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**EMERGING PROBLEMS OF
AGRICULTURAL MARKETING IN KARNATAKA**

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FOREWORD

Marketing of agricultural produce is one of the most crucial aspects of agricultural development. The new economic policy of liberalisation has brought this aspect to the centre stage. The price response studies have indicated that the farmers are sensitive to economic incentives and thus the emerging changes will have to be monitored through market institutions. In this context, analysis of emerging problems of marketing assumes importance. The present study attempts to look into the emerging problems of marketing in the State of Karnataka, especially for cardamom. The study was undertaken by Dr. C.S.Gajarajan at the Agro-Economic Research Centre of the Institute. He had formulated the design of the study and completed the data collection. After Dr.Gajarajan retired from the services of the Institute, Dr. R.S.Deshpande undertook the analysis of the data collected and completed the study. He was assisted by Shri Rajiv Dogra in the work.

The study begins with the review of selected studies on problems of marketing and endeavours to highlight those which are crucial for the State of Karnataka. This is followed by the analysis of the secondary data at district level in order to look into the problems of marketing both at organisational and infrastructural levels. The primary data are analysed to understand the micro level trends as

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well as the responses of the farmers. The attempt here is to locate the problems of marketing at micro level. The study concludes with some suggestions for improving agricultural marketing efficiency in the State. I hope the study would be useful for administrators as well as researchers working in the subject area.

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CHAPTER I

INTRODUCTION

1.1 Introduction

The new economic policy has placed forth quite a few interesting issues for the agricultural sector. These can be grouped into four broad groups. Firstly, the GATT proposals are likely to put the sector under pressure in terms of continuation of the technological advances on the similar lines. It would become necessary ^{to} boost the efforts of locally generated technologies to reduce the ultimate cost. Secondly, with the strong export promotion drive the cropping pattern is likely to shift towards the crops as well as varieties with good export potential. This is likely to affect the development of home market. Thirdly, the policies are directed more towards the farmers with sizable marketable surplus and therefore the credit, land and infrastructure would largely benefit this group alone, in the absence of corrective steps. Lastly, it would also become necessary to develop the product as well as factor markets in agricultural sector in order to meet the emerging challenges. The role of market, thus emerges as a very strong component as expected in the mid-seventies (NCA, 1976).

The growth of population, increased incomes and increasing demand from the non-farm sector, would make it necessary to increase the efficiency of agricultural marketing system. The marketing system should be able to meet the challenge of

moving adequate quantities of food at minimum cost and stimulate production for the market and expansion of processing activities with strong backward linkage (Varadarajan, 1989). Therefore, it becomes imperative to analyse the existing bottlenecks and emerging problems in the system.

1.2 Market Channels and Market Structure

Agricultural marketing system begins from village shandy to a fully grown regulated market and commodity marketing boards. Over the last four and half decades, large number of institutions have developed over the country to serve as a link between producers and consumers. These institutions vary across regions, crops, products and processes. Varadrajana described six market situations currently in practice in India (Varadarajan, 1989).

i) The first category includes small farmers, vegetable gardeners, fishermen, small dairy men and poultry keepers which include all the small sellers. These are mainly producers and they do not trade in large quantities. There is a large part of this group which specializes only in buying and selling, with a motive to make quick cash to meet their daily requirements.

ii) The weekly markets, held at villages, towns, cities, cater to a larger group of consumers. The largest spread among these is that of the village shandies. Both producers as well as intermediaries operate in these markets. For a long time the non-producer intermediaries have been dominating

the market transactions in village and small town shandies. These intermediaries could get a profit margin from 50 to 100 per cent which is often higher than the producers. Weekly village markets thus serve as the first hand economic link between producer and consumer.

iii) The wholesale markets, situated in large towns serve as a strong link between village and the economy. There are specialized wholesale markets and these operate through open and/or closed auctions. There is a strong group of commission agents who work between the producers and merchants as a link. The seasonal character of the crops and their arrival heavily influences the price. These markets also have a common practice of extending advance to the producer and exerting a tie between producer and buyer. Most often this practice is exploited by the wholesale merchants to their advantage.

iv) A better derivative of the above market situation, is the 'mandi bazar' where, traders buy directly from the producers and at times even from the fields of the farmers. This is quite common in the market of horticultural products. A very common practice here, is to buy the entire crop in advance (before maturing) and collect the produce from the farm gate. Even under these arrangements, a tie up between trader and producer through credit market is quite common.

v) The markets controlled by National or State Boards for specific commodities like tea, coffee, cashew, pepper, grapes, cardamom, etc., is a component of direct intervention by the

Government in the marketing system. The producers sell their product to the Board at ^a pre-determined price based on the quality of the produce. The board extends technical services to the farmers, regulate prices, buy products and arrange to sell the product in domestic or international markets. Most of the high value added products are covered under this system.

vi) The sixth market situation involves co-operatives of the producers for marketing their products. These operate strictly on the co-operative principles and are governed by the co-operative legislations.

1.3 Government Interventions in Marketing

An important objective of the food marketing and price policy since Independence has been to strengthen the marketing organizations in order to reduce the role of middlemen, wastage and provide better incentives to the producers in order to expand production and augment surpluses. Assuring fair price to the producers, was always behind these policy initiatives. The foodgrains trade was traditionally handled by private agencies and thus larger margins were available to the traders. Prior to 1964-65, even the role of co-operatives in the field of marketing was limited. Over a period of time, Government of India has enacted different legislations for improving the marketing efficiency for agricultural produce. Most important of these are:

- i) Agricultural Produce (Grading and Marketing) Act, 1937,

- ii) Prevention of Food Adulteration Act, 1954;
- iii) Essential Commodities Act, 1958,
- iv) Trade and Merchandise Act, 1958,
- v) Monopolies and Restrictive Trade Practices Act, 1969,
- vi) Standards of Weights and Measures Act, 1986,
- vii) Bureau of Indian Standards Act, 1986,
- viii) Consumers Protection Act, 1986.

A significant step among the Government interventions in foodgrains marketing, was the establishment of Food Corporation of India (FCI) in 1965 following the recommendations of Jha Committee. FCI was entrusted with the functions of procurement, storage, transportation and sale of foodgrains. Some of the important achievements highlighted by Kunhiraman (1990) are -

- (i) FCI's turnover during 1986-87 was Rs. 10,939 crores,
- (ii) FCI handled 44.15 million tonnes of commodities during 1985-86,
- (iii) It has 6,800 purchase centres all over the country,
- (iv) It procured 10.54 million tonnes of wheat during 1986-87 with the help of State agencies,
- (v) The Corporation handled the procurement and distribution of levy sugar.

FCI's functioning and the methods of their interventions in the market have helped in enhancing the efficiency of marketing. FCI takes appropriate steps in order to meet the supply gaps during lean period.

The usual market channels through the regulated and

wholesale markets, cover the major marketing operations. Co-operative marketing societies have also been quite common in the States of Maharashtra and Gujarat. The co-operatives operate at producers as well as the traders level. Some of these, are specialized commodity co-operatives dealing with the specific groups such as coffee, tea, arecanut, cardamom, cashewnut, grapes, etc. These co-operatives take care of producers interest including providing proper technical advice, inputs and even advances for the production expenditure. Primary marketing co-operatives work at the primary level and these are federated both at the State and the National levels. In some of the States, there is another step below the State level federation located at the district.

By the end of June 1987 as many as 3.15 lakh co-operative societies were functioning in the country. These served a membership of about 150 million and held working capital of about Rs. 45,000 crores. The co-operative marketing structure works under the support of the Government co-operative department and functions according to the Co-operative Societies Act. Over the years, the co-operative law is strengthened to help the producers and members to function effectively.

These efforts together could reduce some of the inadequacies in the marketing structure and streamlined the functioning of these organizations. But even now numerous problems persist in the organization of marketing. The current literature in the subject suggests ^{that the} foodgrain policy emphasized

the production aspects and did not pay adequate attention to marketing.

1.4 A Brief Review of Literature

At the farm household level, several studies have dealt with the question of determinants of marketable and marketed surplus for various crops, regions and groups of farms. Four major determinants emerging out of these studies are: (i) farm size, (ii) size of production, (iii) family size and (iv) non-farm income. At the macro-level, considerable theoretical and empirical work focussed mainly on the relationship between relative prices and quantum of marketable surplus (Subbarao, 1991). At aggregate country level, the question of size of farm and marketable surplus relationship was attempted among others by Dharam Narain (1961) and Patnaik (1975). A direct relationship was noticed by Patnaik between the size of holding and marketed surplus whereas, Dharam Narain concluded with a 'J' shaped curve. Though, there are not many macro-level studies dealing with the questions about marketed/marketable surplus, there is enough evidence from the widely spread micro studies to help generalizations. High inequality in the distribution of marketed surplus across different size classes and the differential market access (in the presence of middle-men) cause a skewed distribution of benefits especially against the net purchasing farm households (Subbarao, 1991). On this background the study by Nadkarni (1980) analysed further interesting issues. It begins with the hypothesis that the

market structure and responses are strictly the functions of regional and/or crop economies. The important aspect emerging out of this study is that the availability of marketable surplus to the urban sector is hardly a sufficient condition for economic development. The vast market dependence of the rural sector around a narrow base of marketable surplus is an important dimension of the problem. It is further argued that agricultural development itself, can be arrested by what is called as marketable surplus trap and this cannot be posed simply as an issue between urban and rural sectors in a very narrow sense.

Broadly, one can separate three distinct approaches in the literature on marketable and marketed surplus. The first approach deals with internal dynamics of marketed, marketable surplus and relating this with development. The question of commercialization is also linked with this issue. The second, approach brings in the issue of agrarian structure within which the economy operates. The issues involved are the marketed and marketable surplus across size classes of holding, tenants vis-a-vis owner-cultivators and the implications of these. The third approach, deals with the determinants of marketed and marketable surplus. Mostly, one or more of the above approaches form the theme of the research works.

A good review of the issues involved in the literature can be found in Nadekarni (1980). We summarize here a few points from this review which are relevant for the purpose of this study.

- i) In the process of increasing commercialization, more and more people are forced to depend on the market. Thus, the process of commercialization influences the product as well as factor market and these are tuned by the general agrarian structure.
- ii) The above perspective finds its place in only a few studies. Mostly, the literature is flooded with the marketable surplus function and role of prices. The debate is far from being conclusive, because of the role of differentiation of peasantry. The specification of price had occupied the central stage for quite some time.
- iii) Price specification and differentiated market access are the two internally involved issues. The price responsiveness can also be interpreted as a weighted response, with differentiated access being the weights. Another problem in price specification is the dominance of distress sale. Among the small and marginal farmers the process of distress sale is quite common.
- iv) Usually a neat distinction is made between the crop substitution function and the aggregate supply function, many studies have neglected this. Such treatment would result in difficulties for interpreting the elasticities in

price response studies. But on the output elasticity of marketable surplus the elasticities indicate more than proportionate response to output.

- v) Access to market and cost of marketing have received relatively less attention in the literature. Moreover, the concept of market access relates only to the distance between market to the village (site of production), but in fact 'access' has a larger connotation. The role of intermediaries thus assumes greater importance.
- vi) Market dependence is an important aspect of the study of market behaviour in agriculture. The market dependence taken along with the public intervention in marketing clearly brings out the role of different groups in shaping the market.

Another important aspect of the studies on marketing of agricultural products, is the distinct behaviour of market forces across groups of commodities. We may broadly group these into three categories: (i) foodgrains, (ii) commercial crops of quickly perishable nature, (iii) commercial crops with longer stack life. Further, these can be subdivided into two sub-groups, namely, (i) commodities for home market and (ii) those with export potential. Each of these groups would have a

different market behaviour in terms of price and output elasticities, size-surplus relationship, market access, market integration and such other issues. Therefore, the studies on marketing must be crop specific or for a homogenous group of crops.

1.5 Marketing of Agricultural Commodities in Karnataka

Karnataka State has the peculiarity of a highly diversified cropping pattern starting from the high value export oriented spices to the totally home market oriented Finger millet and Jowar. The most dominant institutional arrangements are special commodity boards, marketing co-operatives and regulated markets. Commodity boards and corporations are the the producer's organizations with Government control in most of their functioning. These are under the control of the State in all their functioning. These are under the control of Ministry of Commerce, Government of India. These boards usually cover plantation crops like Coffee, Tea, Cardamom, Spices, etc. Among the other commercial crops cotton and tobacco are also controlled by commodity boards. The functioning of the board involves procuring, marketing, price-fixation, exports, dissemination of technical know-how and other such support to the producers.

The second important channel of marketing in Karnataka, is the regulated markets. During 1987-88, 361 regulated markets were operating in Karnataka handling more than Rs. 1633.33 crores worth of agricultural commodities. More than 50 agri-

cultural commodities including fruits, vegetables, livestock, fisheries and forest products have been notified for regulation. Among the major commodities traded, foodgrains and oilseeds are the dominant groups. The increasing importance of the regulated markets can be easily noted from the ever increasing share of

Table 1.1: Trends in Marketing in Karnataka

S. No.	Items	1977-78		1987-88	
		FG	OS	FG	OS
1.	Total Production (lakh quintals)	666.10	71.00	564.10	150.20
2.	Marketable Surplus (lakh quintals)	233.14	60.35	197.44	127.67
3.	Arrivals in Regulated Markets (lakh quintals)	53.66	25.12	135.65	43.95
4.	Arrivals as % of Production	8.06	36.40	24.05	29.28
5.	Arrivals as % of Marketing Surplus	23.02	41.63	68.71	34.45

Source: Ravi, P.C., Chengappa, P.G. and R.V. Ramegowda (1993).
Note: FG - Foodgrains OS - Oil seeds

market arrivals in the total marketable surplus. The markets for foodgrains and commercial crops are fairly competitive as compared to the perishable crops (Chengappa *et al*, 1988, Ravi and Muralidharan, 1987; and Sujatha *et al*, 1989). There is ample evidence that intermediaries in perishable crops received returns far in excess of their role in providing time and space utilities.

Almost all wholesale markets as well as commodities have been brought under the purview of the marketing regulations,

still a large number of rural markets remain outside the fold of these. These markets lack in proper infrastructure and are mostly dominated by middlemen especially in Northern Karnataka. The non-regulated village markets trade mostly in foodgrains and vegetables. Commercial crops find their rightful position in the regulated market structure.

The studies in marketing of agricultural products indicate quite a few interesting issues. Firstly, it is observed that the markets are strongly segmented across commodities and therefore each commodity market has its own specific problems. Generally, grain markets have been more or less regulated except for distress sale in some inferior commodities and in specified regions. Secondly, the price integration and the price spread across groups also causes differential returns among different groups of producers. Third important issue is the market access and market functioning across different groups. The price elasticity of their marketed surplus, output elasticities, timing of marketing are some of the important aspects which, assumed great importance. Fourthly, there have been rapid changes in Karnataka's crop combinations in recent past. The agricultural economy is shifting more towards commercial crops and the need for marketing infrastructure would increase in this sector. It is therefore necessary to understand changing trends in the crops and possible requirements of infrastructure. Lastly, the new economic policy has opened up new issues relating ^{to} the export potential of the commercial crops. The

market channels for these have been largely fixed through the commodity boards but the issue of market access to the producers (especially weaker producers) and their price responsiveness would decide the further scope for such crops. These issues are of micro nature though their answers would influence the overall marketing structure. In the present study we intend to take for analysis some of these issues.

1.6 Objectives and Methodology

Keeping in view the common guidelines prepared at the AERC common meeting we have set forth the following objectives:

- i) To study the market structure and its functioning both at State level and micro level.
- ii) To identify the emerging problems of the marketing both at State level and micro level for the selected commodity.
- iii) To make projections of production, demand and availability of market centres for all crops across different regions of the State.
- iv) To study the present marketing arrangements available for the selected commodity and its related problems.
- v) To examine the farmers' reactions towards various aspects including processing, storage, pricing, etc.

Karnataka is one of the major producers of Cardamom. The officers of Government of Karnataka, Marketing Department suggested us to take up this problem for study in the State, when we approached them for opinion to select crop and region for AERC's caption study.

Accordingly, cardamom was selected for the survey at the farmers' level to understand their problems in regard to production, processing and marketing at the producer's end.

In Karnataka, the districts of Kodagu and Chikmagalur being the two largest producing districts in terms of acreage under cardamom and quantity produced, these were selected for survey. Following the common guidelines, one block each, namely, Mercara block in Kodagu and Mudigere in Chikmagalur were selected.

The branch office of Spices Board located at these two places supplied the list of cardamom growers and from these lists, villages with heavy concentration of cardamom area were selected. All the growers were listed according to the area under cardamom and with probability proportional to area, using random sampling we have selected 50 farmers from each of the two taluks/blocks. Thus in all 100 farmers were selected for the survey.

1.7 Design of the Study

The present study is spread over four chapters. The introductory chapter deals with the problems of marketing and included a survey of literature in order to bring out issues for the study. Following this, the second chapter covers the crop

economy of Karnataka, projections of output and the cardamom economy of the State. The third chapter mainly utilizes the primary data to analyse the objectives set forth. The last chapter summarizes the findings of the study. The present study has a limitation of unavailability of some of the data on some indicators.

CHAPTER II

CROP ECONOMY OF KARNATAKA AND MARKETING

2.1 Introduction :

The analysis of agricultural development process in India, after the advent of the new technology, indicates three broad groups in the inter-State performance. The first group of States, includes Punjab, Haryana and Tamilnadu. This group did not face any constraint in the adoption of the new technology. The second group is at the other extreme, where we find the institutional and other constraints are quite dominating and it is still difficult for these regions (States) to reach the higher level of rates of growth. Bihar, West Bengal, Assam and Madhya Pradesh come under this group. The third group consists of the regions (States) which could overcome the prevailing constraints and despite the odds, recorded respectable performance in a relative sence. Karnataka comes under the third group. The growth rates in the agricultural sector of Karnataka are above the average level of the country. In fact, the State has quite a large area under drought-prone category. Apart from this the proportion of area under irrigation is also quite low in the State. Therefore, on this background the performance of the State in relative terms is quite commendable.

