

## Spice Marketing in Kerala: The Need for Cooperative Marketing

Sreenath U<sup>1</sup>Madhura Bedarkar<sup>2</sup>

### *Abstract*

The share of India in the global pepper production came down from 56 per cent in 1951 to 12 per cent during 2021. Further the share of Kerala in India's pepper production from 98 percent in 1991 to 43 per cent in 2021. The agriculture in Kerala is characterised by homestead farming, mixed cropping, high wage rate, perennial tree cash crops etc. All these factors have made pepper and spices cultivation unprofitable for the farmers along with unremunerative prices for the produce. In this context, a cooperative marketing society modelled on the lines of milk cooperatives can go a long way in helping the farmers, thereby improving pepper cultivation in the state. Also, there can be linkage with farmers by providing these inputs at a subsidised rate. The cooperatives can go a long way in eliminating small traders in the pepper or spice value chain. A producer cooperative can play a very important role by being the link between producers and exporters.

**Keywords:** *Pepper cultivation, spice cooperative society*

### 1. Introduction

Black pepper is also known as the “King of Spices” or “Black Gold” due to its economic value and widespread use across the world. It is one of the most important spices which connects the kitchens of the world. It is one of the few commodities which find reference in all the sacred texts. Once upon a time, India or more specifically, the state of Kerala was known as a major source of best quality black pepper. But, the current global production of black pepper is dominated by Vietnam with a share of 34 percent as on 2021, followed by Indonesia with 16 percent (IPC, 2021). India with 12 percent takes the fourth slot just below Brazil which contributes 18 percent of the world pepper production.

One can see a progressive decline in India's share in total production since 1951 when it was 56 percent. When it comes to the global area under pepper production, there is a slight increase from 375760 hectares in 1991 to 676265 hectares as of 2021. India's share in the total area under pepper production has almost remained the same at 46 percent during 1991 and 2021 with a slight variation between these time periods, though there was an increase in the absolute area by 25070 hectares. During the same time period, India's share

<sup>1</sup> Assistant Professor, Department of Economics, National Defence Academy, Pune

<sup>2</sup> Associate Professor, Symbiosis Institute of Business Management, Pune,

in the total exports also declined from 11 percent in 1991 to 2 percent during 2015. Simultaneously, other countries like Vietnam, Sri Lanka, China and Madagascar have made significant improvement. Also, the consumption of pepper is influenced by factors such as size or growth of the population, changes in food habits and per capita income. These factors have no doubt increased the demand for pepper globally. This is despite the fact that the Indian pepper is known for its superior aroma, flavour and pungency.

In 1991, the state of Kerala had a monopoly on India's pepper production with a share of 98 percent. But, in 2015 the state only contributed 43 percent of the national production and Karnataka dominated with about 50 percent share. Kerala also witnessed a decline in the area under pepper production from 168.5 hectares in 1991 to 82.1 hectares in 2021. One of most striking features of the agricultural sector in Kerala is that of importance to cash crops like rubber, tea, coffee and cardamom. Therefore, this study tries to understand the marketing issues facing the pepper economy of Kerala which is a very vital crop. In fact, there is no hesitation to state that India would be missing the opportunity to take advantage of the swiftly emerging global pepper market. The Millennium Development Goals (MDG) of the UNDP gives much importance to livelihood as a crucial factor in eradicating poverty and hunger. One can see that woman, deprived social groups, rural population, landless, small and marginal farmers are mainly dependent on pepper for their livelihood (Rajasenani, 2010). It makes this crop further crucial for the social development of the state. This study tries to focus on the marketing issues facing the small pepper growers in the district of Idukki.

### **1.1 Agriculture in Kerala**

The agriculture sector in Kerala has many unique characteristics when compared to other states in India. These include features like homestead farming, mixed cropping, small land holdings, perennial tree cash crops, excessive dependence on hired human labour, high wage rate etc (Jeromi, 2007; Nair 2006 ; Kannan and Pushpangadan, 1988). A combination of all these factors makes the farmers reliant on credit leading to indebtedness. The credit in agriculture is a part of the total investments to be made in agriculture which can be in the form of non-monetised investments such as farmer's seeds, labour, manures etc. or monetized like own-funds or borrowings from both formal and informal sources (Sriram, 2007). In India, the plantation crops account for only 5 percent of the net sown area but contribute about 10 percent of income from agriculture and 13 percent of the agricultural exports (Joseph, 2010). The plantation crops account for more than 32.15 percent of the net cropped area in the state of Kerala.

