in the economic development of a specific sector and a decline in other sectors. The term was coined in 1977 by ‘The Economist’ to describe the decline of the manufacturing sector in the Netherlands after the discovery of the large Groningen natural gas field in 1959.
influence cardamom economy in future. Like any other agricultural commodity, climatic condition is the major factor determining the total amount of cardamom output. As far as Kerala is concerned, the escalating tendency of the cost of labour is threatening, more than that of shortage of labour.

Acharya (2004) opined that agricultural marketing system can be analysed by looking at the farmers marketing practices, marketing channels and the structure of the markets. He suggested that adequate facilities of cleaning, grading, and packaging at farm level are necessary to avoid all types of losses and to ensure both domestic and international market. As far as cardamom is concerned, all the trade in cardamom could be done through the e-auction only and all the participants who are registered with the Spices Board have the benefit of engaging in trade.

Bhalla (2004) comments that globalization offers both opportunities and challenges. The opportunities consist of availing of the benefits of trade and growth. The challenges lie in enabling the sharing of these benefits to the entire population.

Ravindran et al. (2002) claimed that variety is the key factor, which enables to realize higher productivity of all crops, and the same is true in the case of cardamom too. To them, if India wants to retain the position of largest producer and exporter of spices, she has to step up productivity, quality, and technology suitable for different agro climatic regions.

Narayanan (2004) observed in his study that the price of cardamom increased at annual compound rate of 6.4 per cent from 1970-71 to 2001-02 in India and the rate of increases were highest in Kerala. Even though India was the largest producer and exporter of cardamom, its exports declined sharply and domestic consumption is rising. He found that using of high yielding plant varieties lead to increase in
productivity, good quality will earn good price, and use of irrigation facilities mainly resulted in increase in production. He observed that during the period of high growth of cardamom prices, the loan disbursed grew at a high rate and the rate of repayment of the loan too registered a high growth. He concluded his study by stating that increasing cardamom prices, productivity, and profitability of cultivation appears to have positively influenced loan disbursement and repayment.

Jaleel et al. (2006) carried out a study about the comparative quality appraisal of exported cardamom of India, Sri Lanka, and Guatemala. They found that Indian cardamom as superior in all respects of the physical quality parameters such as weight, seed-husk ratio, bulk density, and length.

Spices board (2009) made a detailed description of cultivation practices for cardamom. It is explained here that the cardamom of commerce is the dried fruit of the plant ‘*Elettaria Cardamom Maton*’ and the plant is propagated through seeds, suckers and tissue culture and the economic yield starts from the third year of planting and it continues up to 8-12 years for high yielding varieties. The book noted two varieties of cardamom plants and they are ‘*Elettaria Cardamom Maton*, Variety Major and Variety Minor like Malabar, Mysore and Vazhukka. With regard to climate, the evergreen forest of Western Ghats is the best and an altitude ranging between 600 and 1200 meters above MSL and needs a well-distributed rainfall of 1500-2500 mm and a mean temperature of 15° to 25° C would be ideal. In the book, it is explained different types of diseases like *Mosaic diseases, Nilgiri necrosis, Azhukal* and how it can be managed and cured. Post harvest operations such as curing, cleaning, grading, packing, and storage etc were explained deeply.
Nagoor (2010) in his study while analysing the present status of trade in major plantation commodities, viewed that domestic prices of Indian cardamom are much higher than the Indian import value of cardamom and area under cultivation has remained stagnant. Within the period of study (2002-06), he noticed that with the decline in domestic consumption, both production and import of cardamom has declined. Moreover, during this period, large cardamom also faced with stagnant area under cultivation and decline in yield and the production. He observed that among the major cardamom exporting countries of the world, the lowest export price of cardamom credited to Indonesia. As far as India is concerned, the export unit value of cardamom has been increasing continuously since 1996. Nagoor stated that most of the Indian cardamom import demand had been met by Nepal, even though not a major producer, is a major concern for the Indian growers for long-time.