In this chapter we intend to look into four specific aspects :

- 1) To analyse the performance of the crop economy of Karnataka State.
- 2) To obtain projections of agricultural production, demand, Marketed surplus and match with the availability of marketing infrastructure.
- 3) To study the performance of the selected crop namely cardamom at country ^{the} and at/State level.
- 4) To synthesise the role of marketing of cardamom as revealed from the secondary sources.

Our attempt here, is mainly to trace the trends in the related aspects from the secondary data. The focus of the analysis however, is towards bringing out the problems of marketing in the agricultural economy of the State.

2.2 Agricultural Sector of Karnataka :

Agricultural sector in Karnataka is gradually undergoing a change towards higher commercialization. In the pre-green revolution period, the growth rates in the agricultural economy of the State, were one of the lowest in the country. But the picture changed substantially and surprisingly, this change was not confined to well endowed regions alone. Karnataka has been one of the few States in India to recognise the importance of agriculturally lagging regions and the crop pattern in these regions was tuned to adjust for the deficiencies due to low productivity. The best examples of this can be the districts of Kolar, Dakshin

Kannada, Uttar Kannada, Chikmagalur, Hassan and Kodagu. These districts recorded impressive development as specialised crop economies.

The main features of the agricultural economy of Karnataka discussed in the Perspective Plan of Karnataka - 2001 (Govt. of Karnataka, 1988), are as follows :

1) Karnataka State has recorded impressive growth rates in the post-green revolution period, but in the eighties there seems to be a phase of stagnation. Its development experience can be characterised as a case of arrested development with a great potential in certain sectors.

2) Over the last three and half decades the State has undergone a structural change. The share of agriculture in the State income is declining, which reflects a structural shift away from agriculture. It is also indicative of the increased insulation of the overall economy from the shocks of agricultural sector. The leaning towards a commercial crop oriented pattern has increased the pressure on processing industry.

3) The State has recorded a growth of 3.71 per cent per annum in the State Domestic Product at constant prices during 1960-61 to 1985-86. The per capita income at constant prices, during this phase, increased at a rate of 1.3 per cent per annum. The growth performance of the

agricultural sector as reflected from the Sectoral State Domestic Product is not as impressive as the aggregate performance of the economy.

4) The growth in production and productivity across crops showed mixed results. Maize, wheat, sugarcane, bajra and tur have recorded impressive growth rates. The coverage of area under high yielding varieties by 1984-85 was only about 24 per cent where, only about 18 per cent of area was irrigated. Thus, the contribution of rainfed agriculture to the overall growth is quite clear.

5) The projected demand for foodgrains in the State by 2001 is placed at 10.62 million tonnes consisting of 9.37 million tonnes of cereals and 1.25 million tonnes of pulses. The growth rates in productivity also conform to the growth scenario of production of principal crops. Maize, wheat, jowar, bajra and cotton have recorded impressive rates of growth. Groundnut in particular and oilseeds in general have shown a dismal performance.

Given the above trends in the overall performance of the agricultural sector, we note six interesting observations. Firstly, the State has a strong constraint on increasing area under irrigated agriculture mainly limited by the ultimate potential. Thus, the major thrust of the crop economy has to be on the rainfed cropping. But among

rainfed crops the choice has to be directed more towards the high density crops. Rainfed horticultural crops offer a very good alternative. Secondly, the regional diversities in the cropping pattern also indicated a possibility of regional crop specialisations. In fact, this is already taking place in the State but the supporting infrastructure has to be properly tuned towards this task. Thirdly, new crops as well as new varieties of crops are entering the picture. It is interesting to note that in some of the pockets these new entrant crops have created substantial income avenues. Fourthly, as pointed out in the background papers of the Eighth Five year plan of Karnataka" Therefore, the first step in formulation of the overall strategy is to decide about certain core sectors like economic infrastructure programme on which plans should concentrate". (Background papers for Eighth Plan, ISEC and Govt. of Karnataka, 1989). Thus the creation of proper infrastructure becomes one of the most important aspects. Fifthly, in the last decade the growth of the crop economy has stagnated, giving rise to many speculations for the reasons behind such stagnation. One of the important aspects among these, is the price responsiveness of the crops. It is well understood that some of the crops did not show very encouraging price trends, possibly due to the inadequacies in the market structure. Lastly, there are marked differences in the infrastructural development across the regions. Some regions are lagging

behind even from the days of the State reorganisation. Apart from this, there is a substantial mismatch between the requirements and the availability. Further, the pressure on infrastructure is increasing over years and can put tremendous strain on the economy causing stagnation in the price trends.

2.3 Projections of Crop Output

The projections of crop output and its importance in a perspective plan needs no emphasis. It is not only important for fixing the priorities in the sectoral plan, but also because of its strong forward and backward linkage. Further, the future expectations of crop output helps in planning of quantum as well as deployment of infrastructural facilities. There are three main components of any analysis of ^{food} demand projections namely population, income and technology. Thus future demand can be established on the basis of these three components namely i. minimum nutritional needs, ii. per capita availability as well as consumption trends in the past and iii. consumer demand patterns. Karnataka's perspective plan report for 2001 used four approaches for demand projections.

The first approach involved using the population projections alone under the hypothesis that this is the single most important factor exerting pressure on the production trends. Therefore, production trends have stayed more or less in the neighbourhood of population trends. The second approach is a normative approach, where minimum

nutritional norms are prescribed. These norms are then used to indicate the normative requirements in aggregate. The third approach is a welfare oriented approach. Here, the theme involved is to shift the income classes upwards in terms of real income. After identifying the income class at the poverty line, the other two groups are named as 'just above the poverty line' and 'well above the poverty line'. Thus the policy task involves shifting of this 'ladder' upwards by enhancing the consumption level of the lowest class. This gradual shift would achieve minimum dietary requirements for all the classes when the 'ladder' reaches the 'poverty line' as the lowest step. The fourth approach is based on using Engel curves with income (expenditure as a proxy here) as an explanatory variable of consumption. All the approaches are discussed in detail in R.S.Deshpande(1933). The projections obtained by individual approaches are given in Appendix tables 2.1 to 2.4. A consolidated picture is presented here in table 2.1.

It can be seen that the demand for foodgrain will range between 7.47 million tonnes to 13.76 million tonnes. The range is high in the case of ragi, bajra, wheat and sugar. In the other commodities, the range is relatively narrow. For certain commodities we had obtained only the point estimates and therefore ranges could not be presented.

The demand projections only give one side of the

Table 2.1 : Projected Demand For 2001 . A.D. ; Most Probable Estimates of All the Approaches

(In million tonnes)

S.No.	Item	Range of Estimates	Point Estimates
1.	Rice	2.83 - 5.36	4.36
2.	Ragi	0.53 - 2.33	1.73
3.	Jowar	1.43 - 3.67	2.73
4.	Bajara	0.06 - 0.43	0.25
5.	Maize	0.05 - 0.56	0.29
6.	Wheat	0.33 - 1.71	0.30
7.	Total Cereals	6.32 - 12.35	9.37
8.	Tur	- - -	0.38
9.	Gram	- - -	0.08
10.	Total Pulses	0.73 - 1.80	1.25
11.	Total Foodgrains	7.47 - 13.76	10.62
12.	Groundnut	- - -	0.58
13.	Oils & Fats	0.21 - 0.69	0.46
14.	Sugar and equivalent	0.23 - 2.70	1.09
15.	Milk	1.74 - 3.98	3.06
16.	Other cereals and substitutes	0.11 - 0.19	0.15
17.	Vegetables	- - -	1.44

- Notes : (i) Ranges are not given for those items for which only one estimate is available.
(ii) The point estimate indicated here is the mean of the different estimates.
(iii) The projections above are for the medium fertility with migration.

Sources : Karnataka Perspective Plan 2001, Govt. of Karnataka (1988), and R.S.Deshpande (1988).

picture whereas, the supply scenario shows the actual potential of the agricultural sector. Unlike the multiplicity of the procedures and estimates in the analysis of demand projections, exercises relating to supply are relatively simple. Broadly, two approaches are followed in the projection studies of supply of agricultural commodities. The first approach involved capturing the area response of crops to price and non-price factors and then after analysing the trends in these, various scenario of supply projections are prepared. Second approach dealt with the prior rates of growth and the trends in these as determining factors for preparing various supply projections. Second approach, dealt with the prior rates of growth and the trends in the inputs. The correcting factors of technology and the level of achievable targets were also incorporated. The results are presented in table 2.2.

Three estimates of supply are presented here. It may be observed that in some of the crops the productivity levels are already high and possibility of any technological improvements above that in the next decade are remote, therefore we have presented two estimates for these crops. A consolidated picture of both supply and demand scenario is presented in table 2.3. It may be observed that the State is likely to be a surplus State though at moderate level as far as foodgrains as a group is concerned. But for rice, jowar and total pulses it may have to depend on other neighbouring States.

Table 2.2 : Supply Projections of Agricultural Commodities:
2001 AD

(In million tonnes)

Sr. No.	Crop	Supply Projections		
		Estimate A	Estimate B	Estimate C
1	Rice	4.10	3.36	5.20
2	Ragi	2.21	2.40	3.00
3	Total Jowar	2.93	1.73	2.31
4	Bajra	0.43	0.61	0.72
5	Maize	0.70	1.35	1.47 (3.0)@
6	Wheat	0.34	0.55	0.71
7	Total Cereals	11.04	10.29	14.32
8	Gram	0.11	0.25	0.37
9	Tur	0.31	0.33	0.45
10	Total Pulses	0.99	1.10	1.43
11	Total Foodgrains	12.02	12.71(11.39)@	15.65 (16.30)@
12	Groundnut	1.17	0.77	0.33
13	Cotton	1.69	0.17	0.27
14	Sugarcane	23.37	21.06	22.40 (27.6)@

Notes: (i) @ : The levels of productivity at base are too high for these crops and hence a deceleration is assumed. The figures in brackets indicate the computed output.

(ii) Estimate A - refers to an assumed rate of growth of 3.5 per cent per annum as the most probable growth rate for all crops.

Estimate B and C : The projections based on differential growth rates across crops based on productivity trends. B-refers to moderate growth Scenario and C - refers to High growth Scenario (See Appendix 2.5 and 2.6)

Table 2.3 : Projected Demand and Supply of Foodgrains.:
2001 A.D.

(In million tonnes)

Sr. No.	Crops	Demand	Supply Scenario	
			Differential growth rates (Moderate)	Growth rate of 3.5%
1	Rice	4.36	3.86	4.10
2	Ragi	1.73	2.40	2.21
3	Total Jowar	2.73	1.78	2.98
4	Bajara	0.25	0.61	0.43
5	Maize	0.29	1.35	0.70
6	Wheat	0.30	0.55	0.34
7	Total Cereals	9.37	10.29	11.04
8	Gram	0.03	0.25	0.11
9	Tur	0.38	0.33	0.31
10	Total Pulses	1.25	1.10	0.99
11	Total foodgrains	10.62	11.39	12.02
12	Groundnut	0.58	0.77	1.17
13	Cotton	-	0.17	1.69
14	Sugarcane	10.93	21.06	23.87

Source : As in Tables 2.1 and 2.2.

Our demand and supply projections are not only useful in arriving at the self sufficiency status of the State in foodgrain economy but also helps in projecting the marketing infrastructure. Assuming that the projected production would be in the range of 11.39 to 12.02 million tonnes of foodgrains, we have computed the required number of markets per district. The variables involved here are : i. total projected production of foodgrains, ii. share of marketed surplus as observed from market arrivals earlier and iii. the growth rates across districts in the crop economy (foodgrains as a proxy). The results of the exercise are presented in table 2.4. The table shows two different scenario for number of markets required, keeping in view the above three variables. The exercise is tentative in nature and thus can at best be treated as trend indicator rather than the actual position.

The requirement of marketing infrastructure is much higher than what is existing. About a hundred new markets would be needed in the State in order to serve the increasing supply of commodities. Totally, about 500 markets are needed of which 397 are already existing and therefore, there is a shortfall of about 100 markets. But in the inter-district picture, the shortfall is sharper for Bangalore (rural), Dharwad, Belgaum, Raichur and Uttar Kannada districts. It is however, essential to underline again the fact that this exercise is tentative and it is necessary to go up to

taluka level to analyse the adequacy of marketing infrastructure as well as take into consideration the specialised nature of some of the markets.

Table 2.4 : Projected Market Infrastructure based on Food-grains Output Projections.

Sr. No.	District	Number of Existing Markets	Projected Number of Markets Scenario		
			I	II	III
1	Bangalore	1	1	2	2
2	Bangalore (Rural)	7	14	11	11
3	Belgaum	40	55	60	52
4	Bellary	18	17	27	21
5	Bidar	14	16	21	17
6	Bijapur	29	25	43	32
7	Chikmagalur	8	5	12	9
8	Chitradurga	21	40	31	31
9	D. Kannada	6	13	9	9
10	Dharwad	53	67	79	66
11	Gulbarga	27	25	40	31
12	Hassan	17	19	25	20
13	Kodagu	4	6	6	5
14	Kolar	16	18	24	19
15	Mandya	10	15	15	13
16	Mysore	19	23	28	25
17	Raichur	28	35	42	35
18	Shimoga	21	23	31	25
19	Tumkur	30	39	45	33
20	U. Kannada	28	48	42	39
21	State Total	397	509	593	500

Notes : I. Based on per market turn over and projected supply

II. Based on the carrying capacity of the markets and projected supply.

III. Average scenario of the two.

2.4 Importance of Spices in Karnataka :

Spices are quite important crop groups in the economy of the State. Areawise, this crop group covers a very small share but the importance of the crop group in the aggregate economy is well recognised. Among the various spices cardamom is taken for the present analysis as discussed in the first chapter. Arecanut is another important crop along with cardamom. Karnataka is the largest producer of arecanut in the country and third in the case of cardamom among the States. It has the second largest share of area under cardamom. In the country, five States grow arecanut and cardamom in substantial capacity. These are Karnataka, Kerala, Tamilnadu, Sikkim and West Bengal. Initially, the total production was dominated by the group of Southern States but West Bengal and Sikkim are taking lead in the recent past. Before 1931-32, Kerala had approximately 63.1 per cent area under the crop followed by Karnataka and Tamilnadu. In the recent past, it can be noted that Sikkim had only 13 per cent of area but contributed 40 per cent to the production (see table 2.5). Graph 2.1 presents the movement in index numbers of area production and yield of cardamom in the country. It can be observed that 1932-33 marks a break in the trends of cardamom. The growth rates were steady till 1931-32 and picked up only from 1932-33.

Graph No. 2.1

INDEX NUMBERS OF CARDAMOM

AREA, PRODUCTION & YIELD : ALL INDIA.

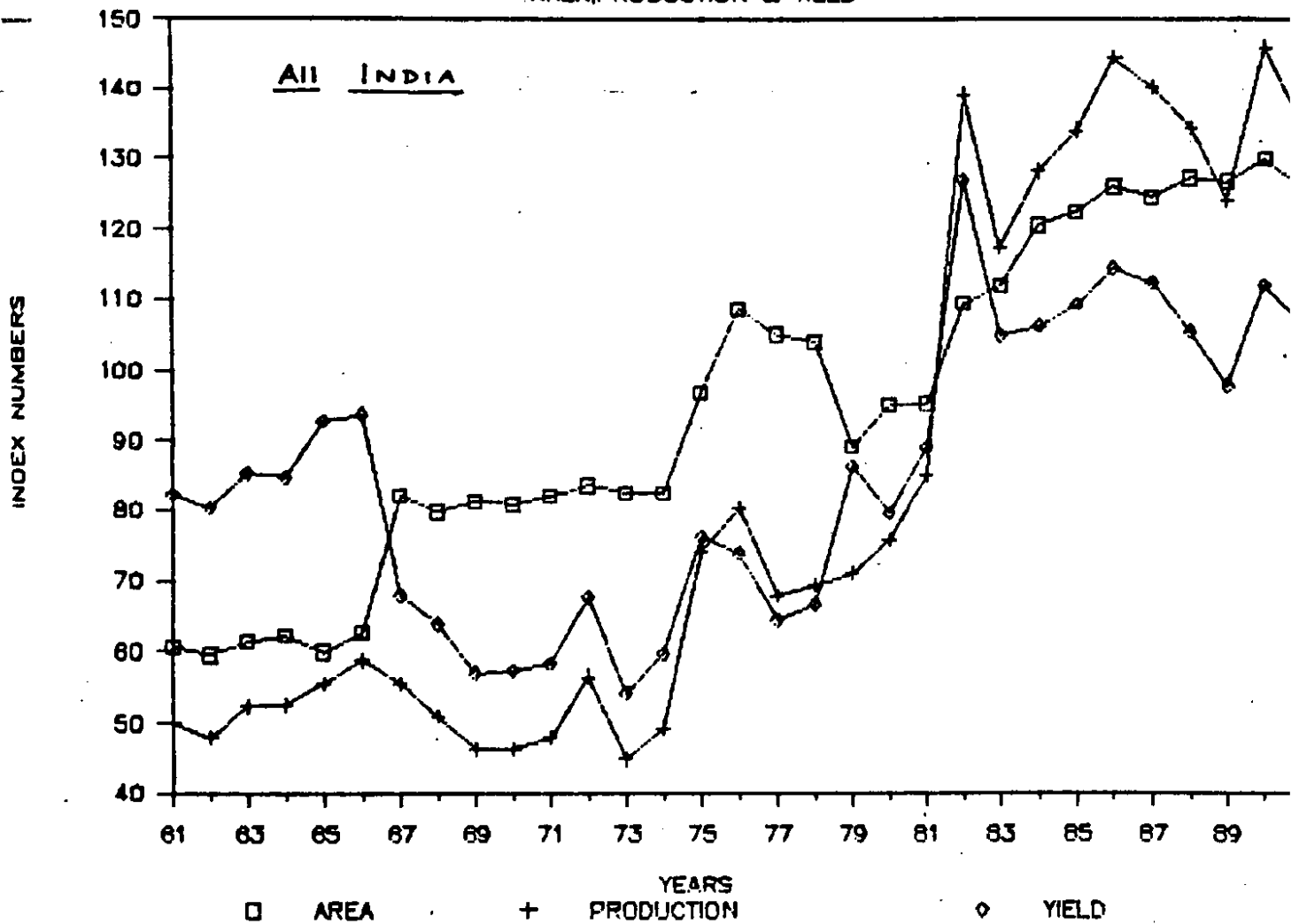


Table 2.5 : Average Area, Production and Productivity of Cardamom in Selected Cardamom Growing States

Sr. No.	State	Average		Percent Change	
		Area	Production	Area	Production
1	Karnataka	27	1.6	58	-2.2 - 2.3
2	Kerala	60	2.9	49	3.3 0.9
3	Tamilnadu	6	0.6	92	-14.1 -13.5
4	Sikkim	21	3.9	137	0.9 4.2
5	West Bengal	1.8	0.7	375	38.1 45.2
6	All India	116.1	9.6	152	1.1 3.4

- Notes :
1. Area in thousand hectares, Production in thousand tonnes and productivity in kgs. per hectare
 2. Averages are based on the data from 1936-37 to 1938-39.
 3. Percentage change refers to the end points of the period.