The perennial crops in Kerala can be classified into two groups. The first

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consist of garden crops such as pepper, coconut, mango and jackfruit which could be cultivated without any investments or special organizational structure. The other group consists of plantation crops like coffee, rubber and tea which involve investments in the form of land and management (Tharakan, 1998; Thomas, 1999). The former contributed to the broad-based commercialization of agriculture by involving small and marginal farmers in the state. In fact, the process of commercialization started in Kerala centuries ago with the advent of cash crop cultivation by way of plantations (Kurien, 1995). Though pepper is not a plantation crop like tea, coffee and cardamom it can be categorised as a commercial crop. Pepper is normally cultivated in Kerala as a mixed crop, mainly with colacasia, ginger, elephant foot yam, coconut and are canut. Most of the crops cultivated in Kerala have experienced a reduction in their share in the GCA. The Table 1.1 shows the percentage of area under the major crops in Kerala to the GCA. The only crop which has escaped this trend seems to be rubber. But, again the period from 2010-11 has seen a reduction in the proportion of area under rubber from 28 per cent to 26 per cent. All the major food crops, mainly paddy and tapioca have also seen considerable reduction in area. Coconut and coconut oil are widely consumed in Kerala, it is not categorized as a food crop due to its widespread use in the industrial sector (Mohandas, 2005). It is estimated that about 80 per cent of Kerala's TCA is dominated by 11 crops, namely paddy, tapioca, coconut, rubber, pepper, coffee, cashew nut, banana, tea, areca nut and cardamom.

**Table 1.1: Percentage Share of Area under Major Crops in Kerala**

	1991-92	1995-96	2000-01	2005-06	2010-11	2015-16	2020-21
<b>Paddy</b>	18	12	11	11	9	10	8
<b>Coconut</b>	28	31	26	25	25	21	30
<b>Tapioca</b>	5	2	2	2	2	2	3
<b>Rubber</b>	13	18	20	22	28	26	21
<b>Cashew</b>	4	4	3	3	2	1	1
<b>Jackfruit</b>	NA	NA	2	2	2	2	2
<b>Tea</b>	1	1	1	3	1	3	1
<b>Pepper</b>	6	8	6	4	3	3	3
<b>Coffee</b>	2	4	4	3	3	3	3
<b>Arecanut</b>	2	4	5	5	4	4	4
<b>Mango</b>	NA	2	2	2	2	2	2
<b>Banana</b>	1	6	1	4	2	2	2
<b>Others</b>		10	16	14	18	20	20

*Source: Computed from various Economic Review, GoK, Various issues*

From Table 1.1, it is very clear that most of the traditional crops in Kerala have displayed a reduction in area or stagnation with the only exception being coconut. Most of them are perennial tree crops which have a tendency to stagnate in terms of area under it.

## 1.2 Instability in Prices

Kerala's agricultural sector is dominated by cash crops and these have very high volatility in prices. The period from 2000 to 2002 saw one of the largest decline in cash crop prices. Mohandas (2005) mentions that in the year 2000, the decline in prices were to the extent of 66 per cent for pepper, 56 per cent for areca nut, 52 per cent for ginger and 40 per cent for rubber. For most of the crops, the decline in prices ranged from 23 to 48 per cent. This crash in prices of crops impacted the farmers adversely by reducing their income by almost half. The Economic Review brought by the Government of Kerala publishes parity index which is calculated by dividing the prices received by the farmers to the prices they paid. A parity index below 100 indicates that agriculture is facing an adverse terms of trade, while more than 100 means favourable trade terms for agriculture. The Table 1.2 shows the parity between prices received by the farmers and prices paid by them. One can see that there has been a consistent decline from 92 in 1991 to 63 in 2015. The years 2001 and 2002 saw the parity index reaching the lowest level to 48 which was mainly due to the commodity farm price crash. The parity index never crossed 100 which implies that agriculture has been facing an adverse terms of trade in Kerala.