Anjaly et al. (2010) attempted to analyze the impact of price forecast of cardamom made by the Agricultural Market Intelligence Center of Kerala Agricultural University (KAU). The forecast made by the Centre in 2009, urged that cardamom farmers to retain the crop for better price realization and from the effect of that forecast, there was unprecedented price volatility in both Kerala and Tamilnadu markets. The study showed the benefit of information is founds to be at a per unit increment benefit of Rs. 10,000 - Rs. 13,814/ha

As per the report of the planning commission working group (2011) the cumulative annual growth rate of cardamom (small) in respect of area, production, exports and imports has been negative and in respect of productivity and domestic consumption it has been positive. On the other hand, the cumulative annual growth rate of cardamom (large) in respect of production, productivity, exports, imports and
consumption has been negative and in respect of area it has been positive. The XII\textsuperscript{th} plan scheme is visualized with the objective of enhancing spice exports from the country by making roads into building processing capacities expansion of markets, increasing production and productivity of cardamom (small and large) modernizing the spice cultivation and post-harvest operation, promoting organic cultivation and post-harvest operation promoting organic cultivation, addressing food safety concerns of the importing countries market and productivity driven research skill development and the development of transfer of technology.

Anoopkumar (2012) in his study made an attempt to explore the dynamics of domestic price instability of five major plantation crops viz. Coffee, Tea, Natural Rubber, Black Pepper and Small cardamom by looking its two dimensions - inter-year and intra-year. He concluded that the crops for which domestic market is highly integrated with the global market (Natural Rubber, Black Pepper and Coffee) are found to be shaving greater price instability in the free trade as compared to closed regime. The crops that are highly domestic market oriented (Small cardamom and Tea) are showing a decline in price instability in free trade than closed regime. He concluded in his study that price instability has increased in the open trade regime for many of the crops. So he argued for a strong government intervention for farmer’s income stabilization.

While analyzing the production of agricultural commodities, Vaidyanathan (2010), argues that that non-price factors are far more important in determining the rate and pattern of production. To him, production is a function of two inter-related set of factors. (a) climatic condition and technology on the one hand and (b) social, economic and institutional conditions on the other hand. He also pointed out that,
non-price factors are far more important in determining the rate and pattern of agricultural production.

Anitha et al. (2012) argues that the land right is a major issue which primarily determines to receive institutional support to the farmer. Policy makers make one policy for the entire community, but in agricultural sector due to geographical and climatic condition, one policy fit all approach may not work. Therefore, in their findings, they stressed the need for a separate policy should be implemented to uplift the vulnerable groups in the plantation sector.

Commodity Boards and other development authorities (2013-14) in their annual report indicate that although there were incidences of disease due to heavy rain fall over cardamom (small) growing act a 6per cent increases in production of cardamom during 2013-14 over the previous period and same is the trend of large cardamom also. The report highlights the importance of the new scheme titled Export oriented production, export development and promotion of spices with five important components viz. (a) export oriented production (b) export development and promotion (c) export oriented research (d) quality improvement and human resource development.

Sivanandan et al. (1988) in their paper attempted to investigate the case of human intervention with the evergreen forests in the High ranges of Kerala crop, the cardamom Hills Reserve. The study noted that the rate of deforestation has been at higher rate in the cardamom Hills in Kerala than in other location in the state. They viewed that the large-scale conversion of forest land in the cardamom Hills has not only affected the micro-environment but also negatively affecting the health of cardamom, which is the highest foreign exchange earns among the spices. The paper
also gave an account of like course of development of cardamom cultivation in Kerala from the state of wild forest producer to that of a commercial crop cultivated under private tenure. They argued that the deforestation and degradation of forest occurred largely due to the liberal policy of the government towards the acquisition and regularization of the forest area, which was highly influenced by private interest.

Brijith (2005) in her study pointed out the extent of co-movement of primary commodity price in the domestic and world market and the effect of transmission of world prices to the domestic market. Kerala is historically known for the cultivation of export oriented tropical crops and its agriculture is characterized by the domination of a number of major plantation crops. The state accounts for 45 per cent of the plantation crops and 20 per cent of the population depend on this for their livelihood. She observed that most of the state’s agricultural products depend on domestic and international market and so commodity price trends lead to poverty through their impact on employment and farmer’s income. From the study she pointed out that even though cardamom has historically been an export oriented crop, since 1980’s it has become more domestic market oriented. During the pre-reform period, there existed high tariff barriers, the cardamom market have been not integrated with the world market. Nevertheless, with the lowering of trade barriers in the post-reform period, domestic market becomes more integrated with the world market.