Table 2.6 : Average Area, Production and Productivity of Arecanut in Selected Arecanut growing States

Sr. No.	State	Average		Percent Changes	
		Area	Production	Area	Production
1	Assam	59	66	1.13	3.83 33.68
2	Karnataka	61	39	1.46	0.32 -0.25
3	Kerala	56	51	0.90	37.04 35.83
4	Other States	20	23	1.11	1.13 3.19
5	All India	196	228	1.16	10.69 16.51

- Notes :
1. Area in thousand hectares, Production in thousand tonnes and productivity in tonnes per hectare,
 2. Averages are based on the data from 1936-37 to 1938-39.
 3. Percent change refers to the end points of the period.

Graph 2.2 shows the movement in the index numbers of area, production and productivity of arecanut in the country. It is not very surprising that the index numbers of productivity have more or less stagnated at the same level. There is a slight improvement in the trends of productivity from 1935-36. But all along the period, growth in production came through area improvement rather than through productivity

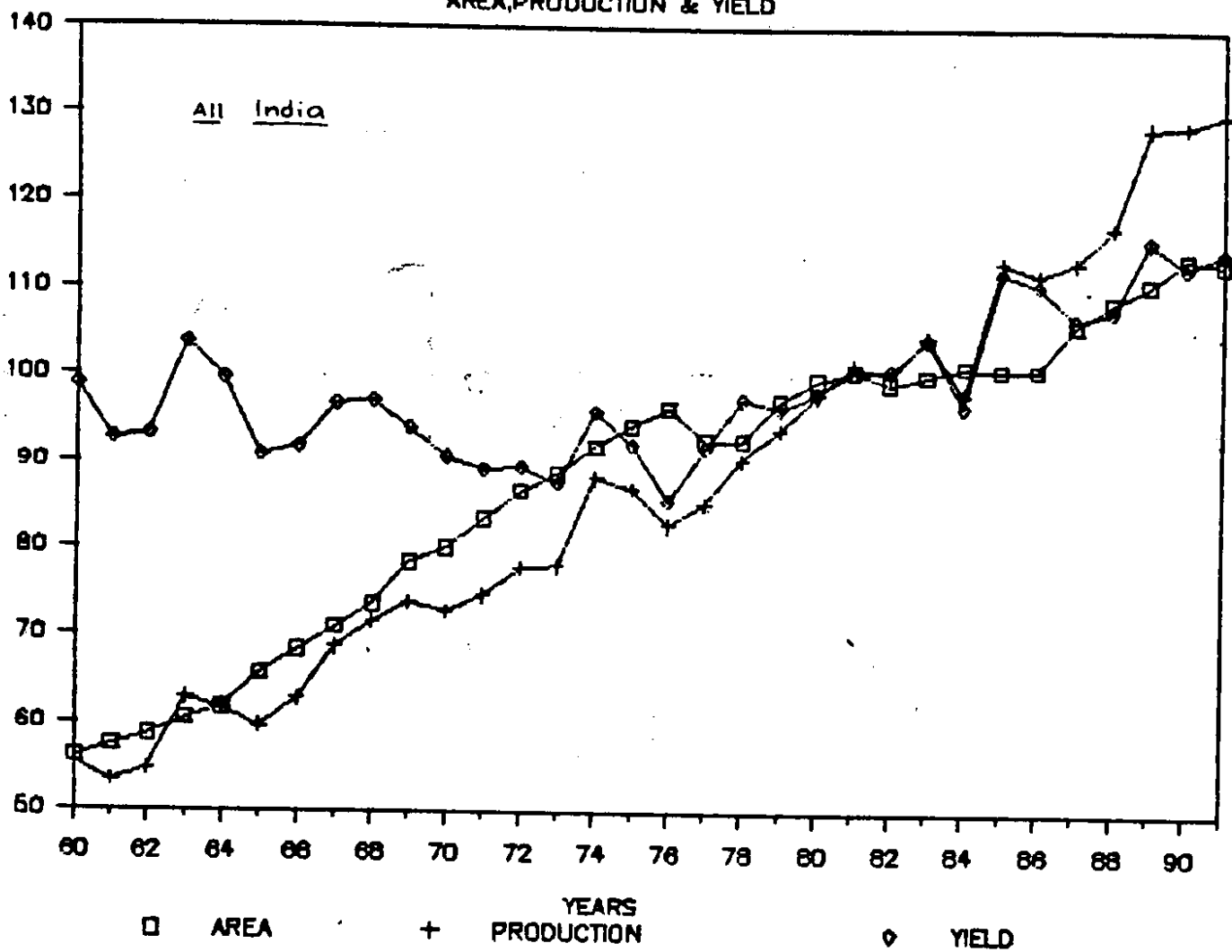
Among the major growing States for cardamom and arecanut, Karnataka is one of the ^{which} two States/have largest area share. But due to the low productivity of cardamom, it does not retain the top rank in the comparison across/^{the} States in production of cardamom. In the case of arecanut however, it recorded highest production among the States in the recent past (Table 2.6). But the productivity as well as production of arecanut and cardamom do not show very steady and encouraging long term trends in Karnataka. In fact, it is disturbing to observe the stagnation in arecanut production as well as productivity in the State till recently. This seems to be a statistical problem, rather than a real stagnation in the crop economy. In other words, the method of data collection in the case of productivity of arecanut needs substantial revision. The trends in the area, production and productivity of cardamom at State level are shown in Graph 2.3.

Interestingly, cardamom and arecanut are concentrated

Graph No. 2.2

INDEX NUMBERS OF ARECANUT

AREA, PRODUCTION & YIELD

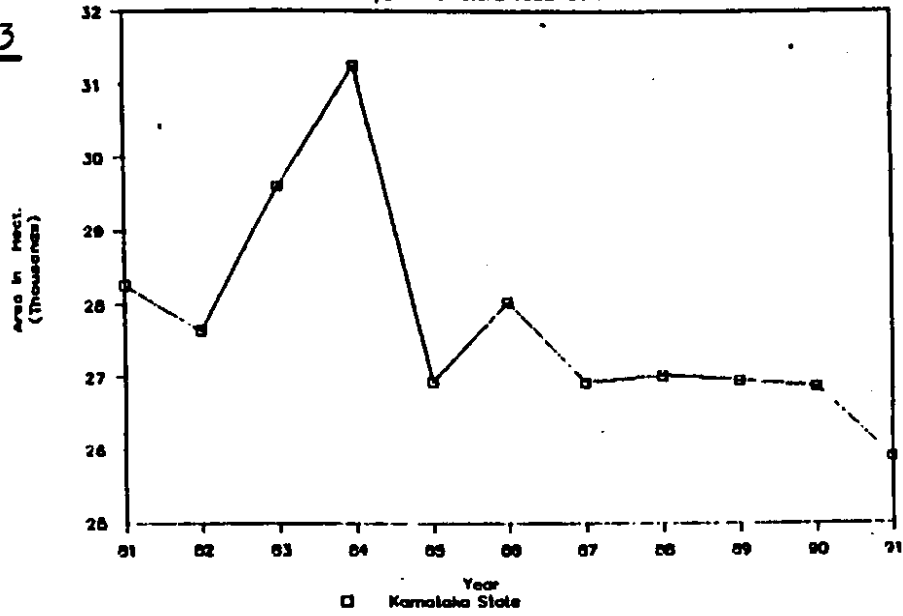


Area Estimates of Cardamum

Crops in Karnataka 1980-91

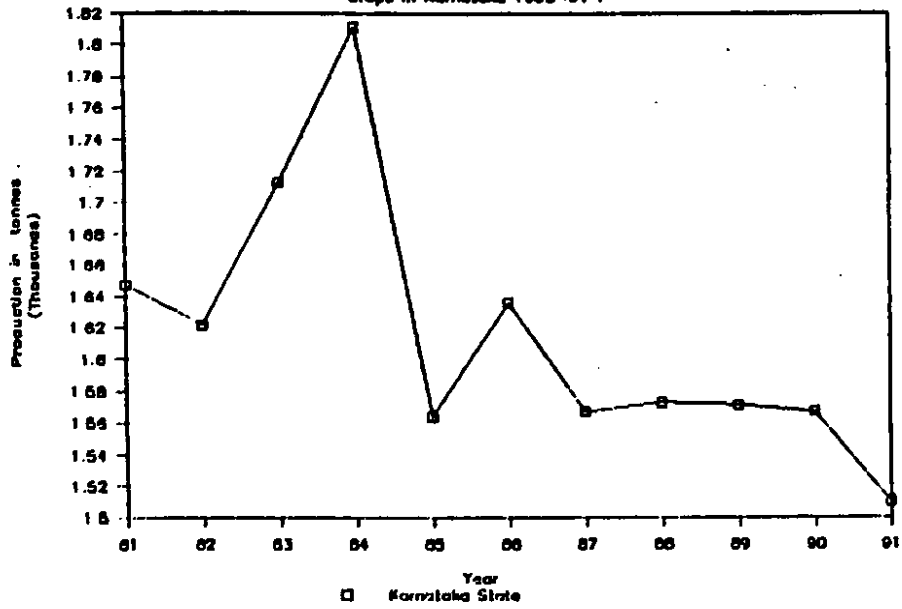
aph No. 2.3

37



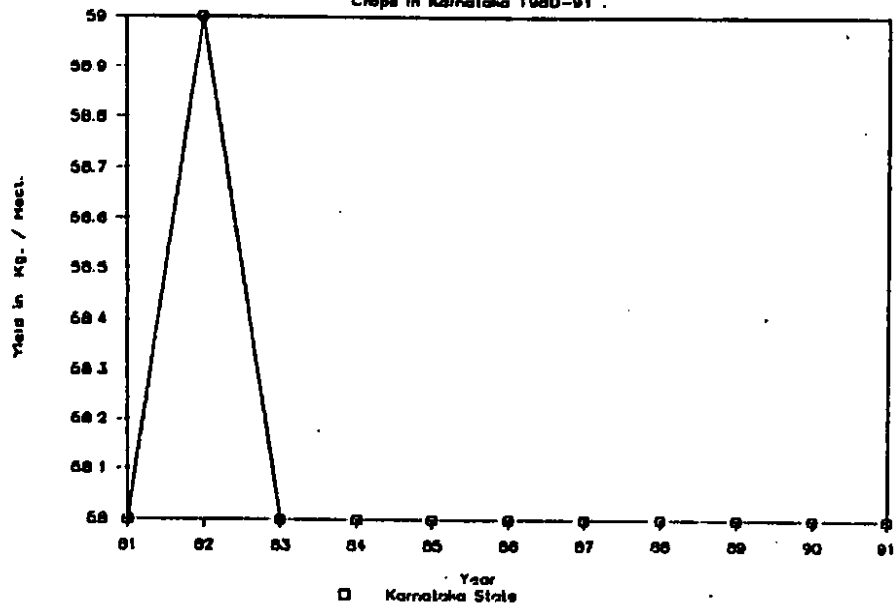
Production Estimates of Cardamum

Crops in Karnataka 1980-91



Yield Estimates of Cardamum

Crops in Karnataka 1980-91



only in a few districts of the State. The major cardamom growing districts are - Uttar Kannada, Dakshin Kannada, Kodagu, Chikamagalur and Hassan. Among these, Kodagu, Chikmagalur and Hassan are the prominent districts growing cardamom. The trends in area production and productivity of cardamom in these districts are shown in Graph 2.4. It can be seen that the area is almost same in Uttar Kannada and Hassan in the last decade, but Kodagu and Dakshin Kannada are showing declining trends in area. The area trends are clearly reflected in production because the productivity levels have been almost constant in the decade. In Kodagu, the yield per hectare of cardamom for every year in the decade 1981-91 is reported as 63 kgs. per hectare*. The same is true for Hassan Chikmagalur, Dakshin Kannada and Uttar Kannada. Therefore, the stagnation in yield seems to be more a statistical problem than real.

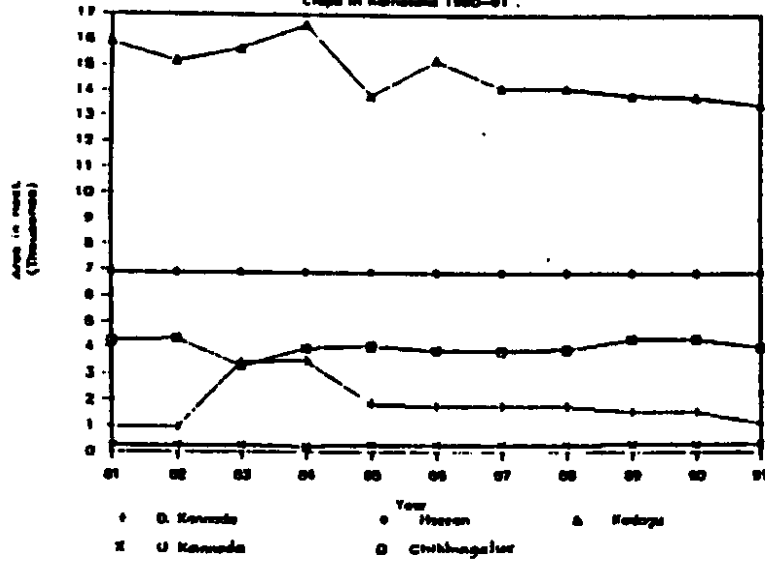
Unlike cardamom, arecanut plantations are common site even in 'Maidan' region of the State, though it is largely concentrated in 'Malnad' and 'Coastal' regions. Tumkur, Mysore, Kolar, Chitradurga and Bangalore districts also have sizable area under arecanut apart from the Uttar Kannada, Dakshin Kannada, Chikamagalur, Kodagu and Hassan districts.

* Data obtained from Fully Revised Estimates of Area, Production and Average Yield for various years published by Directorate of Economics and Statistics, Government of Karnataka, Bangalore.

Graph No.2.4

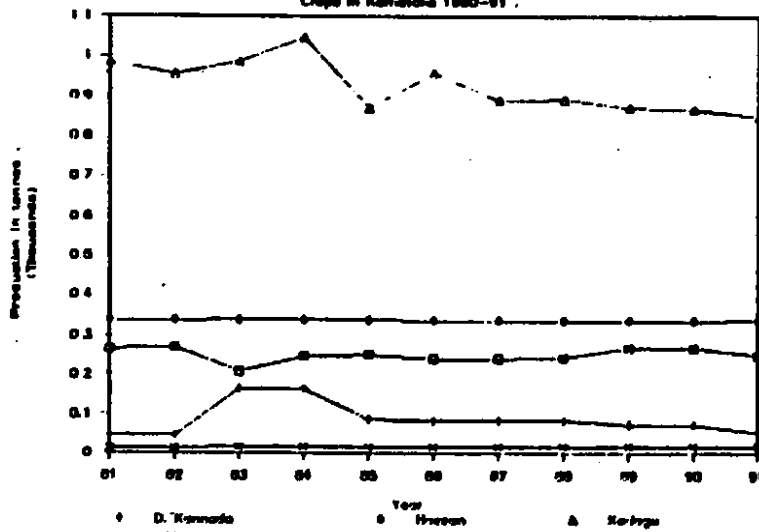
Districtwise Area Estimates of Cardamum

Crops in Karnataka 1980-81 .



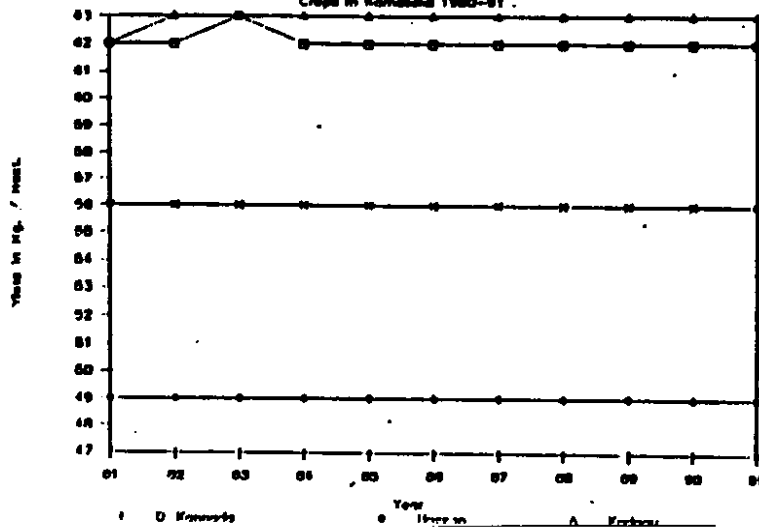
Districtwise Prod Estimates of Cardamum

Crops in Karnataka 1980-81 .