**Table 1.2: Prices Paid by and Received by the Farmers in Kerala**

Year	Prices received by farmers	Farm cultivation cost	Domestic expenditure	Prices Paid by farmers	Parity
1991	1315	1910	1078	1435	92
1995	1802	3312	1641	2331	77
1999	2907	5556	2246	3532	82
2003	2454	7056	2615	4295	57
2007	2746	9135	3061	5288	52
2011	5117	14959	4398	8109	63
2015	7706	24245	6180	12240	63
2019	8816	30619	7559	15213	58
2020	9056	32739	7882	16063	57
2021	9528	33603	8132	16530	58

Source: Economic Review, GoK, Various issues

In 2021, the index of price paid by the growers in the state was 16530 while the index of prices received by them was only 9528. This could be an indication that there is a prevalence of farm distress in the state. The situation

was always like this in the thirty-year analysis from 1991 to 2021. But the last decades have seen sharp increase in this difference. From the interaction with growers in Idukki district, one could say that high input costs in agriculture, especially wages can be attributed to this situation. The higher levels of education coupled with vigilant trade unions and presence of labour welfare boards could all have contributed to the historically higher wage rates in Kerala when compared to the rest of the country.

### 1.3 Black Pepper Cultivation in Kerala

In 1960-61, Kerala accounted for about 98 percent of India's pepper production (Economic Review, 1961). In spite of falling productivity levels, Kerala was able to maintain its position as the leading pepper producing state in India. During 1991, Kerala was having about 97.2 per cent of India's total pepper growing area which was 168507 hectares. This much land produced 97.6 per cent of India's total production at 46802 tonnes with a productivity of 278 kg/ha. Karnataka was at a distant second position with 1.67 per cent of India's production and 1.52 per cent of area. The productivity level of Karnataka was 253 kg/ha which was less than Kerala's yield. But, by the year 2015 there is a major twist in the scenario with Karnataka producing about 35000 tonnes which is about 50 per cent of India's total pepper production from an area of 32670 hectares constituting 25 per cent of total area. Kerala has slipped to the second position with 30000 tonnes of production from 85430 hectares. In terms of percentage share in India's total production, Kerala was having 43 per cent and the area share was 66 per cent. The Table 1.3 shows the percentage share in area under pepper and production of Kerala and Karnataka from 1991 to 2021

**Table 1.3: Percentage Share of Area and Production of Kerala and Karnataka from 1991 to 2021**

Year	Kerala		Karnataka	
	Area %	Production %	Area %	Production %
1991	97	98	2	2
1995	97	98	2	1
1999	96	85	2	2
2003	93	95	5	3
2007	92	68	6	24
2011	86	43	10	38
2015	66	43	25	50
2019	40	39	41	55
2021	33	37	52	59

Sources: Compiled from Economic Reviews, Govt of Kerala & Karnataka

Karnataka has consistently increased its share in India's total production in this time period. It was only in 2008 when Karnataka saw a massive decline in its production by over 70 per cent to 3624 tonnes. But, the very next year it recovered with an impressive 72 per cent growth in production to 6236 tonnes. In 2010, the pepper production in the state saw a massive growth rate of 141 per cent reaching 15000 tonnes. For the next four years, Karnataka never went below the level it reached in 2010. In 2015, the production level touches 35000 tonnes surpassing Kerala which had 30000 tonnes. The biggest achievement

of Karnataka was the fact that area under pepper in the state was only 32670 hectares or 25 per cent of India's total area under pepper. While Kerala achieved its production from 85430 hectares which was 66 per cent of total area under pepper. This shows a massive rise in Karnataka's productivity level to 1071 kg/ha which was more than double India's productivity level of 565 kg/ha. During the same period, Kerala's productivity level was at

351 kg/ha. The Table 1.4 depicts the decadal rate of change in area, production and productivity of Kerala, Karnataka and India.