In the study report of the Kerala State Planning Board (2011) with the study period from 1990-91 to 2009-10, it is noted that at the end of eighteen onwards there are of food crops were sledded to plantation and cash crops and resold in the decline in the production of major traditional food crops and the percentage of contribution of agriculture to SDP (State Domestic Product) began to decline. The study made a time-
series analysis of the trend in area, production, and productivity of major agricultural and plantation crops. As far as cardamom is concerned, the study pointed out that the area under cardamom cultivation in Kerala is more or less the same and as far as productivity is concerned, there is a positive trend with light fluctuations in the same years.

Joseph (2011) in his study attempted to undertake a preliminary evaluation of research undertaken by ICRI. The study also examined the initiatives undertaken by ICRI towards transferring the technological and innovative practices developed by the scientist to the growers. The study also highlights the capability of the cardamom growers that some of them are highly innovative by themselves. He also identified same short comings of R & D like unawareness among the growers regarding spice clinic. Majority does not reap its benefit. The prevalence of consultants of big companies in the area under estimate the effort of ICRI to transfer its advanced technology and in effect, the farmers put more fertilizers and chemicals on plantations to increase productivity and thus destruct the environment. Therefore, he concluded his study by stating that the overall development with sustainable development of the region should be integrated with cardamom research.

Shahul (2014) in his research paper made an analysis of the key players in the supply chain of cardamom. He identified the flow of supply chain of commodity moves from farmers to local traders then to wholesale market and finally to the exporter. From his study, he observed that marginal and small farmers are not conscious about to sell their product through e-auction. They do not have enough access to market information system. In his case study, he could find that farmer/growers share the largest portion of margin compared to other participants in
the supply chain. Since it is a labour intensive cultivation, they have to spend more on labour and profit is low, at the same time in the open market consumers have to pay more on to purchase cardamom.

Joseph (2009) attempted to locate the spaces of exclusion in the context of innovations in the marketing of plantation crops in India buy taking the case of cardamom auction system. The paper stressed on the importance of inclusive growth and development and the need of innovative practices that lead to this path. In this study, Joseph took the case of e-auction, as an innovative method in marketing and he concluded that the exclusion of those, without title deeds from the auction centre also to be considered as a case of instrumental exclusion. In fact, e-auction has been introduced by spices board to address the various spaces of exclusion prevailed in the market, the paper suggests that the issue of social exclusion cannot be addressed simply by technological innovation, in the absence of appropriate policies of government which stressed the importance of an inclusive growth and development of the society.

Anu (2014) investigated the role that cardamom as a staple of the region has played in the development of Kattappana, Kerala. Since cardamom is subject to the price fluctuations at the international level, several policy initiatives should be undertaken by the government to keep the sustainability of the present development. She suggested several measures like diversification of export base of cardamom, improving the labour market condition adoption of organic cultivation to avoid environmental and health hazards, adoption of scientific method by farmer’s invention and used better yielding varieties to increase productivity etc to maintain sustainability of economic growth in the region.
(B) THEORITICAL FRAMEWORK

The next section deals with the theoretical background under which the topic is studied. There are mainly three theories which helped to form the basis for the study.

M. Kalecki, in his Theory of Economic Dynamics” made a proposition that price determination arise out different conditions of supply.

Nicholas Kaldor in his paper on the subject, “A Classificatory Note on the Determinateness of Equilibrium”, 1934, framed the Cob Web Model, which explained the relationship between exogenous variable and the supply of commodities in the agricultural market. This model is a theoretical explanation of the cyclical nature of prices and quantities through time. Now a brief description of the each theory and its relevance in the study of cardamom economy is examined in the coming pages.

David Ricardo in his “Theory of Comparative Advantage” made the trade arise because of the differences in comparative advantage.