Districtwise Yield Estimate of Cardamum

Crops in Karnataka 1980-81 .



The trends in area, production and productivity of the crop in these districts have shown complete stagnation till 1933-89 and a sudden spurt after that. The reasons are more statistical than economic. Therefore, the complementary as well as competing nature of arecanut with cardamum elludes any serious analysis. The districtwise trends in area, production and productivity of arecanut are shown in Graph 2.5.

2.5 : Problems of Marketing in Karnataka
: Analysis with Special Reference to Cardamom.

2.5.1 : Agricultural Marketing Administration :

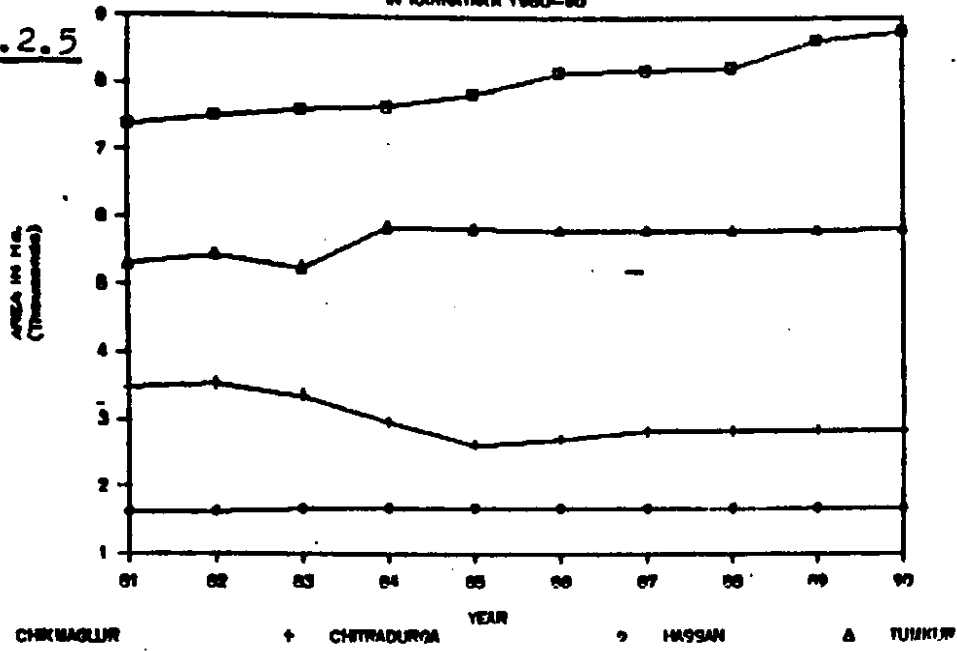
Agricultural marketing structure in Karnataka is a two pronged integrated vertical administrative organisation. The regulated markets and agricultural produce marketing committees forming the lowest rung in the structure. The Department of Agricultural Marketing (DAM) governs the entire implementation of marketing activities in the State. This is controlled by a Director (DM) and supported by an Additional Director of Marketing (ADM). There are four important cells under the DM and ADM. The first one deals with all the matters relating establishment. This cell has a Research Officer to look into the analytical marketing problems. Entire statistical data is maintained here by the Statistician. There are other three cells namely

DISTRICTWISE AREA OF ARECANUT

IN KARNATAKA 1980-89

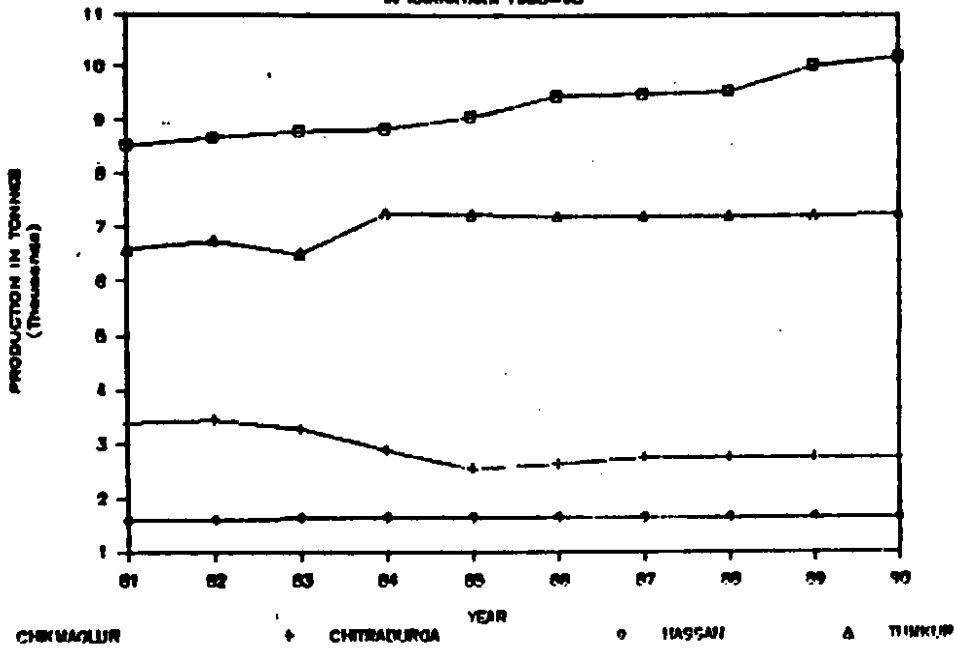
Graph No.2.5

43.



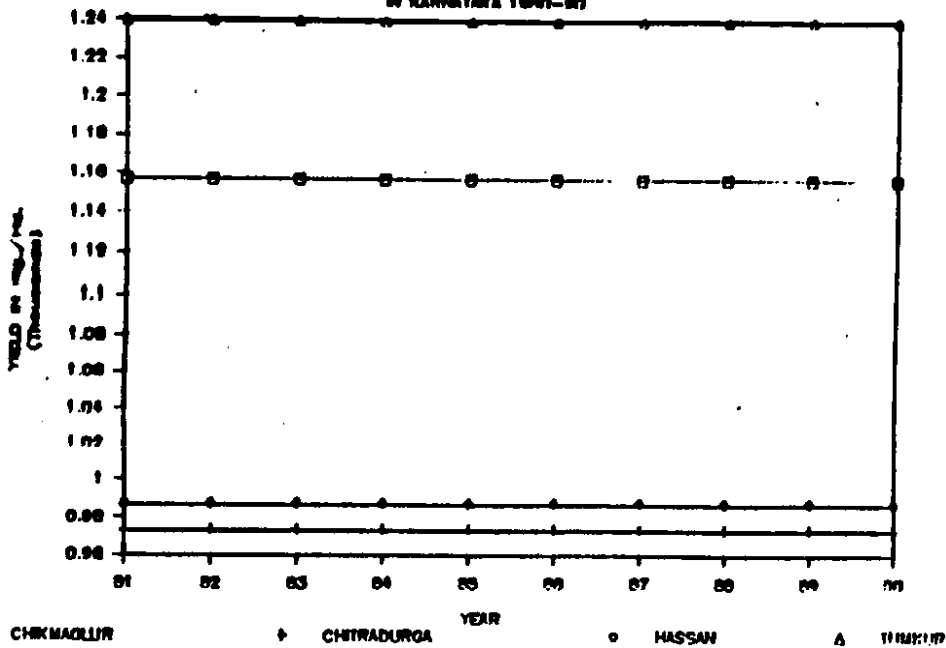
DISTRICTWISE PRODUCTION OF ARECANUT

IN KARNATAKA 1980-89



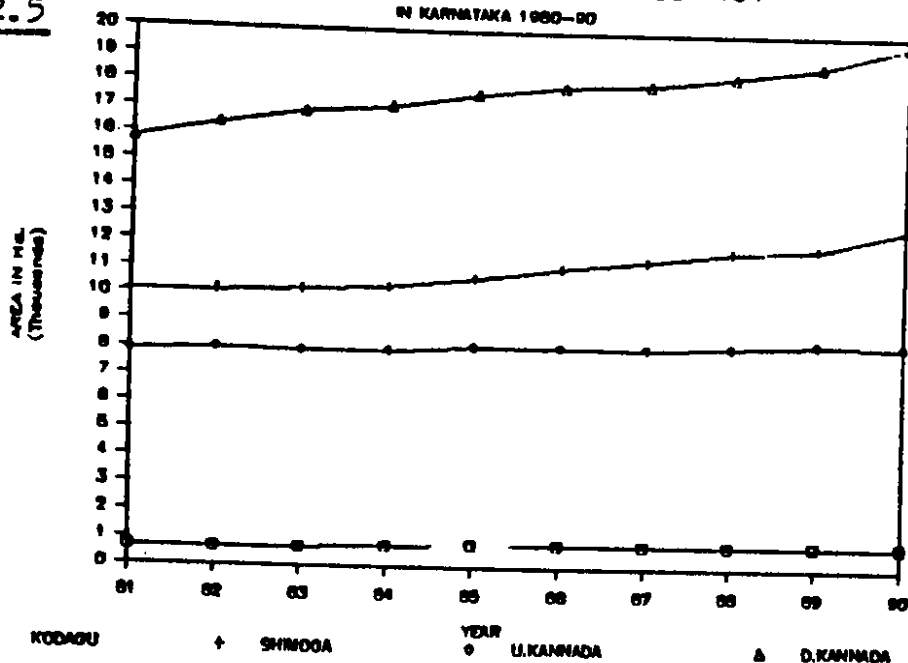
DISTRICTWISE YIELD OF ARECANUT

IN KARNATAKA 1980-89



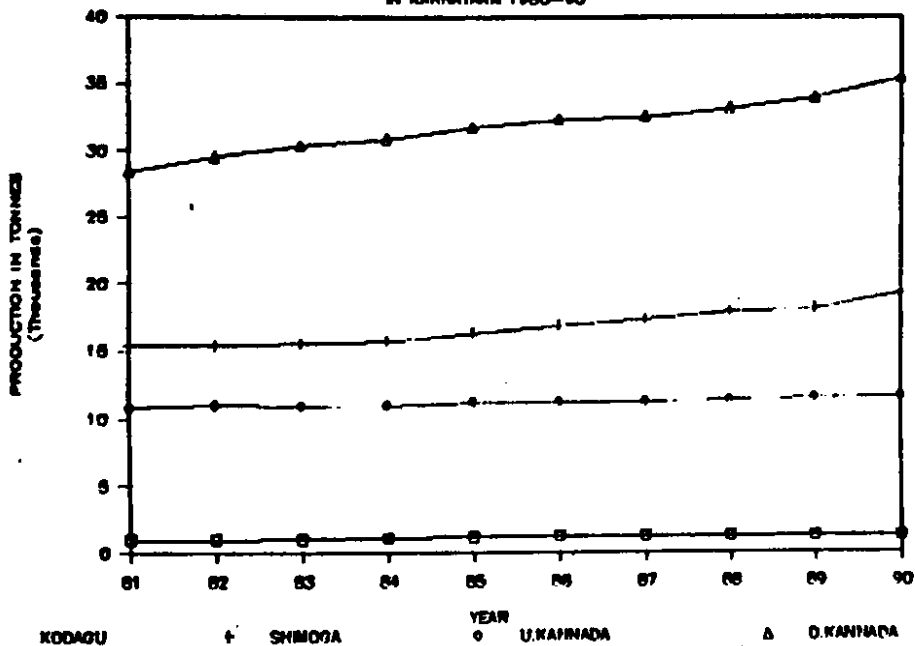
DISTRICTWISE AREA OF ARECANUT

IN KARNATAKA 1980-80



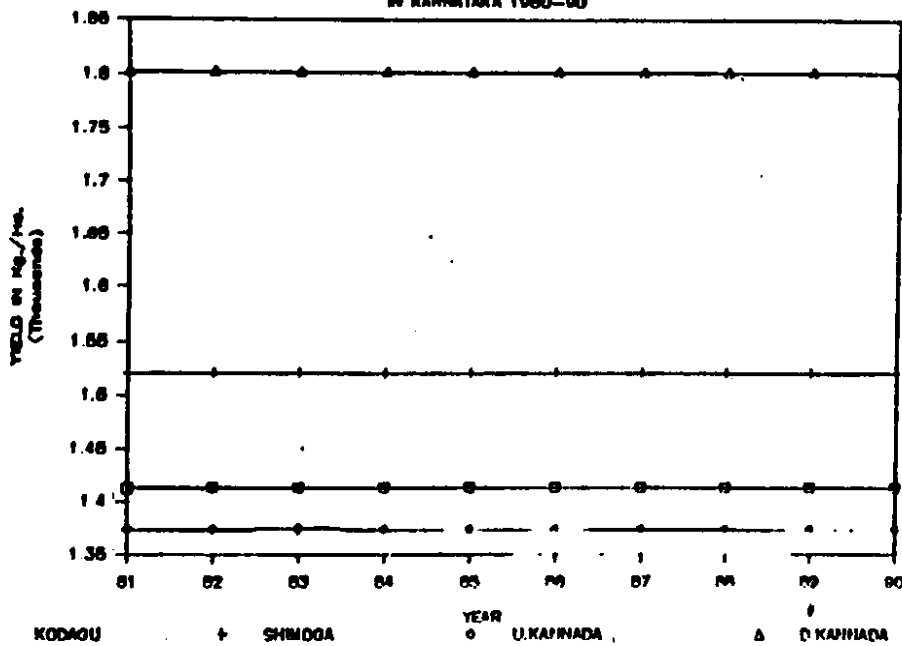
DISTRICTWISE PRODUCTION OF ARECANUT

IN KARNATAKA 1980-80



DISTRICTWISE YIELD OF ARECANUT

IN KARNATAKA 1980-80



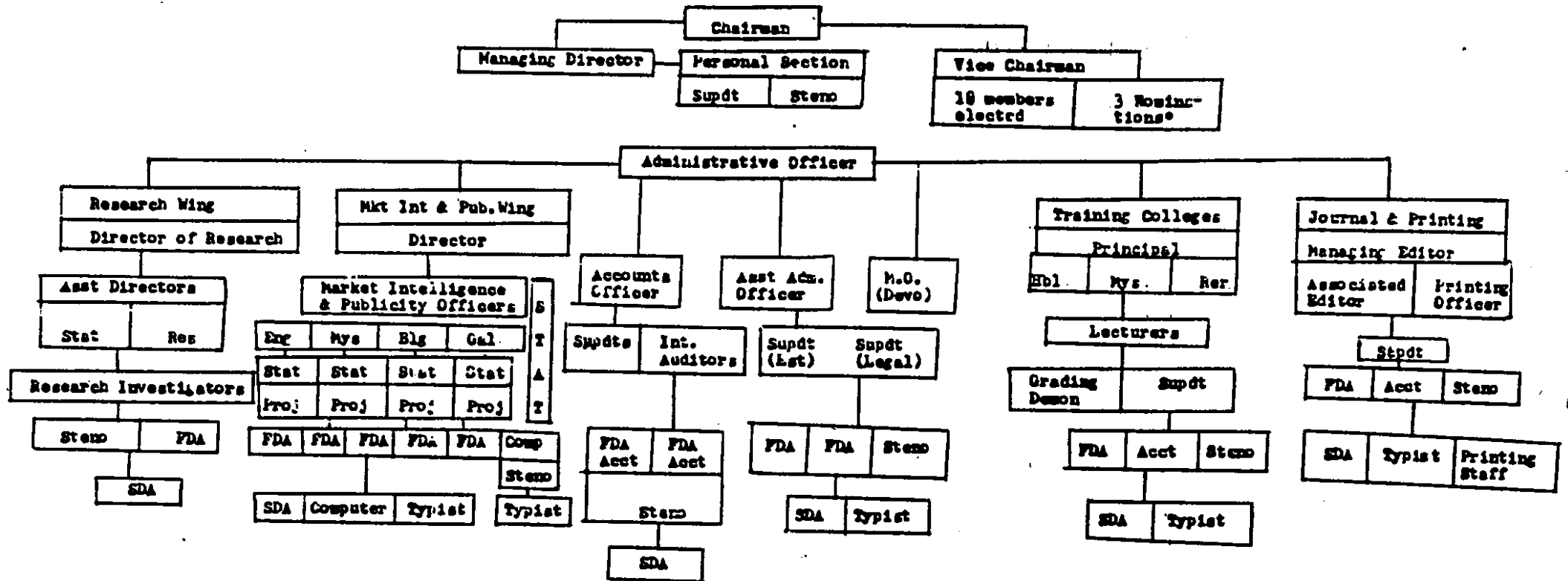
Auditor, Enforcement and Engineering to support the administration of the Marketing activities.

The implementation of Karnataka State marketing act at division level is controlled by Joint Directors of Marketing (JDM) at each division. There are four such divisions in Karnataka namely:- Bangalore, Mysore, Belgaum and Gulbarga. These cover five, six, four and four districts each as shown in the administrative chart (Figure 2.1). There are 120 Agricultural Produce Marketing Committees (APMC) working under these four divisions. It is interesting to observe the clustering of these in Belgaum division followed by Bangalore. The Department of Marketing however, does not participate in direct marketing activities and mostly supports the implementation of the State policies.