**Table 1.4: Decadal Rate of Change in Area, Production and Productivity of Kerala, Karnataka and India**

Year	Kerala			Karnataka			India		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield
1971-81	-10	14	27	39.4	-27.1	-47.7	-8.9	12.7	23.9
1981-91	59	64	3	-4.0	-6.4	-2.3	58.7	62.6	2.2
1991-01	20	30	8	160.2	141.1	-4.0	23.3	32.8	8.0
2001-11	-15	-66	-60	180.1	936.4	256.4	-5.8	-24.6	-20.1
2011-15	-50	45	193	55.1	91.9	23.7	-38.5	45.8	137.4

Sources: Computed from the Economic Reviews, Govt of Kerala & Karnataka, Various Issues

From the above table, we can make out that Kerala saw a decline in area and a much bigger reduction in production growth rate during the time period from 2001 to 2011. At the same time, Karnataka saw a massive rise in area by 180 per cent and much larger rise in production by 936 per cent. As discussed earlier, the time between 2000 to 2002 saw one of the largest fall in cash crop prices which adversely affected the pepper growers. The Figure 1.4 tells us the trends in productivity of Kerala, Karnataka and India from 1991 to 2015. From 1991 to 2005, Kerala's productivity was more than that of Karnataka. In 2006, when Kerala experienced a 55 per cent fall in yield, Karnataka saw a colossal rise at 262 per cent. The absolute value of productivity in Kerala was 141 kg/ha and that of Karnataka was 811 kg/ha in 2006. From 2006 to 2009, there was a slight recovery in productivity which again fell by 20 per cent in

2012. The state of Karnataka also experienced a fall of 12 per cent, but its yield was more than 7 times that of Kerala. In 2013, when both the states saw an increase in yield, Kerala's productivity was at 295 kg/ha and that of Karnataka was 963 kg/ha. By 2015, the productivity figures were 351 kg/ha and 1071 kg/ha for Kerala and Karnataka, respectively.

## **2. Objectives & Methodology :**

While studying the dynamics of the pepper economy in Kerala, it came out that marketing is indeed a weak area where some improvements can be done. An intervention at this side of the value chain can go a long way in ensuring proper remuneration for the pepper growers and reduce their exploitation in the hands of the traders, aggregators and exporters. The objective of this paper is to study issues relating to the pepper economy of Kerala and suitable interventions for their economic benefit.

To understand the issues facing the pepper growers better and to attest the findings from the secondary data analysis, a primary survey was conducted taking four villages in Idukki district. The villages were selected on the basis of the importance given for pepper cultivation and also accessibility to the respondents. A pilot survey was conducted in Peeramade grama panchayat during December 2019 for testing the questionnaire. The main survey was conducted in December 2022. The four grama panchayats selected were Kokkayar and Kumily both in Peerumade Block Panchayat as well as Peruvanthanam and Peermade in Azhutha Block Panchayat.

Kokkayar grama panchayat is the smallest among our sample with 55.91 sq km and consisting of just one village and 13 wards. It comes under Idukki revenue district and Peerumade assembly constituency. The population is 11786 with density 210.8 per sq km. Kumily grama panchayat with a total area of 816.73 sq km is the biggest and has bit urban nature as well. It comes under Peerumade assembly constituency with 10 wards and 3 villages which are Kumily, Periyar and Mlappara. Its total population is 35915 with a density of 43.97. Peruvanthanam is another village selected with a total area of 57.3 sq km and a population of 15626. The density of population is 272.71 with 14 wards and 2 villages. The last village selected for the focus study is Peermade with 144.8 sq km area and 21712 population. The density of population is 149.94 with 17 wards and 3 villages. A sample of 30 farmers was selected from each of the villages mentioned above, except for Kokkayar where 14 farmers were used in the sample. This will add up to a total of 104 farmers for this focus study. A simple random sampling was used with just one criteria being adopted which was the grower should have at least 2 cents or 871.118 sq ft of area under pepper. The data was collected using a

structured interview schedule.

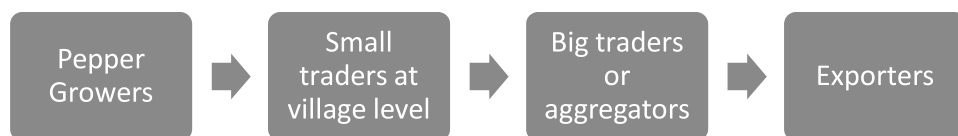
### 3. Results & Major Findings:

The findings of the study reveal the supply chain of pepper and fluctuations in prices. The issues facing the pepper growers are also discussed.