1. Theory of Economic Dynamics by M. Kalecki

M. Kalecki, in his “Theory of Economic Dynamics”(1954),classified short term price changes in to two broad groups (a)those determines by changes in cost (b) those determined by changes in demand. He argued that changes in the prices of finished goods are cost determined, while changes in the prices of primary products are demand determined. To him, these two types of price determination arise out of different conditions of supply. It implies that it is because of the existing reserves of productive capacity, the production of finished goods is elastic, which keeps prices to remain more or less stable. And price changes mainly occurred due to changes in cost.
However, the situation is different with respect to agricultural goods. The increase in the supply of the same requires a relatively a considerable time. With supply relatively inelastic, an increase in demand causes the price to go upward. The fuel for further increase may be enhanced by the so-called speculation.

So according to Kalecki, conditions of supply play a major role in determining price of agricultural commodities i.e. the nature of elasticity. From this theoretical background, the researcher analyzed the production and price trends of cardamom. As a perennial crop, cardamom requires at least two to three years production gap and yielding extent up to eight to twelve years. The grower could not increase or decrease its production due to any shift in price or non-price factors. Under these circumstances, researcher tried to analyze the research problem whether the so-called reforms could have had an impact upon cardamom economy. If price of agricultural product is demand determined, then, what would have happened to the Indian cardamom, which is of superior quality in the world?

2. Cob Web Model by Nicholas Kaldor

The cobweb model or cobweb theory is an economic model that explains why prices might be subject to periodic fluctuations in certain types of markets. It describes cyclical supply and demand in a market where the amount produced must be chosen before prices are observed. Expectations of producers about prices are assumed to be based on observations of previous prices and Nicholas Kaldor analyzed this phenomena and developed a model in 1934 and coined the term "cobweb theorem".

The cobweb model is based on a time lag between supply and demand decisions. Since there is a lag between planting and harvesting in agricultural
marketing, it becomes an apt example of explaining the model. For instance, in the case of cardamom cultivation, that as a result of unexpectedly bad weather, the total production is so meager to meet the both domestic and foreign demand. This shortage, equivalent to a leftward shift in the market's supply curve, results in high prices. If farmers expect these high price conditions to continue, then in the following years, they will raise their production of cardamom relative to other crops. Therefore, when they go to market the supply will be high, resulting in low prices in the coming years. If they then expect low prices to continue, they will decrease their production for the next year, resulting in high prices again. This process is illustrated with the help of the following diagrams.

![Fig 2.1. Convergent Cobweb Model](image)

Each new outcome is successively closer to the intersection of supply and demand. The equilibrium price is at the intersection of the supply and demand curves. A poor harvest in period 1 means supply falls to $Q_1$, so that prices rise to $P_1$. If producers plan their period 2 productions under the expectation that this high price will continue, then the period 2 supply will be higher, at $Q_2$. Prices therefore fall to $P_2$. 

when they try to sell all their output. As this process repeats itself, oscillating between periods of low supply with high prices and then high supply with low prices, the price and quantity trace out a spiral. If the supply curve is steeper than the demand curve, then the fluctuations decrease in magnitude with each cycle, so a plot of the prices and quantities over time would look like an inward spiral, as shown in the first diagram. This is called the convergent case.

Each new outcome is successively further from the intersection of supply and demand. If the slope of the supply curve is less than the absolute value of the slope of the demand curve, then the fluctuations increase in magnitude with each cycle, so that prices and quantities spiral outwards. This is called the divergent case.
The cob web model can also explain in elasticity terms. The elasticity of supply is expressed by using the equation \( \frac{dQ^s}{dP^s} / Q^s \), and the elasticity of demand is defined as \( \frac{dQ^d}{dP^d} / Q^d \).

Where ‘Q’ is the quantity
‘S’ supply
‘D’ demand
‘P’ the price and
‘d’ stands for change. If we evaluate these two elasticities at the equilibrium point, that is \( P^s = P^d = P > 0 \) and \( Q^s = Q^d = Q > 0 \), then we see that the convergent case requires \( \frac{dQ^s}{dP^s} / P < \left| \frac{dQ^d}{dP^d} / P \right| \)

whereas the divergent case requires \( \frac{dQ^s}{dP^s} / P > \left| \frac{dQ^d}{dP^d} / P \right| \)

In words, the convergent case occurs when the demand curve is more elastic than the supply curve, at the equilibrium point. The divergent case occurs when the supply curve is more elastic than the demand curve, at the equilibrium point.