The Karnataka State Marketing Board (KSMB) which is an elected body takes care of the development aspects of Marketing (Figure 2.2). This has 13 elected members and 3 members are nominated. A Managing Director from the State Administration looks after the entire administrative responsibilities. The Karnataka State Marketing Board also has at its lowest supporting end Agricultural Produce Marketing Committees. The research, training, grading, technology transfer, infrastructural strengthening, finance for essential activities (like fencing, water, godown, weigh bridges etc.) and other promotional activities are taken up under the KSMB.

Figure No. 2.1:

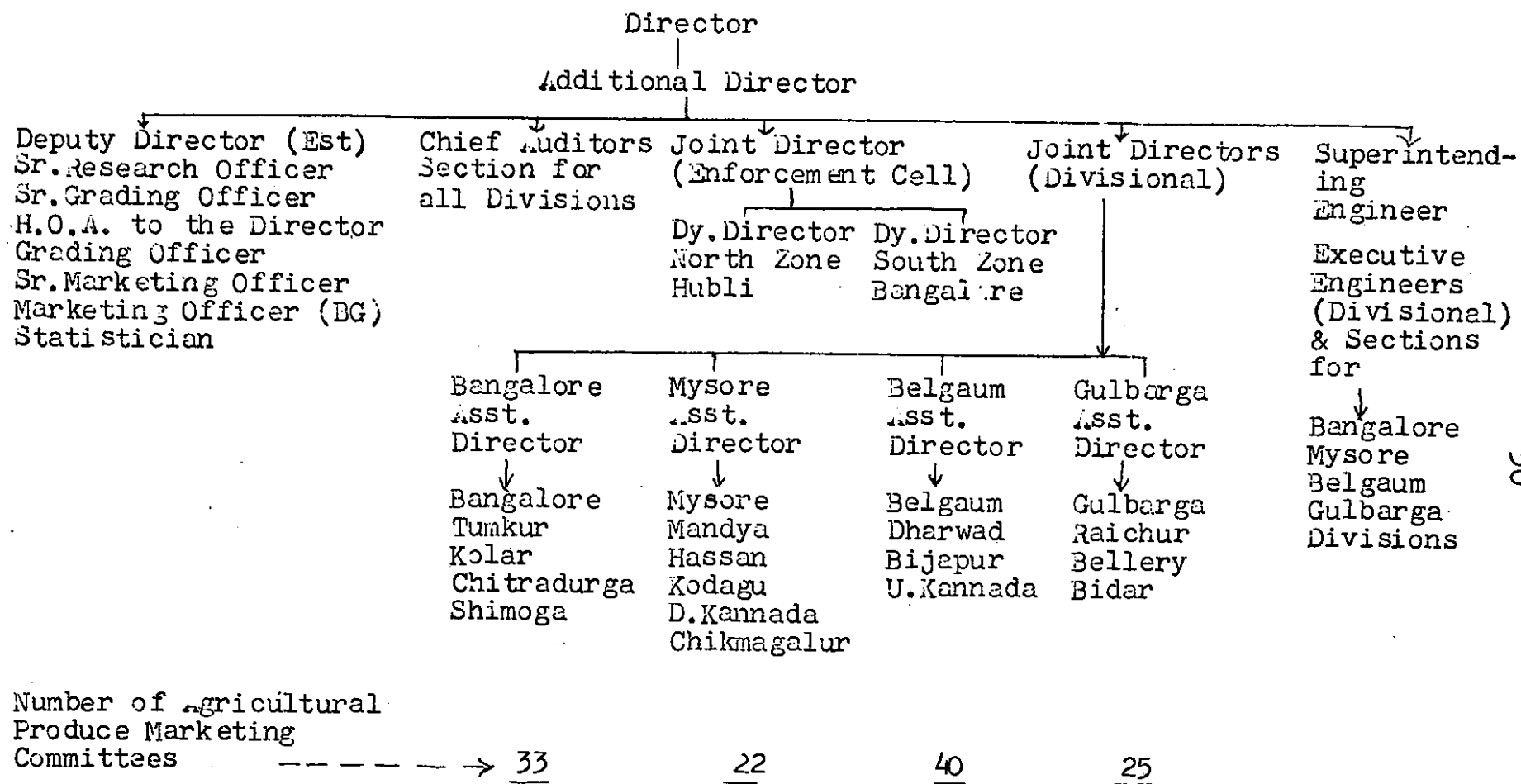
Set up of Karnataka State Agricultural Marketing Board



* The Secretary to Government, co-operation or his nominee, the Secretary to Govt. Agriculture or his nominee, the Director of Agrl. Marketing are the ex-officio members of the Board.

FDA ; First Division Assistant, SDA ; Second Division Assistant, Hbl ; Hubli, Mys ; Mysore
 Rer ; Raichur, Bng ; Bangalore, Blg ; Belgaum, Gul ; Gulbarga, Res ; Research

Figure 2.2 : Organisational Set-up of the Department of Agricultural Marketing



50

Source : Department of Agricultural Marketing, Govt. of Karnataka, Bangalore.

Thus the market activities are directly supported by KSMB. In other words, the market developmental activities are governed by KSMB whereas, its implementation is with the DM. The integrated approach of the two on many issues is always questioned. It was voiced by many of the officials from both the sides that a horizontal integration of these two wings would help to strengthen the structure. Thus, it seems essential that the structure be integrated to govern all the activities either in the same set up or through a co-ordinating committee. Another important aspect among the structural problems is that the apex level officers are not specifically trained in Marketing or Market Organisations. Thus, it is difficult for them to appraise the grass root problems.

Cardamom does not get included in the marketing structure above. The spices Board of Government of India deals with Cardamom marketing. But, the only possible influence of KSMB or DM on cardamom marketing, is the creation of 'marketing culture' in the region. Looking into this specific aspect, one can easily note the low density of marketing infrastructure in coastal Karnataka and this leads to inhibitions relating the market access for farmers. Many farmers prefer to sell their agricultural produce in the village itself through middlemen rather than getting into a process of marketing chain.

2.5.2 Marketing and Export of Cardamom :

Cardamom marketing is governed by the Spices Board of the Government of India. According to the Spices Board Act of 1936, 52 spices come under the purview of its activities. Of these 52, eleven spices are treated as important for export and from among these cardamom development and marketing is one of the major activities of the board. In fact, among the three statutory committees, one committee specifically deals with 'Research and Development of Cardamom'. The formulation and implementation of the project covers small and large cardamoms separately. Among the various schemes for cardamom development taken up by the board the important are :

- i. Departmental Nursery Scheme, ii. Certified Nursery Scheme, iii. Scheme for Polybag Nurseries, iv. Cardamom Replanting Scheme, v. Scheme for Integrated Development and Marketing of Karnataka Cardamom under Western Ghat Development Programme for small and marginal growers in Karnataka State, vi. Seed farms, vii. Cardamom Development Programme for Tribals, viii. Extension Advisory Scheme and ix. Construction of Curing houses. Several activities are taken under these schemes. The Board also concentrates on the agronomic, soil treatment, plant pathology and other technical aspects of cardamom.

Marketing department of the spices board is engaged in identifying market segments based on product, consumer

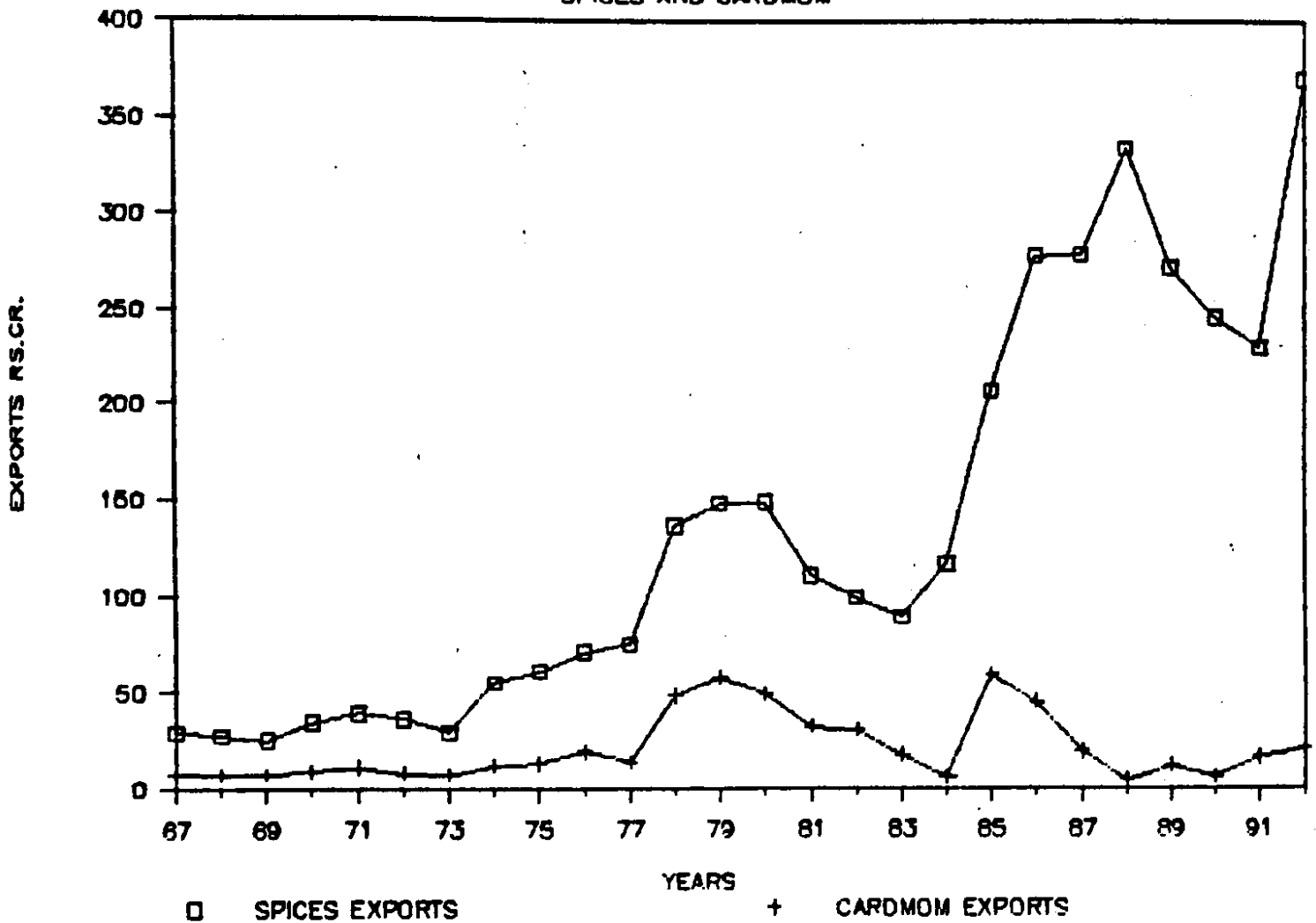
needs, competitor's effectiveness and regional spread. Cardamom Licensing and Marketing Rules (1987), were introduced with a view to streamline the system of marketing in general and bringing about control over auctioneers, dealers and exporters. Among other market promotion functions the Spices Board issues four types of licences/certificates namely : (i) Cardamom Dealer Licence, (ii) Cardamom Auctioneer Licence, (iii) Certificate of Registration as Exporter and (iv) Registration-cum-Membership Certificates to Exporters. The market intelligence officers have been posted in various important marketing centres to collect information and process it periodically. The licensed auctioneers conduct weekly auctions during the harvesting seasons in the production tracts/ assembly centres on particular days as approved by the Board and as per the conditions/directions issued. In Karnataka, cardamom auctions are conducted at Sirsi, Madikeri, Sakleshpur, Siddapur, Kansur, and Yadalli. It is easy to infer from the above that the fixation of specific day for a auction and licensing of auctioneers would restrict the access of small growers to the market. This would finally result in increased leverage for middlemen in the process of marketing.

Export performance of spices during 1991-92 has been outstanding in terms of both quantity and value. The export earning through spices is about Rs. 362 crores during 1991-92 for more than 130 thousand metric tonnes of spices exported.

Graph No. 2.6

EXPORTS FROM INDIA

SPICES AND CARDMOM



There are wide fluctuations in the production and exports of cardamom. The fluctuations in the cardamom exports and that of total spices were almost on similar lines till 1934-35. But after that there was a clear break in the export of total spices and the share of cardamom in the export of total spices started declining (see Graph 2.6). In the first decade (1966-67 to 1976-77), the exports were almost constant and picked up to reach a peak during 1973-79. Further, the exports declined till 1983-84 and with the lone exception of 1984-85 the trend is not very encouraging. Does this indicate that the Spices Board could not influence the export scenario? / ^{or} the board could avert a further deterioration? The answer to the question would require analysis of international marketing trends especially of those countries which compete with Indian cardamom in the World market.

2.6 Summary :

Agricultural performance of the crop economy of Karnataka State is always above average in the cross-State perspective. The projected total demand for foodgrains in the State by 2001 is placed at 10.62 million tonnes consisting of 9.37 million tonnes of cereals and 1.25 million tonnes of pulses. It would not be difficult to achieve this in terms of cereals but for pulses the State is likely to face wider gap between demand and supply. Keeping in view the supply and demand projections the requirement of marketing

infrastructure is projected. This follows three approaches namely : (i) Based on per market turnover and projected supply of commodities at district level, (ii) Based on the carrying capacity of markets and projected supply, ^{and} (iii) Average scenario of the two keeping in view the feasibility conditions of the districts. It was noted that the marketing infrastructure needs to be substantially stepped up. The exercise indicates immediate attention towards Bangalore (rural), Dharwad, Raichur, Belgaum and Uttar Kannada districts.

Spices form quite an important sector in the crop economy of the State. But these are region specific. Especially, coastal region and the transition zone alone, contribute a large share of the spices output of the State. In the all India scenario, however, Karnataka is not the largest producer of the spices. The production growth in the two major crops (arecanut and cardamom) has been quite dismal in the State. In fact, the productivity has remained same over the last decade (1980-81 to 1990-91) for both the crops. Quite possibly, the behaviour is due to the methodology of collection of statistics, rather than the real stagnancy. Even the area figures collected by Directorate of Economics and Statistics and those from Spices Board have large divergences. For the year 1990-91 the area under small cardamom reported by Spices Board is 31,605 hectares as against 25,905 recorded by the State Directorate of Economics and Statistics.

Marketing administration in Karnataka involves two separate segments as in other States. The Department of Agricultural Marketing and the State Agricultural Marketing Board. The first one is vested with the responsibility of implementation of Karnataka State Agricultural Marketing Act whereas, the second organization deals with the developmental activities in marketing sector. Major issue in the analysis of the problems of organization was the horizontal integration of the two bodies, especially in the light of elected representatives on the Marketing Board and bureaucratic set up of the Department of Marketing. Further, the grading, training, infrastructure development and the related functions of the Marketing Board are at low key in the coastal regions.

Large proportion of cardamom production is exported through the Spices Board. The Board has three important statutory committees, of which Research and Development Committee for Cardamom handles important functions relating the crop. However, the export trends of the past ten years do not indicate significant growth for cardamom. It is rather a stagnated trend in cardamom production but likely to be picked up in the near future. The marketing procedure of the Board relating the auctioneers licensing and fixing days for auctions, indirectly gives scope for the small agents to purchase and store cardamom which is sold at proper time. This in turn, may reduce the returns to the farmers.

Table A-2.1 : Projections Based on Trends in Per Capita Production of Foodgrains

(Production in million tonnes)

		Projections with Assumption		
		A	B	C
1991-92	I	7.72	8.30	8.33
	II	7.69	8.76	8.29
1995-96	I	8.40	9.68	9.16
	II	8.33	9.54	9.04
2000-01	I	9.32	10.60	10.05
	II	9.09	10.33	9.79

Notes : 1) A, B, C indicate (A) with per capita production of 1984-85 as base; (B) average of 1960-61 to 1984-85 as base; and (C) average of the last five years as base.

2) I - Medium fertility with migration

II - Low fertility with migration.

Source : Karnataka Perspective Plan - 2001 (1983).

Table 4.2 : Demand Projections Based on the Average Intake of Different Foodstuffs (NIN)*

(In million tonnes)

Sr. No.	Item	Medium Fertility with Migration		Low Fertility with Migration	
		1996	2001	1996	2001
1.	Rice	5.41	5.86	5.33	5.71
2.	Wheat	1.58	1.71	1.56	1.67
3.	Bajra	0.40	0.43	0.39	0.42
4.	Jowar	1.32	1.43	1.30	1.40
5.	Ragi	0.54	0.58	0.53	0.57
6.	Maize	0.27	0.28	0.26	0.23
7.	Total Cereals	9.52	10.29	9.37	10.05
8.	Pulses	0.67	0.73	0.66	0.71
9.	Total Foodgrains	10.19	11.02	10.03	10.76
10.	Leafy Vegetables	0.24	0.26	0.23	0.25
11.	Milk	1.60	1.74	1.58	1.69
12.	Oil	0.19	0.21	0.19	0.21
13.	Sugar	0.21	0.23	0.21	0.22

Notes : 1) Separate figures for Rural and Urban Areas not given.

2) *Source: Nutrition News, National Institute of Nutrition, Nutrition, Vol.7, No.2, March 1986, Hyderabad (NIN).

3) Based on average intakes of foodstuffs for the period 1975-1980.

Sources : 1) Karnataka Perspective Plan - 2001 (1988)

2) R.S. Deshpande (1988).