#### 3.1 Marketing of Pepper in Idukki :

The growers normally take their produce to the traders by themselves. The supply chain of pepper is indicated in Figure 1. Most of the growers in the sample owned two-wheelers and they load pepper in gunny bags. These gunny bags are transported to the city using two-wheelers or if it is bulky then an auto rickshaw is hired. Most of the growers said that the traders nearer to their home (approximately 3 to 4 kilometres), normally tend to reduce the prices heavily.

**Figure 1: Supply Chain of Pepper**



These traders knew the growers personally and had lot of information on them such as how much produce they normally bring, whether they have access to cheap means of transportation, their financial requirements etc. The transportation cost has seen an increase following the recent fuel price hikes which has not come down. All the growers in the sample had to make their own arrangement for transportation. This information about the grower is used by the traders to their advantage. The traders generally quote price less than the prevailing one. Hence, most of the pepper growers avoid giving to the traders near their home and instead travel 10-15 kms to the nearest town. The difficulties faced by the traders include high transportation cost, difficulty in transporting the produce and no option of bargaining even with the town-based traders. The prevailing buying price of pepper when this survey was conducted happened to be Rs: 428 per kg. But, the farmers in the sample got between Rs: 410 to Rs: 426. About 95 per cent of the sample farmers mentioned that they always got at least Rs: 5 less than the price mentioned in the newspaper. All the newspaper in that region as well as the television and radio channels carry market information about all the major crops in the state. Due to the high penetration of media in Kerala, the farmers are aware of the price trends and also other issues connected to the farm sector. Most of the pepper is sold in the market between February and



September. The price will fall immediately after the harvest (November last to January) but used to spike during the monsoon. (Mid-May to August)

There is also a price hike in November, just before the harvest begins. In November 2022, there was an expected price rise with prices in nearby towns of Mundakayam, Kootickal and Peerumade reaching upto Rs: 485 per kg. But, the farmers in the sample received hardly Rs:430 per kg and many of them had already sold off their full produce in February itself which was immediately after the harvest. The average rate of local price changes month wise from 2001 to 2021 for Malabar ungarbled are given in Table 1.5. The rate of change in local prices between 2001 to 2021 also echoes what the sample farmers mentioned. There is a huge fluctuation in pepper prices between months. This is due to high supply of pepper during harvest months and can easily be managed because pepper has a longer shelf life unlike many other crops.

**Table 1.5: Average Rate of Local Price Changes Month-wise from 2001 to 2021**

Month	Rate of Price Changes
January	0.3
February	-1.4
March	1.7
April	6.4
May	1.7
June	-0.4
July	3.8
August	2.6
September	1.4
October	1.4
November	-0.6
December	-0.7

Source: Various Economic Surveys, GoK 2001 to 2021.

### 3.2 Issues Facing Pepper Cultivators in Idukki:

The farmers were given a set of 14 issues which they had to rank. These issues were identified on the basis of the pilot survey conducted earlier and literature review. There were 14 issues which were identified and an open question was also asked to the respondents in case they had any other specific issues. Table 1.6 tells us the percentage of respondents which ranked the issues as major, medium and minimum. The issues were categorized as major, medium and minor on the basis of the intensity at which it affects the pepper growers. A total of 14 issues or problems affecting the pepper growers and its cultivation were identified. The growers were asked to rank it in order on seriousness into major, medium and minor intensity. It was found that high wage rate, high input costs, unavailability of credit and absence of government support were considered major issues by the growers. More than 90 per cent of the growers in the sample mentioned these as serious or major issues. Nearly 88 per cent of the farmers even considered extreme climate as a major problem facing them. Peruvanthanam panchayat hasn't seen any change in cropping pattern for the last 15 years, but this village was one of the worst affected in the 2021 floods. This had an impact on the pepper cultivation as well.