A cob –web pattern of relation between production and price could be traced from the cardamom economy. Since supply is more or less inelastic, the quantity available determines the price of a particular year under “ceteris paribus”. In addition, like any other commodity if supply is less, naturally, its price shows a tendency to rise. Cardamom is a perennial crop, having production lag, could not increases the
supply all on a sudden. It can use only its previous years stock but to a limited extent. The growers can sometimes increase the intensity of harvesting to a maximum of one to two rounds of picking expecting that the price will continue at the same rate. Again, like any other commodity, when supply increases, the price shows a downward tendency. So next time expecting the low price to continue, they will not produce the maximum. Therefore, in this case, we could see a cob web pattern of relation between production and price of cardamom.

3. Theory of Comparative Advantage by David Ricardo

The theory of comparative cost advantage was propounded by David Ricardo in the year 1817 in his book “On the Principles of Political Economy and Taxation”. It is based on the differences in production costs of similar commodities in different countries. Production costs differ in countries because of geographical division of labour and specialization in production. Due to differences in climate, natural resources, geographical situation and efficiency of labour, a country can produce one commodity at a lower cost than the other. In this way, each country specializes in the production of that commodity in which its comparative cost of production is the least. Therefore, when a country enters into trade with some other country, it will export those commodities in which its comparative production costs are less, and will import those commodities in which its comparative production costs are high.
This is the basis of international trade, according to Ricardo. It follows that each country will specialize in the production of those commodities in which it has greater comparative advantage or least comparative disadvantage. Thus a country will export those commodities in which its comparative advantage is the greatest, and import those commodities in which it is comparative.

Ricardo made a simple explanation of his theory through his classic example of taking two countries, Portugal and England, which produce two goods of identical quality. In Portugal, the a priori more efficient country, it is possible to produce wine and cloth with less labor than it would take to produce the same quantities in England. However, the relative costs of producing those two goods differ between the countries.

<table>
<thead>
<tr>
<th>Country</th>
<th>Cloth</th>
<th>Wine</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>100</td>
<td>120</td>
</tr>
<tr>
<td>Portugal</td>
<td>90</td>
<td>80</td>
</tr>
</tbody>
</table>

In the above illustration, England could commit 100 hours of labour to produce one unit of cloth, or produce $6/5$ units of wine. Meanwhile, in comparison, Portugal could commit 90 hours of labor to produce one unit of cloth, or produce $9/8$ units of wine. So, Portugal possesses an absolute advantage in producing cloth due to fewer labor hours, and England has a comparative advantage due to lower opportunity cost.
Under autarchy, England requires 220 hours of work to both produce and consume one unit each of cloth and wine while Portugal requires 170 hours of work to produce and consume the same quantities. England is more efficient at producing cloth than wine, and Portugal is more efficient at producing wine than cloth. So, if each country specializes in the good for which it has a comparative advantage, then the global production of both goods increases, for England can spend 220 labor hours to produce 2.2 units of cloth while Portugal can spend 170 hours to produce 2.125 units of wine. Moreover, if both countries specialize in the above manner and England trades a unit of its cloth for 5/6 to 9/8 units of Portugal's wine, then both countries can consume at least a unit each of cloth and wine, with 0 to 0.2 units of cloth and 0 to 0.125 units of wine remaining in each respective country to be consumed or exported. Consequently, both England and Portugal can consume more wine and cloth under free trade and disadvantage is the least.

When we take the case of small cardamom, India has comparative advantage in geographical location as major part of production comes from the Western Ghat of south India. Quality wise, Indian cardamom is superior in the world. India was the largest producer and exporter of the world until Guatemala captures the world market. Guatemala only recent entrant in the field has comparative advantage in labour cost of production. In Guatemala, labour cost is around 45 per cent while it is around 65 per cent as far as India is concerned. Based on that she now earned the first rank as the largest producer and exporter. Again, when we compare all other parameters like the stage of development of the country, quality of the human resources, existence of research institutions in the field, organizations like Spices Board, Guatemala is far below the Indian standard. Unless India has to expose her quality advantage over her
competitor, secure GI’s for her indigenous product in the international trade and should think about using cost reducing technology, India could not withstand in the field.

For the purpose of investigating the problem, the researcher use both primary and secondary data related to all important variables of cardamom economy viz. price, production, area, yield, consumption, export and import both in the pre and post reform period.