Table 4.2.3 : Demand Projections of Foodgrains - 2001 : Population Assumption-I
(In million tonnes)

Item	Below Poverty Line		RURAL Above Poverty Line		Total		URBAN Below Poverty Line		URBAN Above Poverty Line		Total	
	A	B			A	B	A	B	Line		A	B
	1. Rice	2.02	2.64	1.02	3.04	3.66	1.31	1.43	0.81	2.12	2.24	
2. Wheat	0.18	0.24	0.09	0.27	0.33	0.32	0.39	0.22	0.54	0.61		
3. Jowar	1.82	1.61	0.62	2.44	2.23	0.29	0.18	0.10	0.39	0.28		
4. Bajra	0.03	0.07	0.03	0.06	0.10	0.002	-	-	0.002	-		
5. Maize	0.04	0.02	0.006	0.046	0.026	0.005	-	-	0.005	-		
6. Small Millets	0.06	0.10	0.04	0.10	0.14	-	0.005	0.003	0.003	0.008		
7. Ragi	1.27	1.27	0.49	1.76	1.76	0.21	0.01	0.007	0.217	0.017		
8. Total Cereals	5.42	5.94	2.29	7.71	8.23	2.14	2.16	1.22	3.36	3.38		
9. Gram	0.03	0.04	0.02	0.05	0.06	0.02	0.03	0.02	0.04	0.05		
10. Cereal Substitutes	0.04	0.03	0.01	0.05	0.04	0.001	0.001	neg.	0.001	0.001		
11. Total Foodgrains	5.49	6.00	2.32	7.81	8.32	2.16	2.19	1.24	3.40	3.43		

Notes : A - Demand for foodgrains for the population below poverty line to provide them diet of those who are 'just above poverty line'.
B - Demand for foodgrains for the population below poverty line to provide them diet of those who are 'well above poverty line'.

Sources: 1) Karnataka Perspective Plan - 2001 (1983).
2) R.S.Deshpande (1988).

Table 4 : Demand Projections of Foodgrains - 2001 : Population Assumption-II
(In million tonnes)

Item	RURAL			URBAN			Total			
	Below Poverty Line		Above Poverty Line	Below Poverty Line		Above Poverty Line	A	B		
	A	B		A	B					
1. Rice	1.96	2.56	1.00	2.96	3.56	1.28	1.40	0.79	2.07	2.19
2. Wheat	0.18	0.23	0.09	0.27	0.32	0.31	0.38	0.21	0.52	0.59
3. Jowar	1.77	1.56	0.61	2.38	2.17	0.29	0.17	0.10	0.39	0.27
4. Bajra	0.03	0.06	0.03	0.06	0.09	0.001	-	-	0.001	-
5. Maize	0.04	0.01	0.006	0.046	0.016	0.004	-	-	0.004	-
6. Small Millets	0.06	0.10	0.04	0.10	0.14	-	0.005	0.003	0.003	0.003
7. Ragi	1.24	1.24	0.48	1.72	1.72	0.20	0.01	0.007	0.207	0.017
8. Total Cereals	5.27	5.77	2.25	7.52	8.02	2.09	2.11	1.19	3.23	3.30
9. Gram	0.03	0.04	0.02	0.05	0.06	0.02	0.03	0.02	0.04	0.05
10. Cereal Substitutes	0.04	0.03	0.01	0.05	0.04	0.001	0.001	neg.	0.001	0.002
11. Total Foodgrains	5.34	5.34	2.27	7.61	8.04	2.11	2.14	1.21	3.32	3.34

Notes : A - Demand for foodgrains for the population below poverty line to provide them diet of those who are 'just above poverty line'.
B - Demand for foodgrains for the population below poverty line to provide them diet of those who are 'well above poverty line'.

Sources: 1) Karnataka Perspective Plan - 2001 (1983).
2) R.S. Deshpande (1988).

Table A_{2.5} : Projected Levels of Productivity and Production:
2001 A.D.

Sr. No.	Crops	Average Productivity of 5 yrs. Ending 1933-84 Kg/ha	Projected level of productivity with		Projected level of production in million tonnes with	
			Moderate Growth Rates	High Growth Rates	Moderate Growth Rates	High Growth Rates
1.	Rice	2036	2376	3374	3.36	5.20
2.	Ragi	1203	1376	2354	2.40	3.00
3.	Total Jowar	340	1310	1702	1.78	2.31
4.	Bajra	416	759	903	0.61	0.72
5.	Maize	2683	4563	13298**	1.35	1.47 (3.0)
6.	Wheat	625	1266	1633	0.55	0.71
7.	Total Cereals	1126	1756	2530	10.29	14.32
8.	Gram	465	608	394	0.25	0.37
9.	Tur	506	739	1080	0.33	0.45
10.	Total Pulses	334	599	305	1.10	1.48
11.	Total Foodgrains	970	1651	2034	12.71 (11.39)@	15.65 (16.30)
12.	Groundnut	738	88	943	0.77	0.33
13.	Cotton	113	163	270	0.17	0.27
14.	Sugarcane*	79	94	123**	21.06	22.40 (27.6)

- Notes: 1) * In tonnes per hectare.
 ** This level of productivity is too high and in the case of these crops the growth rates may decelerate. The actual projected figures are shown in the brackets.
 2) Base year for projection is 1933-34.
 3) @ Total of cereals and pulses.

Sources : As in Table A_{2.4}.

Table A.2.6 : Supply Projections at Different Levels of Growth Rates for 2001 A.D.

(In million tonnes)

Sr. No.	Crops	Average Production 1930-81 to 1934-35	Assumed rates of growth			
			3%	3.5%	4.0%	4.5%
1.	Rice	2.29	3.78	4.10	4.46	4.63
2.	Ragi	1.23	2.03	2.21	2.40	2.49
3.	Total Jowar	1.66	2.74	2.98	3.23	3.36
4.	Bajara	0.24	0.40	0.43	0.47	0.49
5.	Maize	0.39	0.64	0.70	0.76	0.79
6.	Wheat	0.19	0.31	0.34	0.37	0.38
7.	Total Cereals	6.15	10.16	11.04	11.98	12.43
8.	Gram	0.06	0.10	0.11	0.12	0.13
9.	Tur	0.17	0.28	0.31	0.33	0.34
10.	Total Pulses	0.55	0.91	0.99	1.07	1.11
11.	Total Foodgrains	6.70	11.07	12.02	13.05	13.55
12.	Groundnut	0.65	1.07	1.17	1.27	1.31
13.	Cotton	0.94	1.55	1.69	1.83	1.90
14.	Sugarcane	13.30	21.93	23.37	25.91	26.39

Sources: As in Table A.2.4.

CHAPTER III

PROBLEMS OF MARKETING : A MICRO-LEVEL ANALYSIS

3.1 Introduction

The problems of marketing are always crop and region specific. In Karnataka, the Malnad region is an agriculturally prosperous region and presents a picture of 'commercial crop' dominant economy. The export potential of the crops of this region is very high and provides good opportunity for growth. Largely, the economy is dominated by plantation crops (coffee, tea, spices, arecanut, coconut, etc.), followed by paddy, sugarcane and ragi. Sizable proportion of the area in this region comes under forests. The assured climatic conditions, fertile hill slopes, and groundwater availability have helped the agricultural economy. The undulating hill slopes and large area under plantations depict the rich agrarian traditions of Malnad region. But all this co-exists with large number of small and marginal farmers, who face quite a few problems in managing their crop economy. These problems can be grouped into five broad categories.

Firstly, the Malnad region has a number of plantation estates and thus, the size of ownership holding starts from less than a hectare to a few hundred hectares. This level of inequality gets reflected in the farmer's access to resources. Therefore, it is not surprising that this 'land of plenty' also shows patches of deprived clusters. Secondly, the major trend in the economy of this region is their dependence on commercial

crops and especially spices and plantations. Thus, a large number of small holders work as labourers in plantation. Thirdly, most of the economic forces are controlled by the plantation owners and therefore, the market for agricultural products is dominated by them. There are statutory commodity boards functioning as a buffer between the final consumer and the producers but these are also controlled to a large extent by the large owners. Fourthly, the quantum of production on the lands of these medium to marginal farmers is so small that they cannot even combine as a group. This shows their weak bargaining power vis-a-vis their stronger counterparts. Lastly the pattern of development of the infrastructure is such that these crucial groups always remained away from the gains in the true sense.

Given this brief background, we have spread our analysis of micro level data over the following objectives:

- i) To analyse the crop economy of the farmers from the study area in order to understand their market dependence.
- ii) To study their marketing behaviour, and gains out of the crop economy across different groups of land holding.
- iii) To study the marketed surplus function and identify the crucial determinants.
- iv) To understand the marketing process through different channels of marketing and their relative efficiency.

- v) To identify and enlist the problems of marketing at micro-level.

3.2 Crop Economy

As mentioned earlier, Chikmagalur and Kodagu are the core Malnad districts and hence, the crop economy is dominated by plantation crops. It can be seen from Table 3.1 that about 73 per cent of land owned in Kodagu is under plantation crops. This share is 64 per cent in Chikmagalur. The average size of holding is almost same in both the districts but Chikmagalur sample showed slightly higher average size of holding in the 'above 4.01 hectare' category. Kodagu has undulating terrain and this keeps the size of land limited. Irrigation facilities are also limited in the district and hence, it is not surprising that the sample depicts proportion of irrigated land just above 1 per cent. The proportion of irrigated area is about 8 per cent in Chikmagalur and the largest size class of holding having about 10 per cent land under irrigation. The climatic conditions of these two districts are such that there is hardly any need for development of irrigation. This has also generated a cropping pattern with plantation crops as a base. Paddy is an integral part of the cropping pattern and it is the main food crop of the region. But it is not paddy, which takes the largest share of area, cardamom and coffee are the crops dominating the cropping pattern of these two regions. In Malnad region, therefore, the entire agricultural economy revolves around the plantation crops. Only four crops share the total Gross Cropped Area.

The productivity levels of the three crops are presented in Table 3.2. The difference in productivity of paddy and cardamom across districts is not substantial. But the productivity of coffee differs widely across size classes and districts. The size-productivity relationship for coffee is direct whereas, for the other two crops, it is of mixed type. Among the Kodagu farmers, the size-productivity relationship is of inverted 'U' shape and for the other three cases, it is a 'U' shaped curve. Thus, the access to resources as well as the type of technology does not seem to be largely different across size classes.

The cost of production for these three important crops is shown in Tables 3.3, 3.4 and 3.5. The tables give cost of cultivation for the main crops, namely, paddy, cardamom and coffee for Chikmagalur and Kodagu districts of Malnad region. These are provided on a comparable basis across size classes of holding and the districts. The cost of production of paddy in Kodagu district ranges between Rs. 934 and Rs. 2467, bearing an inverse relationship with size of holding. The large farmers (with holdings above 4.01 hectares) spend a lower amount per hectare on paddy cultivation. In the Chikmagalur district, the average cost of production per hectare is slightly higher than Kodagu, but the farm households with size of holding below 4.01 hectare, spend slightly higher than their counterpart in Kodagu. The highest expenditure is incurred on farm yard manures followed by fertilizers, seeds and hired labour.

The cost of cultivation of cardamom is higher than that of paddy in Kodagu. But in Chikmagalur, the same is higher for

Table 3.1 : Land Utilisation Pattern of Sample Households

Sl. No.	Items	Kodagu				Chikmagalur			
		Upto 2 ha.	2.01 to 4 ha.	Above 4.01 ha	All	Upto 2 ha.	2.01 to 4 ha.	Above 4.01 ha.	All
1.	Average Size of Holding (in hectares)	1.55	3.40	7.82	5.64	1.61	3.23	11.55	5.64
2.	Proportion of Rainfed Area	40.00	26.47	25.02	25.97	61.38	46.46	19.42	28.07
3.	Proportion of Irrigated Area	0.00	0.98	1.59	1.43	2.76	0.88	10.00	7.80
4.	Proportion of Garden land*	60.00	72.55	73.39	72.60	35.86	52.66	70.58	64.13
5.	Proportion of Area under								
	a) Paddy	40.00	26.46	24.40	27.62	58.62	47.35	21.35	29.34
	b) Mulberry	-	-	-	-	2.76	1.33	-	0.50
	c) Cardamom	48.58	64.60	69.16	63.45	37.24	38.94	24.04	27.78
	d) Coffee	11.42	3.92	1.44	9.23	1.38	12.38	54.61	42.38

Note : * Not included in 2 and 3 above.

Table 3.2 : Productivity Per Hectare of Crops

Size Classes	Paddy (In Qntls/ha)	Cardamom (In Kgs/ha)	Coffee (In Kgs/ha)
(A) Kodagu			
Upto 2.00 ha	25.71	27.94	938
2.01 to 4.00 ha	24.72	46.30	563
Above 4.01 ha	25.25	36.63	825
All	25.23	36.96	775
(B) Chikmagalur			
Upto 2.00 ha	21.82	36.85	750
2.01 to 4.00 ha	33.95	44.06	1396
Above 4.01 ha	28.94	35.00	1458
All	28.24	38.63	1201

Table 3.3 : Cost of Production of Paddy

(In Rs.per hectare)

Sl. No.	Items	Kodagu				Chikmagalur			
		Upto 2 ha.	2.01 to 4.00 ha.	Above 4.01 ha.	All	Upto 2 ha.	2.01 to 4.00 ha.	Above 4.01 ha.	All
1.	Seeds	206.25	310.65	84.51	127.19	162.65	118.46	64.98	98.85
2.	Complex, Mix.	451.79	326.39	166.65	212.04	275.58	317.07	146.62	217.15
3.	Farm Yard Manure	1205.36	1231.48	488.20	652.73	841.18	1065.42	950.45	957.73
4.	Plant Protection Chemicals	86.96	93.06	56.57	64.28	44.71	43.69	28.49	35.75
5.	Own Labour	55.71	21.76	27.87	29.10	31.94	15.33	4.05	12.69
6.	Hired Labour	321.61	70.08	53.05	76.11	47.00	59.02	13.38	32.08
7.	Bullock Charges	139.29	77.78	57.75	66.94	52.35	34.58	8.11	24.03
8.	Other Charges	-	-	-	-	0.00	0.93	9.01	5.07
9.	Total Cost	2466.96	2131.20	934.60	1228.39	1455.41	1654.50	1225.09	1383.35

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Table 3.4 : Cost of Production of Cardamom

(In Rs. per hectare)

Sl. No.	Item	Kodagu				Chikmagalur			
		Upto 2 ha.	2.01 to 4.00 ha.	Above 4.01 ha.	All	Upto 2 ha.	2.01 to 4.00 ha.	Above 4.01 ha.	All
1.	Seeds	912.50	1947.18	398.56	686.77	414.35	246.95	144.47	204.93
2.	Fertilizers	232.35	277.64	232.97	242.91	128.24 (87.96)	114.63 (103.35)	209.94 (57.58)	177.77 (71.78)
3.	Farm Yard Manure	705.88	661.97	674.50	680.51	268.52	135.67	176.23	180.59
4.	Plant Protection Chemicals	26.47	45.77	17.70	23.01	42.13	43.29	74.59	63.22
5.	Own Labour	62.06	11.94	5.24	8.74	53.33	23.60	11.48	20.04
6.	Hired Labour	19.41	50.53	17.78	23.59	76.20	44.88	51.48	53.57
7.	Other Charges	-	-	-	-	22.22	13.41	90.78	64.35
8.	Total Cost (Rs.)	1958.67	2995.03	1346.75	1665.53	1004.99	622.43	758.97	764.47

Note: Figures in bracket indicate complex mix whereas those above are for total fertilisers used.

Table 3.5 : Cost of Production of Coffee

		(In Rs. per hectare)							
Sl. No.	Item	Kodagu				Chikmagalur			
		Upto 2 ha.	2.01 to 4.00 ha	Above 4.01 ha.	All	Upto 2 ha.	2.01 to 4.00 ha.	Above 4.01 ha.	All
1.	Seeds	62.50	187.50	281.25	260.42	175.00	41.67	53.08	53.03
2.	Fertilizers	2812.50	1875.00	344.23	610.83	587.50 (587.50)	395.83 (187.50)	719.50 (682.88)	705.98 (662.54)
3.	Farm Yard Manure	625.00	-	396.63	385.42	750.00	791.67	249.12	272.73
4.	Plant Protection Chemicals	468.75	-	19.23	47.92	-	72.92	57.53	57.95
5.	Own Labour	37.50	37.50	11.73	15.17	37.50	15.63	3.82	4.41
6.	Hired Labour	23.75	100.00	51.11	52.54	62.50	71.03	28.61	30.45
7.	Total Cost	4030.00	2200.00	1104.18	1372.30	1612.50	1388.75	1111.66	1124.55

Note: Figures in bracket indicate complex mix whereas those above are for total fertilisers used.

paddy. The difference in the latter case is larger in relative sense. On an average, Kodagu district farmers spend about Rs. 1665 on a hectare plantation of cardamom, but the same costs only about Rs. 764 in Chikmagalur. The difference in the cost of production arises mainly out of the variation in seed (plant material) and farm yard manure. The small farmers spend larger amount on the cost of cultivation of cardamom. There was hardly any evidence of a consistent direct or inverse relationship of the cost with size of holding.

Cultivation practices of coffee have certain subtle differences between the two districts. The farmers owning lands below 2 hectares from Kodagu district, spend highest on this crop. Their largest share of expenditure is on the fertilizers, which is certainly highest as compared to the other size classes and their counterparts from the neighbouring district. The cost of cultivation in the two districts range from Rs. 1111 to Rs. 4030. There is a clear evidence of inverse relationship between size of holding and cost of cultivation. This indicates that small farmers incur larger cost per hectare for the same components, pointing uneasily towards the differential access to input availability.

The analysis of cost of production indicates that there are variations across districts as well as by size class of holding. Among the three crops, coffee and cardamom are more cash intensive and the larger share of expenditure is on plant material along with fertilizers. But this investment also pays rich returns both in the case of cardamom and coffee. Almost every rupee invested in these two crops grows 2 to 10

fold depending on the type of farm and combination of inputs.