**Table 1.6: Percentage of Farmers and Their Ranking of Issues in Pepper Cultivation**

Issues	Major	Medium	Minor	Total
Diseases and Pests	28	47	25	100
Extreme climate	88	12	1	100
High input cost other than labour	94	5	1	100
Lack of availability of planting material	32	22	46	100
High wage rate for hired labour	98	1	1	100
Shortage of labour	6	16	78	100
Insufficient knowledge of agricultural practices	37	30	34	100
Age of plants	16	44	39	100
Lack of information on market like prices	44	18	38	100
Price fluctuations	52	24	24	100
Unavailability of credit	91	9	0	100
Inadequate govt support	97	3	0	100
Presence of middlemen	9	0	91	100
Lack of marketing facilities	73	3	24	100

Source: Field Study

About 78 per cent of the farmers have mentioned about shortage of labour as a minor problem which had manifested as high wage rate. But, with the promotion of bush pepper or any such technology this could be addressed. Though a large number of farmers (88 per cent) considered climate change as a major problem, they also felt that it can be addressed with new technologies and methods such as new varieties, artificial irrigation etc. Presently, these new technologies are very costly and once it becomes cheap could be widely adopted by the growers.

The two issues of unavailability of credit and lack of government support needs to be seen together. One would be confused when 91 per cent of the farmers mentioned unavailability of credit as a major problem and that earlier in our study found that most of the farmers are using their own funds for agriculture. So, the question comes why the growers require credit. Normally, the growers require credit for personal requirement. Many of the growers (90 per cent) were either full time growers or wage labourers. Hence, harvesting the crop and selling it ensures flow of money into their household as many doesn't have any other source of income. This angle is exploited by the village traders who always quote low price on the produce than what is prevailing in the market. Hence, transportation problem coupled with requirement of cash leads to low price for the produce. Hence, a large number of farmers depend on non-banking financial companies, such as KSFE to fulfill their credit or consumption requirements.

#### **4. Implications and Policy Recommendations:**

Any improvement in the pepper economy has a direct implication on the rural areas of Kerala. The districts of Idukki and Wayanad where pepper is grown are the most backward regions of Kerala. Hence, it become important to focus on the cultivation of these crops as many vulnerable sections of the society have their livelihoods depend on its profitability. An upswing in the pepper economy can help the country earn valuable foreign exchange. Pepper being a lifestyle commodity its demand is going to increase with an increase in GDP and expansion of food processing industries. These industries require pepper both as a flavouring and preservative agent in the various products.

There is a need for increased government support for pepper cultivation. If India must reclaim its position as the major pepper producer, there is a need to arrest the reduction in the pepper production. Almost 90 per cent of the pepper growers viewed unavailability of credit and lack of government support as major issues affecting pepper growers in Kerala. The Spices

Board, which is one of the five statutory commodity boards under the Ministry of Commerce, is responsible for the production and export of spices. Hence, pepper also comes under this board which was constituted in 1987. The Spices Board's recent activities can be seen limited to research in the processing of spices, packaging and grading, setting up exclusive parks for spices, evaluation and certification of spice products etc. Initially, the board used to provide assistance directly to the farmers in the form of subsidised planting materials and even training on scientific methods. The ICAR through its main research institution for spices, the Indian Institute of Spices Research (IISR) located in Kozhikode also does research on spice crops. These are the two major organisations under the Union Government working in pepper production and marketing. Many of the programmes related to pepper production implemented by these government agencies don't have any continuity.

There is a need for long term planning for implementing programmes such as those related to the provision of providing subsidised planting materials, scientific methods of pepper cultivation etc.

The Government of Kerala has a company, the Kerala State Civil Supplies Corporation Limited or known as Supplyco which administratively functions under the Department of Food and Civil Supplies. It operates a chain of retail supermarkets in Kerala which sells products at comparatively lower rates than the prevailing retail prices. The Supplyco buys various agricultural products like pepper, tea, coffee, pulses etc to be packaged and sold to final consumers through its retail shops at a subsidised rate. It also has its own brand which goes by the name 'Sabari'. But, these procurement facilities or for that matter any government agency is practically non-existent for a pepper cultivator. This leaves them at the mercy of the village level traders who are the first point of the marketing channel which connects the farmers. There is an urgent need to expand and effectively implement the procurement policies of Supplyco to make it more effective for the pepper growers. The Supplyco depots and maybe even the retail outlets can double up as procurement centres. This can ensure the pepper growers get the minimum prices because as mentioned earlier one of the major problems is that the farmers are not able to realise the full prices which is mentioned in the newspapers or radio. The farmers of our sample were unanimous in demanding such a procurement facility at the village level or minimum at the taluk level.

Also, the pepper economy sees the presence of a large number of government agencies in its promotion. For example, the Spices Board is one of the five

commodity boards which has been constituted under the Ministry of Commerce. The ICAR under the Ministry of Agriculture and Farmers Welfare also does intervention in the pepper or other spices crops. In 2013, the Government of Karnataka constituted the Karnataka State Spices Development Board which functions under the Department of Horticulture. Hence, one can see multiple agencies being engaged in the same activity of promoting pepper cultivation. There needs to be some synergy in the various initiatives taken by the government agencies.

### **5. Interventions: Cooperatives in Pepper Marketing:**

There is an urgent need to have increased participation of cooperatives in pepper marketing which can be extended to include other spices as well. The pepper growers face exploitation at two fronts; firstly, increased input costs and secondly lack of realisation of remunerative prices. The cooperatives can act as an input supplier to the pepper growers by supplying planting materials, fertilizers, pesticides, organic farming certification etc at affordable and subsidised rates to the growers. By providing such inputs at cheap rates can help the growers in reducing their cost of cultivation which can increase their profit from cultivation. Such cooperatives can also go a long way in expanding the use of bio-alternatives for pest control, expanding organic cultivation and providing scientific advices to farmers. It can also function as an effective link between research agencies engaged in spices like the IISR and the farmers.

There is a lot to be done for on the marketing side. During the interaction with the spice exporters, it was observed that most of them preferred to deal with traders and aggregators. They were hesitant to deal directly with the growers though the reasons were not specified. The most plausible explanation could be that growers aren't responsible for any uncertainty in supply while traders are more receptive. It is this situation, the presence of a cooperative modelled on the lines of milk cooperatives, can be planned. A farmer's cooperative with government support in the pepper producing areas can help the growers in realising better prices for their agricultural produce. Also, it can stop the exploitative practices by traders and aggregators which were mentioned earlier. A marketing cooperative can effectively eliminate two major players in the supply chain of the pepper, namely traders at the village level and aggregators. This can make the availability of the produce cheaper for the exporters, thereby increasing their competitiveness in the world market. In long term, these cooperatives can slowly turn to directly exporting the produce.

Further, these cooperatives can maintain warehouses which can store pepper

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and other spices in huge quantities. A cooperative for pepper producers has better chance of being effective than milk cooperatives on account of the longer shelf life of pepper. Further, this cooperative can also function like a link between farmers and various government departments to transfer benefits like subsidies or planting materials. The advantage of Kerala is that there are few cooperatives already present in the food processing sector such as the Regional Agro- Industrial Development Co-operative of Kerala Ltd (RAIDCO). This organisation has nearly 50 years of existence and has been actively playing a crucial role in the agrarian sector as well as food processing industry. The cooperatives can be organised as primary cooperatives which can include 2-3 villages together as this can reduce the transaction costs. There should be an apex cooperative at the district level which should co-ordinate the primary cooperatives. The district level cooperative can act as the link between exporters and also spices companies. Further, the presence of large number of Kerala Government undertakings such as the SUPPLYCO in the retail sector can provide them space to directly market their produce as well. It is very important that these cooperatives leverage the presence of State-owned undertakings to market their produce which can reduce their transaction costs further.

The presence of cooperatives in spices can go a long way in helping India regain its position be an apex cooperative at the district level which should co-ordinate the primary cooperatives. The district level cooperative can act as the link between exporters and also spices companies. Further, the presence of large number of Kerala Government undertakings such as the SUPPLYCO in the retail sector can provide them space to directly market their produce as well. It is very important that these cooperatives leverage the presence of State-owned undertakings to market their produce which can reduce their transaction costs further.

The presence of cooperatives in spices sector can go a long way in helping India regain its position as the major spices' producer in the world. For the successful operation of such a cooperative marketing society, a concerted effort from state government through its departments such as agriculture, finance and civil supplies along with increased participation of local bodies and farmers are necessary.

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