In order to analyse the relative economics of these crops (both across crops and different size group of holdings) we have computed the gross and net returns for both the districts across sample groups. The results are presented in Table 3.6. It is

Table 3.6: Gross and Net Returns from Crops

		(In Rs. per hectare)							
Sl. No.	Crops Returns	Kodagu				Chikmagalur			
		Upto 2 ha.	2.01 to 4.00 ha.	Above 4.01 ha.	All	Upto 2 ha.	2.01 to 4.00 ha.	Above 4.01 ha.	All
1 .	Paddy Gross	6429	6181	6311	6307	5174	8842	7481	7166
	Net	3962	4050	5376	5079	3719	7187	6256	5783
2.	Cardamom Gross	5529	9551	9567	8216	8342	9937	8324	8868
	Net	3570	6556	8220	6550	7337	9315	7565	8122
3.	Coffee Gross	9063	6188	7800	7684	4500	8375	8475	7207
	Net	5033	3988	6696	6312	2887	6986	7363	6082

evident from the table that gross returns per hectare of the crops range between Rs. 5,000 per hectare and Rs. 8,000 per hectare.

As expected, paddy shows the lowest returns per hectare as compared to cardamom and coffee. Cardamom tops in the scale of gross returns. The gross as well as net returns do not show any discernible size-productivity relation. Three instances can be noted with direct relationship between returns and size of holding. Similar relationship is noted in gross as well as in net returns of cardamom crop in Kodagu district and for coffee in

Chikmagalur. The economy of cash crops thus dominates the aggregate agricultural sector in this region. All this, however, is modulated by the market forces. In the quantitative terms, more than two-third portion of the agrarian economy depends on the market access and relative behaviour of different forces in the market.

3.3 Market Dependence and Marketing Process

Among the major crops grown in the region paddy is mainly used for home consumption, only the excess portion is marketed. But the entire production of cardamom and coffee is sold in the market. Thus, the farmers of the sample region totally depend on these two crops for their cash requirements. The problems of marketing in the context of these farmers, therefore, emerge mainly for these two crops. Even in the case of paddy, on an aggregate, above 15 per cent of the production is sold in the market. Sometimes, the marketing of paddy is also resorted to in the conditions of distress.

Paddy is a supporting crop, mainly grown for home consumption. The sample farmers from Chikmagalur allocate larger area for paddy as compared to those in Kodagu. Similarly, productivity in Chikmagalur is also higher as compared to Kodagu. We have presented here the last three years performance and the consistency can easily be noted from Table 3.7. Marketed surplus generated in Chikmagalur is higher as compared to Kodagu. It ranges between about one and half quintals to 17 quintals in Chikmagalur. But in Kodagu, the surplus is mainly available only in the highest size class of holding.

Table 3.7 : Productivity and Marketed Surplus of Paddy

Sl. No.	Item	Upto 2 ha.			2.01 to 4.00 ha.			Above 4.01 ha.		
		1988-89	1989-90	1990-91	1988-89	1989-90	1990-91	1988-89	1989-90	1990-91
KODAGU DISTRICT										
1.	Area under the Crop per household (in ha.)	0.62	0.62	0.62	0.90	0.90	0.90	1.95	1.95	1.95
2.	Productivity per hectare (In Qntls.)	24.10	25.71	25.71	25.42	22.69	24.72	25.88	25.99	25.25
3.	Marketed Quantity per hectare (In Qntls.)	00.00	00.00	00.00	0.11	0.54	0.27	13.46	14.47	8.13
4.	Proportion of Marketed Surplus (%)	0.00	0.00	0.00	0.46	2.37	1.09	52.01	55.68	32.20
5.	Average price Received per Quintals (In Rs.)	300.00*	250.00*	250.00*	300.00	250.00	250.00	188.00	248.00	250.00

(contd.)

Table 3.7 : (contd.)

Sl. No.	Item	Upto 2.00 ha.			2.01 to 4.00 ha.			Above 4.01 ha.		
		1988-89	1989-90	1990-91	1988-89	1989-90	1990-91	1988-89	1989-90	1990-91
CHIKMAGALUR DISTRICT										
6.	Area under the Crop per household (In ha.)	0.72	0.94	0.94	1.36	1.57	1.57	2.13	2.33	2.47
7.	Productivity per hectare (In Qntls.)	29.15	28.06	21.82	33.00	32.18	33.95	23.95	28.09	28.94
8.	Marketed Quantity per hectare (In Qntls.)	2.82	1.95	1.29	6.75	8.88	6.87	13.50	16.07	16.65
9.	Proportion of Marketed Surplus (%)	9.67	6.95	5.91	20.45	27.59	20.23	56.36	57.20	57.53
10.	Average Price Received per Quintal (In Rs.)	180.45	204.34	237.09	183.46	202.62	248.64	207.11	208.29	258.50

Note: * - This refers to reported price by the farmers in that group and not the actual price received.

An important question of the size-marketed surplus relationship can be taken up here. In both the districts, we have a clear evidence of direct relationship between the two. The elasticity of marketed surplus with area under the crop, is around 1 per cent even in the case of paddy. Another interesting observation from Table 3.7 is about the prices received by the farmers. It is clear from the table that the prices received for paddy in Chikmagalur bear a direct relationship with size of holding. In other words, the larger farmers receive better prices as compared to small and marginal farmers. In Kodagu, due to the absence of marketed surplus in the lowest size class of holding this relationship could not be worked out.

Details about cardamom marketing are presented in Table 3.8. Kodagu farmers allocate larger area to this crop as compared to Chikmagalur farmers. This is possibly due to the higher productivity of cardamom in Kodagu. The area under cardamom ranges from less than 1 hectare to about 5 hectares in Kodagu but it generally does not cross 3 hectares in Chikmagalur. The productivity of cardamom in Kodagu was down in 1990-91 as compared to the earlier two years. But except for the lowest size class of holding, the productivity of cardamom was always higher in Kodagu when compared with Chikmagalur. In both the districts, we did not find any strong and discernible size-productivity relationship for this crop. But the prices received by producers in Kodagu are directly related to size of holding which is not true in the case of Chikmagalur.

Table 3.8 : Productivity and Marketed Surplus of Cardamom

Sr. No.	Item	Upto 2.00 hectares			2.01 to 4.00 ha.			Above 4.01 ha.		
		1988-89	1989-90	1990-91	1988-89	1989-90	1990-91	1988-89	1989-90	1990-91
<u>Kodagu District</u>										
1.	Area under the crop per household (in ha.)	0.75	0.75	0.75	2.03	2.03	2.03	4.60	4.60	4.60
2.	Productivity per hectare (in kgs.)	34.26	31.18	27.94	84.86	67.78	46.30	74.27	57.16	36.63
3.	Marketed Quantity per hectare (in kgs.)	34.26	31.18	27.94	84.86	67.78	42.96	74.27	57.16	36.29
4.	Average Rate per kg (in Rs.)	144.44	163.33	191.87	156.40	185.83	202.08	181.85	201.78	242.14
<u>Chikmagalur District</u>										
5.	Area under the crop per household (in ha.)	0.51	0.60	0.60	1.13	1.20	1.14	2.24	2.49	2.56
6.	Productivity per hectare (in kgs.)	39.02	33.52	36.85	46.52	43.15	44.06	25.99	29.02	35.00
7.	Marketed Quantity per hectare in kgs.	39.02	33.52	35.46	46.52	43.15	44.06	25.99	29.02	34.24
8.	Average Rate per kgs. (in Rs.)	169.40	219.00	235.24	169.66	192.41	225.53	186.66	201.38	243.11

Table 3.9: Productivity and Marketed Surplus of Coffee

Sr. No.	Item	Upto 2.00 ha.			2.01 to 4.00 ha.			Above 4.01 ha.		
		1988-89	1989-90	1990-91	1988-89	1989-90	1990-91	1988-89	1989-90	1990-91
<u>Kodagu District</u>										
1.	Area under the crop per household (in ha.)	0.18	0.18	0.18	0.13	0.13	0.13	0.72	0.72	0.72
2.	Productivity per hectare (in kgs.)	938	813	938	625	625	563	659	707	825
3.	Marketed Quantity per hectare (in kgs.)	938	813	938	625	625	563	659	707	825
4.	Average Rate per kg. (in Rs.)	5.50	6.50	9.50	7.00	7.00	11.00	6.87	8.33	9.22
<u>Chikmagalur District</u>										
5.	Area under the crop per household (in ha.)	0.02	0.02	0.02	0.34	0.34	0.34	5.75	6.09	6.09
6.	Productivity per hectare (in kgs.)	1000	750	750	1667	1688	1396	1462	1417	1458
7.	Marketed quantity per hectare (in kgs.)	1000	713	750	1667	1688	1396	1462	1417	1458
8.	Average Rate per kg. (in Rs.)	5.72	5.70	6.00	4.20	5.82	6.00	5.62	5.78	6.00

The coffee marketing is more an organized marketing in both the districts. The entire produce is sold to Coffee Board and the Coffee Board is one of the efficiently functioning organization in Karnataka. The size-productivity, as well as the differential prices received by farmers do not have any systematic behaviour. The productivity is higher in Chikmagalur as compared to Kodagu. The differences in productivity can be attributed mainly to the efficient management of resources.

3.4 Marketed Surplus Function

In order to study the behaviour of marketed surplus, we tried an explanation of marketed surplus through regression analysis. This analysis was taken up only for cardamom mainly for three reasons. Firstly, paddy is grown mainly as a subsistence crop and therefore, it is only the remainder after home consumption is taken to market. Secondly, it is not a major commercial crop. Thirdly, marketing of coffee is organized entirely through Coffee Board and hence, this crop offers no scope for studying the marketing behaviour. Keeping this in view, we have restricted our analysis only to cardamom. For the purpose of the determinants of marketed surplus, we have used the following specifications :

$$MS = f(CH, DI, SH, TC)$$

$$NR = f(CH, DI, SH, TC)$$

where:

MS = Marketed surplus per hectare

NR = Net Returns received by the producer

CH = Type of channel of marketing

DI = Distance of the place of marketing

SH = Size of Holding

TC = Total cost of transport and marketing

Out of the equations with different combinations we chose the following equations:

KODAGU DISTRICT

Equation 3.1

$$\begin{aligned} MS = & - 2.7004 - 0.5326 DI + 14.7764 CH \\ & (0.18) \quad (0.66) \quad (1.22) \\ & - 0.6549 SH + 0.0027^* TC \\ & (0.94) \quad (4.05) \end{aligned}$$

$$R^2 = 0.34 \quad F \text{ value} = 5.91 \\ (4,44)$$

Equation 3.2

$$\begin{aligned} NR = & - 1.7694 - 0.1267 DI + 3.7811 CH \\ & (0.53) \quad (0.71) \quad (1.42) \\ & - 0.0085 SH + 0.0009^* TC \\ & (0.56) \quad (3.76) \end{aligned}$$

$$R^2 = 0.34 \quad F \text{ value} = 5.95 \\ (4,44)$$

CHIKMAGALUR DISTRICT

Equation 3.3

$$\begin{aligned} MS = & 3.1851 - 0.0007 DI + 6.5507 CH \\ & (0.48) \quad (0.0003) \quad (1.40) \\ & - 0.4077^{**} SH + 0.0007 TC \\ & (2.19) \quad (0.70) \end{aligned}$$

$$R^2 = 0.16 \quad F \text{ value} = 2.13 \\ (4,44)$$

Equation 3.4

$$\begin{aligned} NR = & 0.5537 + 0.0011 DI + 1.5533 CH \\ & (0.34) \quad (0.19) \quad (1.35) \\ & - 0.0097^{**} SH + 0.0001 TC \\ & (2.11) \quad (0.56) \end{aligned}$$

$$R^2 = 0.17 \quad F \text{ value} = 2.22 \\ (4,44)$$

- Notes: 1. Figures in brackets are t values.
2. *, ** indicate statistical significance at 1 and 5 per cent respectively

The equations do not indicate very significant determinants of marketed surplus as well as the net returns. Most of the variables turn out with statistically non-significant coefficients. The total cost of marketing shows a positive relationship with marketed surplus which is an expected result. The negative sign of the coefficient of the variable indicating distance of marketing (DI) is quite intriguing. Though the coefficient is not statistically significant, it indicates larger surplus sold at lower distances or vice versa. Similarly, the size of holding also shows a curious negative sign. The results of both the districts are almost similar except the coefficient relating size of holding emerges with a positive sign in equations 3.3 and 3.4. This means that larger marketed surplus is available with the small farmers and therefore, the policies need to be tuned in favour of this group to increase their net returns.

3.5 Marketing Process

Most of the problems of marketing generate in the process and the process of marketing can be understood through different components. Firstly, it is the place of sale that becomes an important determinant of marketing process. This decides the returns to marketed quantity. Moreover, the distance of marketing also assumes economic importance. The price received by the producer at a distant place must compensate for the transportation cost and still earn higher price than local market, only in this condition the farmer would prefer to sell at a distant place. Secondly, the important component of the

process is the type of purchaser. In the absence of a proper channel, the small vendors and middlemen make good amount of margins. Thirdly, the marketing institution also makes a large difference. Lastly, in the case of cardamom the processing units or facilities can cause a difference in quality and therefore processing also becomes one of the important criteria.

Proportion of farmers marketing cardamom by their place of sale are reported in Table 3.10. It can be seen from the

Table 3.10 : Proportion of Households Marketing Cardamom by Place of Sale

Sl. No.	Size Class of Holding	(in per cent)				
		Kodagu		Chikmagalur		Both *
		Local	Outside	Local	Outside	
1.	Upto 2 ha.	8	10	16	2	14
2.	2.01 to 4.00 ha	-	24	-	6	22
3.	Above 4.01 ha.	6	52	4	16	18
	All	14	86	20	24	54

Notes: 1. * These households sold some portion of the produce in local market and the remaining outside the village.

2. Two percent households did not have any marketed surplus in Chikmagalur district.

table that largely the producers prefer to sell the output outside the village and at distant places. But the immediate cash requirement at times compels the producers to sell the produce locally. The local markets are usually dominated by local petty vendors (usually called Kaka) who work as middlemen.

For outside the village sales, distance becomes an essential factor.

Proportion of farmers by their distance of sale point market is shown in Table 3.11. Fourteen per cent of the

Table 3.11 : Proportion of Farmers in Different Size Classes of Holding by the Distance of Cardamom Market

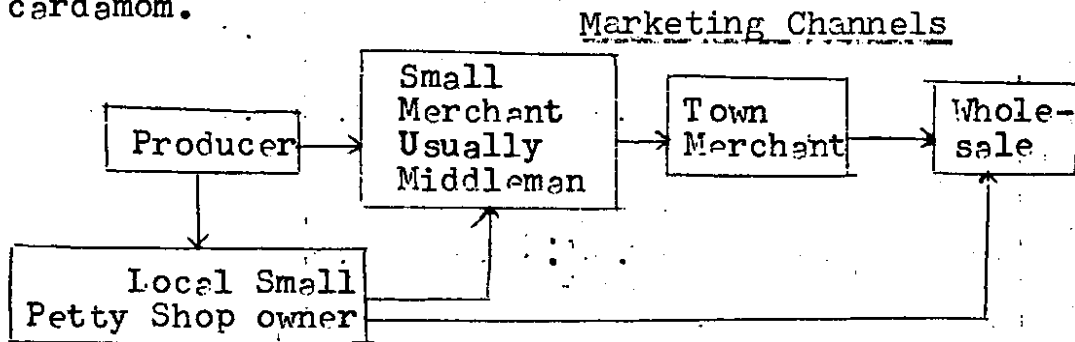
(In per cent)					
Sl. No.	Size Classes	Local	Below 10 kms.	10 to 20 kms.	Above 20 kms.
<u>KODAGU DISTRICT</u>					
1.	Upto 2.00 ha.	8.0	-	10.0	-
2.	2.01 to 4.00 ha.	-	-	24.0	-
3.	Above 4.01 ha.	6.0	2.0	48.0	2.0
4.	All	14.0	2.0	82.0	2.0
<u>CHIKMAGALUR DISTRICT*</u>					
5.	Upto 2.00 ha.	18.0	-	8.0	8.0
6.	2.01 to 4.00 ha.	-	-	8.0	20.0
7.	Above 4.01 ha.	2.0	-	12.0	22.0
	All	20.0	-	28.0	50.0

* Two per cent households in Chikmagalur did not have marketed surplus.

producers from Kodagu and 20 per cent from Chikmagalur sell their produce locally and more than 80 per cent of them prefer to go to distant places. The usual preferences are places between 10-20 kms. But Chikmagalur farmers travel even above

20 kms. to sell cardamom. There are usual purchasers of cardamom at the place of the nearest town and most of them sell finally to only a few merchants.

Generally there are three types of marketing channels of cardamom.



The first channel, is the sale through local petty shop owner which finally reaches to the town merchant. The second channel consists of the producer selling to the small merchant (either local or outside the village) who in turn reaches the wholesaler through the town merchant. The third channel is the direct sale by the farmer to the town merchant.

Table 3.12 presents the proportion of produce sold through these three channels. It is quite clear from the table that the largest share of the produce from Kodagu is sold locally by small number of farmers. But at the same time, good number of farmers travel long distance with small quantities. This is an extremely perplexing result and only possible if the farmers are going to distant markets for reasons other than the selling of cardamom. The producers of Chikmagalur district, however, sell the larger portion of the produce outside the local market. One of the probable reasons for the local sale of the produce is the inter-locking of the credit market with the product.

Table 3.12 : Proportion of Marketed Quantity by Type of Purchasers

Sr. Channels Cropwise No.	Kodagu				Chikmagalur			
	I	II	III	IV	I	II	III	IV
<u>1. Paddy</u>								
a) Rice mill	-	100.0	100.0	100.0	-	-	-	-
b) Private merchants	-	-	-	-	100.0	-	-	100.0
<u>2. Cardamom</u>								
a) Local Petty Vendor	90.1	100.0	100.0	99.7	26.2	-	-	4.2
b) Local Small Merchant	9.9	-	-	0.3	40.6	95.9	100.0	89.4
c) Both	-	-	-	-	32.1	4.1	-	6.2
d) Town merchant	-	-	-	-	1.1	-	-	0.2
<u>3. Coffee</u>								
a) Coffee Board	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: I, II, III and IV stand for size classes of holding as : Upto 2 ha.; 2.01 to 4.00 ha., above 4.01 ha. and all classes together, respectively.

market. Most of the farmers borrow money from the local purchaser or middlemen and in order to repay back these advances, they sell their product to these middlemen. This helps the middlemen to purchase at lower price and the farmers to get their cash requirement in the off season. It is not surprising, therefore, that 72 per cent of Kodagu farmers consider middlemen as inevitable (see Table 3.13). The large land owners also seem to be dependent on this channel. The most efficient channel, however, is the selling through town merchant. This channel is efficient on three counts. Firstly, it is the most cost effective channel which avoids the inter-locking with credit market. Secondly, the prices received in this channel are much higher as compared to the local market prices. Lastly, it helps the farmers to build an efficient input channel because most of the inputs are supplied from the town place.

Table 3.13 : Distribution of the Respondents by Their Responses to Inevitability of Middleman

Sl. No.	Size Classes	Proportion of Responses to the Question of Inevitability		
		Yes	No	No Response
<u>KODAGU</u>				
1.	Upto 2.00 ha	18.0	-	-
2.	2.01 to 4.00 ha.	16.0	4.0	4.0
3.	Above 4.01 ha.	38.0	18.0	2.0
4.	All Classes	72.0	22.0	6.0
<u>CHIKMAGALUR</u>				
5.	Upto 2.00 ha.	2.0	28.0	6.0
6.	2.01 to 4.00 ha.	2.0	24.0	2.0
7.	Above 4.01 ha.	-	30.0	6.0
8.	All Classes	4.0	82.0	14.0

It is seen from above that the efficient channel of marketing is selling through the town merchant, however, it is not the most preferred marketing arrangement. When asked to indicate their preferences for marketing arrangements, most of the farmers indicated that the entire marketing should be controlled by the Government-controlled Marketing Board. Even co-operative marketing agency did not receive a very favourable response from the respondents (see Table 3.14). The farmers' response to the question, that whether they have received fair price in their marketing of cardamom, suggest that none of them were happy about the prices received. But they also suggested that they cannot wait in anticipation of the price, because it is difficult for them to understand the future price fluctuations.

Most of the farmers sold their produce after processing except 2 per cent of the sample. They follow various methods of processing especially keeping in view the cost, effectiveness and the quantity of produce. Majority of the farmers prefer a local variety of hearth or drying chamber called 'Gundu' in Kodagu district. In Chikmagalur the drying in sunlight is quite common practice. There are only a few farmers who use the mechanical instruments for the purpose of processing. The decision criteria for not using the other methods seem to be guided only by three factors: (i) low cost, (ii) lower quantum of produce to be processed, and (iii) absence of processing co-operatives.

3.6 Problems of Marketing of Micro Level

Among the major problems of marketing, that became visible from the micro level data, we found seven problems

Table 3.14 : Distribution of the Respondents by their Preferences of the Type of Market for Cardamom

Indicated Preferences	Proportion of Household by Preferences							
	Kodagu				Chikmagalur			
	I	II	III	IV	I	II	III	IV
1. Free Market	2.0	4.0	4.0	10.0	2.0	2.0	10.0	14.0
2. Co-operative Market Agency	2.0	-	2.0	4.0	2.0	2.0	4.0	8.0
3. Government controlled Marketing Board	14.0	20.0	50.0	84.0	32.0	24.0	22.0	88.0
4. Agents/middleman	-	-	2.0	2.0	-	-	-	-

Note: I, II, III and IV stand for size classes of holding as : Upto 2.00 ha., 2.01 to 4.00 ha., Above 4.01 ha. and all classes together, respectively.

Table 3.15 : Distribution of the Respondents by the Type of Processing Facilities Utilized for Cardamom

Sr. No.	Type of Processing	Kodagu				Chikmagalur			
		I	II	III	IV	I	II	III	IV
1.	Gundu (Local Hearth) or Drying Chamber	6.0	12.0	22.0	40.0	2.0	24.0	6.0	32.0
2.	Sunlight	6.0	-	-	6.0	32.0	2.0	4.0	38.0
3.	Combination of 1 and 2	4.0	6.0	6.0	16.0	2.0	30.0	6.0	38.0
4.	Mechanical	-	-	-	-	-	-	4.0	2.0
5.	Decanter	-	2.0	-	2.0	-	-	-	-
6.	Combination of 4 and 5	-	12.0	22.0	34.0	-	-	-	-
7.	Dry-yard	-	-	-	-	-	-	4.0	4.0

Note: Three per cent of the sample households sold unprocessed cardamom. Of these 2 per cent belonged to Chikmagalur district and 1 per cent to Kodagu. Totals do not tally due to non exclusive nature of items 3 and 6.

significantly important. The analysis could not be attempted in terms of frequencies or proportion of responses because of the wide coverage and heterogeneity in conceptualization. Moreover, these problems have featured in our analysis earlier at different places. Here, we are attempting to analyse those in a proper sequence.

Firstly, given the small size of holding and crop specializations in the region, the marketed surplus generated is not substantial in quantity. Both the commercial crops under consideration are high value, labour intensive crops and since the quantum of marketed surplus is not high the farmers tend to sell their products at local market irrespective of the lower price. Moreover, for marketing of coffee the operations of Coffee Board are quite efficient and hence, in comparative sense cardamom receives lower importance.

Secondly, the periodicity of production does not augur very well with the periodicity of price fluctuations. The cash needs of the producers compel them to sell the produce to local traders without even a chance for bargaining. Hence, it was not surprising that most of the farmers sold their production in the local market (to the petty shop owner called Kaka).

Thirdly, all this takes place because of the inadequate dissemination of the market information upto the farm level. Even if such information is available, probably the time left for taking decision is quite limited or the production is already committed for sale.

Fourthly, all this is compounded by the level of infrastructure availability, be it processing, transport or information. The development of infrastructure is quite inadequate in the sample districts both because of undulating terrain and weather conditions. Most of the sample farmers had indicated that they did not receive fair price for their produce, but even then they continue to sell the products to local merchant. The most plausible difficulty is the non-availability of proper transport to the proper market.

Fifthly, all the sample households indicated that the fluctuations in the prices are large and could not be comprehended. The possibility of such situation comes only in an underdeveloped market and where the economic forces are not allowed a fair play. Thus, this points out towards the development of a proper marketing agency with support from Government.

Sixth important problem is the role of middleman or agent. While responding to the question of inevitability of middleman, the respondents have almost unanimously given a positive response. In other words, most of the producers felt that middleman is an essential component in the entire marketing process. But at the same time, they have also complaints about the non-receipt of remunerative price for their products. A clear synthesis of these directs towards the necessity of a proper micro-level marketing agency incorporated in the structure

Lastly, when enquired about the type of marketing agency needed for cardamom, most of them suggested that Spices Board

or a Government monitored agency will help to manage their marketing problems in a better manner if the spread of the centres is properly planned. Quite possibly this indicates the inadequacy of the network of Spices Board to reach the small cardamom growers. In that case, the second best alternative is to organize the marketing operations on co-operative basis. The possibility of small co-operatives initiated with the support of Spices Board would help in strengthening the network in the remote areas.

CHAPTER IV

SUMMARY AND CONCLUSIONS

4.1 An Overview

In the inter-State comparison of the post-independence performance of agricultural sector, Karnataka has always stayed slightly above the country average. This is a commendable performance on the background of the constraints faced by the State in terms of vast rainfed area and meagre irrigation facilities. In addition to this the cropping pattern of Karnataka is characterised by large number of crops starting from the spices grown in the coastal region to the inferior millets in/northern and southern parts of the State. The agricultural economy of the State thus faces multifaceted problems which begin with the proper production process, sustainable development and lead to a proper marketing strategy. Sizable contribution of commercial crops make this problem more acute.

Agricultural marketing problems include a large number of activities beginning from the input purchase and going through storage, transport, processing, administration to the consumer organisations. The severity of the problems involved is mainly due to six major factors. Firstly, the number of the commodities available for market is quite large but the quantity brought to the market by each individual is not sufficient for allowing him to bargain^{for}/a good price. The problem is caused due to the sub-divisions of holdings and

high density of small farms. Secondly, except some rare instances, these small producers do not form a group on co-operative basis, to market their products. Thirdly, the domination of foodgrains in the agricultural markets also leads to the phenomena of 'distress sale' as well as 'negative marketable surplus'. The behaviour of marketed surplus is always affected by these two factors. Fourthly, the density of regulated rural markets in the country and especially in the central India is very thin and thus forces large transportation cost on the producers. Fifthly, the role of middleman in the marketing of agricultural commodities is quite significant. This distorts the efficiency parameters as well as depresses the prices received by the farmers. Lastly, the agricultural produce markets face the problem of seasonality and storage of perishable commodities. A large number of small and marginal farmers market small quantities during harvesting season, when the prices are depressed. It is quite obvious that if for the same product, one group of farmers receives lower prices as against the other (obviously the group of large farmers having storage facility as well as time to wait for good prices), then the result would be inequitable net returns only due to marketing. In other words, the advantage gathered out of higher productivity per hectare on small/marginal farms is fretted away by the seasonality and/or presence of middleman.

In Karnataka the density of the marketing infrastructure is not really sufficient to meet the needs of the sector. Projections of crop production for main crops of the State and resultant requirement indicates ^{that} the shortfall is of the order

of more than 30 per cent. The density of markets is thin in some districts as compared to the others. The coastal districts of Karnataka, Dharwad and Bangalore (rural) are the regions where immediate attention needs to be focussed. The administrative structure of marketing in Karnataka has two separate segments, one looking after the implementation of the marketing policies and the other focussing on developmental activities for marketing. Internal integration of these two parallel structures (Directorate of Marketing & Marketing Board) would help in strengthening the role of market.

Specialised marketing agencies operate for quite a few commodities. Cardamom marketing is controlled by Spices Board because large amount of the produce is exported. Looking into the export trends of the last decade ending 1991, it is quite distressing to observe that the share of cardamom in the export of total spices is declining. This is not due to the price effect but due to the productivity of cardamom. In Karnataka the productivity of cardamom as well as arecanut has almost stayed constant in the last decade. The problem seems to be both statistical (collection of data) and crop specific (variety, nutrition requirements, white fly menace etc.). At micro-level the marketing infrastructure does not seem to help elimination of middleman and thus the marketing margins are quite high. The prices received by the farmers could be higher, if they come together in small groups to sell their products directly to the Board.

4.2 Objectives and Methodology

The study was undertaken to understand the problems of

marketing both at macro and micro level. At macro level our attention was focussed on the structure of marketing, adequacy of the spread and the State specific problems of marketing. Always the problems at micro level are crop specific. During the year 1990 the marketing of cardamom exhibited several problems and the officials of Karnataka State Government department of marketing suggested us to take up this problem for study in the State. The specific objectives of the present study are as follows:

- 1) To study the existing market structure and its functioning both at the State and micro level.
- 2) To make projections of production, demand, availability of market centres for all crops across the regions of the State.
- 3) To identify the emerging problems of marketing at macro as well as at micro level.
- 4) To study the marketing arrangements for the selected commodity and its related problems.

When we approached the State Government officials for their opinion to select a crop and region, it was suggested that cardamom marketing is facing several problems and hence this crop be taken up for the study. In Karnataka the districts of Kadagu and Chikmagalur being the two largest producing areas in terms of acreage under cardamom and quantity harvested; these two districts were selected. One block each was selected from the districts. After obtaining the list of growers, the sample was selected randomly with probability proportional to area. We selected fifty farmers from each of these two

talukas, thus in all 100 farmers were selected for micro level analysis.

4.3 Main Findings and Policy Implications

The main findings of the study are listed below.

1) Agricultural sector in Karnataka is gradually undergoing a change towards higher commercialisation. The growth rates of the sector in the post green revolution phase were quite impressive but the sector suffered slight setback during eighties. The stagnation of agricultural production during this phase has caused deep concern among administrators and academicians. Among the various causes discussed about stagnation, the remunerative prices and marketing seem to be the important.

2) The projection of crop output was attempted by the Expert Group on Perspective Plan of Karnataka. The demand for foodgrains is placed at 10.62 million tonnes by the year 2001. The supply scenario would match the demand in all the crop sectors except for pulses. Keeping in view the projected demand, arrivals in the market and carrying capacity of markets; it is estimated that about 100 more markets would be required in the State. The shortfall in the infrastructure is noted mainly in Bangalore (Rural), Dharwad, Raichur, Uttar Kannada and Dakshin Kannada districts.

3) Karnataka is one of the major spices producing States in the country. The share of the State in the area under total spices is quite significant, but its output share does not match the share of area due to low productivity. Among the spices, Karnataka's share in cardamom and arecanut is quite large.

4) At the country level the growth rates in area,

production and productivity of cardamom picked up only after 1978-79. But the production increased mainly due to the expansion in area under cardamom than productivity of the crop. In Karnataka, the productivities of cardamom and arecanut have stayed at the same level since 1980-81. Whatever growth in the production of cardamom achieved in Karnataka, was mainly due to the area increase.

5) The stagnancy in the productivity of cardamom in the State is quite disturbing and this is possibly due to four factors. Firstly, the method of collection of statistics for spices has not been as efficient as for the other crops. The statistics reported by Directorate of Economics and Statistics does not tally with that reported by Spices Board. Secondly, the price incentive for the crop is quite low for the growers because of the presence of middleman. Thirdly, the choicest new varieties of the crop are being introduced by the Spices Board only recently under Cardamom Development Programme. Lastly, the new pests and diseases are also affecting the crop largely and programmes are being initiated to tackle that.

6) Agricultural marketing in Karnataka involves two administrative structures namely Department of Marketing (DM) and Agricultural Marketing Board (AMB). The first one is vested with the responsibility of implementation of the Karnataka State Marketing Act, whereas, the second is an autonomous body created for developmental activities in the marketing sector. AMB has elected representatives with a Managing Director from the State Administration. The DM is fully under the State control. One major problem of the structure of marketing, is

the horizontal integration of these two structures. Secondly, the training of the lower level staff and integration at Agricultural Produce Marketing Committee level, are also important bottlenecks.

7) Spices Board is an autonomous body of Government of India working under the Spices Board act of 1986. It is vested with several responsibilities relating spices development in the country. Cardamom is one of the important component of the spices and hence the board has specific Cardamom Development Programme covering all the aspects of the crop. The marketing aspect of cardamom under Spices Board however, needs to be closely scrutinised on two counts. First, the licensing of auctioneer hinders the access of small farmers to a remunerative price. They are compelled to sell these to local vendors or middlemen who have a clear access to the auctioneers. Second, is that the dates of auction are fixed beforehand and this also leads to the same problem as above.

8) The export share of cardamom in the total spices is declining. It was at peak during 1984-85. This is mainly due to the stagnancy in productivity in small cardamom as well as increasing domestic demand.

9) The cardamom growers of Kodagu allocate larger share of cultivated area under cardamom but those in Chikmagalur accord relatively lower importance to the crop. The net returns out of cardamom are highest in Kodagu and Chikmagalur as against paddy or coffee. But the net returns are higher in Chikmagalur. The prices received by the farmers have direct relationship with the size of holding.

10) Marketed surplus per hectare has an expected direct relationship with the size of holding. The farmers prefer to sell cardamom outside the village, but 14 per cent of Kodagu and 20 per cent of Chikmagalur farmers prefer to sell their cardamom output in the village itself. The local markets are usually dominated by petty vendors (called Kaka). But most of them do not travel more than 20 kms., for marketing the produce. Largest proportion of the produce (about 90 per cent) is sold either to a local petty vendor or to local merchant.

11) There are two dominant channels of marketing. First one begins with the local petty vendor and reaches through him to the town merchant. The town merchant participates in the auction as a seller. The second channel begins with small merchant and again leads to the town merchant. The second channel is more remunerative. Kodagu farmers feel that middleman is inevitable in the total marketing process but Chikmagalur respondents do not feel so.

12) Most of the farmers preferred government controlled marketing board to handle the entire marketing with increased infrastructure. There is a total absence of collective processing of cardamom in the region. The lower level of productivity has caused this. There is inadequate dissemination of market information which causes fall in net returns.

The broad policy implications generating out of the study are as follows:

1) Marketing infrastructure in Karnataka needs to be strengthened in terms of its spread. The projected requirement

is about 500 markets in the State. The shortfall is noted mainly in Bangalore (Rural), Dharwad, Raichur, Uttar Kannada and Dakshin Kannada districts.

2) The stagnancy in productivity of cardamom in Karnataka requires immediate steps for taking up an integrated programme for cardamom development. The major components of the programme should be (i) proper varieties, (ii) pest and disease management, (iii) remunerative prices and market infrastructure, (iv) processing and export. These can be jointly taken up by Government of Karnataka with the help of Spices Board.

3) In order to have effective horizontal integration among the two apex marketing structures, it is necessary that some kind of administrative framework has to be worked out. In Maharashtra, the two structures are coordinated under Director of Marketing who belongs to the cadre of co-operative department. But Maharashtra has large number of marketing cooperatives unlike Karnataka. Therefore this problem needs further analysis especially by experts from public administration. At the same time the constraints relating marketing through Spices Board need further analysis under the purview of the act.

4) Spices Board should analyse the density of auctioneers and the seasonality of auctions in order to optimise the net returns to farmers. There should be at least one licensed auctioneer in every 10 sq.km. area, so that the farmers can have an easy access. This can be an important component of the cardamom development programme suggested above. Further, the dates of auction can be fixed well in advance so that the farmers can plan their marketing schedule.

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