

BUILDING UP OF AN EFFICIENT MARKETING SYSTEM TO OBVIATE THE NEED FOR LARGE SCALE STATE INTERVENTION IN KARNATAKA

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FOREWORD

Recent changes in economic policy and the liberalisation of the economy placed domestic market reforms high on the agenda in the present market restructuring. In this process of compliance to the requirement of the WTO and also dealing with the domestic market infrastructure, agricultural marketing continued to occupy an incidental place in almost all policy debates. The Agriculture Produce Marketing Acts passed by various States to mete out the inadequacies in agricultural marketing proved vain despite numerous amendments, as they were tuned to the situation prevalent then. Hence, the farmers remained deprived of enjoying the long-term benefits of these measures. The Minimum Support Price Scheme is in operation in Karnataka, but without any significant procurement and administrative infrastructure. In the present context of an open economy and with the emerging challenges on the fore, apprehensions are expressed about the impact of fluctuations in international prices on the domestic production, which in turn depends on the functioning of the domestic markets. In view of these, a study on examining the functioning of the domestic markets in the case of important commodities in Karnataka has assumed importance. It is also necessary to analyse the marketing environment of the farmer for want of improving the marketing efficiency.

The major focal point of the study being the marketing system in the State, attention has been paid to examining the deficiencies in the factors impacting market efficiency of a few important agricultural commodities like Paddy and Maize in selected districts of Raichur and Davangere and exploring the possibilities of adoption and developing of future markets in the case of these commodities. The study reveals that the major constraints confronting the farmers in marketing their produce is the lack of infrastructure facilities in the market yards and its neighbourhood. Procurement operations are observed to be almost absent with inadequate administrative support. Commission agents function at a low key and the concept of Commission agent appears to be quite different in Karnataka as they procure directly from the villages and perform an overlapping dual role of an agent and moneylender. Future markets could be one of the possibilities in the State and the study confirms that the farmers are unaware of these but may welcome the idea. Overall, the marketing system in Karnataka is lagging behind in all requisites like procurement, operating functionaries in the market and the institutional and infrastructure facilities in contrast to the systems existing in a few other states. The study suggests a few steps to re-energise the marketing system in tune with the changing economic environment. The study also suggests quite a few policy steps for developing an efficient marketing system. I believe that the results of the study will be of great use to the policy makers and academicians.

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PREFACE

Agricultural marketing in Karnataka, even though mostly regulated by the State, has a long way to go in its process of development as compared to the systems that exist in agriculturally forward states of Punjab, Haryana, Maharashtra, Andhra Pradesh and Tamil Nadu. The region of Karnataka is primordially not a grain-marketing region. It is only recently that a sizeable marketable surplus is finding its way to the formal marketing systems. Karnataka, as known has specialized in the marketing of commercial crops, and adequate provisions have been made to regulate and improve the marketing of these cash crops. In recent years, the increased production of foodgrains in the State has created a marketable surplus and the commercialization of these crops has been steered up. Hence, grain-marketing remains only an emerging field and not a well-developed one.

The markets in the State are scantily distributed throughout and the infrastructure and other facilities available in them are still pathetic. Even after five decades of continuous policy intervention, unscrupulous practices like late payment to the farmers, under-pricing, arbitrary grading and non-issue of sale slips by the traders continue to dog the markets. Lack of proper infrastructure in the market yards mounts congestion and create inconvenience to the farmers. Owing to these, the marketable surplus that arises does not reach the market yards and is sold outside the markets. Markets are yet to be developed by warding off these inefficiencies.

The procurement of foodgrains in Karnataka is also very low. There are only a few procurement agencies functioning in the State and these are confined to specific crops. The procurement of grains takes place only in the case of rice and that too through the processing mills. The Commission agents do not operate in the similar manner in which they operate in the other well-developed areas like Haryana and Punjab where a farmer necessarily depends on the commission agent for the sale of his produce. In Karnataka, the situation is quite contrary as the commission agents operate at a very low key and they procure from the farmers directly from the fields.

On the whole, the marketing system in Karnataka is rudimentary and comprehensive policies have to be implemented to develop it into an effective, efficient and well-developed one. This study thus examines the functioning of the domestic markets in

the case of important commodities in Karnataka to throw light into the inefficiencies confronting the farmer and to prescribe necessary measures.

The project has been co-ordinated by Prof. J. P. Singh of the Agro-Economic Research Centre, University of Delhi, and owes a great deal to his in-depth understanding of the subject. The study was totally conceived by him and he constantly supported it by steering all through the process. In fact, he provided material for the study right from the proposal, schedule and the scheme stages. It is our privilege to thank him for all his earnest efforts and also appreciate his deep understanding and wider foresight of the subject, which has contributed substantially to the study.

We are thankful to Mr. Vivekananda, who was in-charge of this project and had taken all pains to collect the necessary information required for the study. He retired in the meantime and in the process he handed over only the tables. The data collected were not handed over and hence, some issues could not be incorporated in the study. Therefore, the study has been carried out with these constraints as we did not have access to the original data.

At the Institute level, we thank our colleagues Dr. Bhende, Dr. Thippaiah, for suggestions and Mr. Muddu Krishna, Mr. Rajendra B Desai for their help at various stages. The study cut through many hurdles including crashing of hard disk containing the data and the missing tables. But, with help from Mr. Muddu Krishna and Mr Rajendra Desai we could complete the work. Mr. M.K. Mohan Kumar as usual carried out the word-processing unmindful of various drafts and illegible handwritten manuscripts. His help is gratefully acknowledged.

Needless to add that the errors of commission and omission are ours.

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CHAPTER I

INTRODUCTION

1.1 Market and The State

Sizeable amount of work in development economics literature has been devoted to the debate on the role of state as against the role of market as a catalytic institution in the aggregate development process. The debate began with the early theories of economic development, where it was argued that failure of allocation of investment to the deserving developmental sectors created structural imbalances in the process of development. A group of theoreticians blamed it on the failure of the state whereas, a few others held market responsible for that. One common understanding, however, which emerged in this debate was that the role of the state as against that of the market had to be pursued differently in the context of developing and developed world (Chenery and Srinivasan, 1989).

Recently, again, the debate came alive in the context of the process of liberalization, where it is argued that the role of the state should be minimised over time so as the market forces create a proper atmosphere for economic growth. It is currently believed that rational and most desirable resource allocation takes place through the market forces. We find a strong rejection of these views also. An inherent assumption of this argument is that the structure as well as quality of growth will be automatically taken care of, moreover, the aggregate process will help in correcting the distribution parameters. In view of this new thinking in the context of developing countries, it is essential to look into the basic tenets of the role of state and that of the market in the process of development in India. Anne Krueger (1990: p 22) while arguing on the platform of the symposium on the State and Economic Development concluded that *“At a general level there are innumerable questions as to how political and economic markets interact. At more mundane levels, there are endless opportunities for research, analysing the functioning of alternative policies and institutions, documenting and hopefully quantifying policy interventions, the response to them, and their evolution over time.”* But at the same time we find a strong opposition to this view emerging not only from the Indian academic field but vehemently supported by well-known development economists. In the words of Byres, *“The current orthodoxy, to the effect that ‘rolling back the State’ and the full blooded operation of markets are appropriate to India’s problems, lacks historical warrant*

and intellectual justification" (1997: p 37). This signifies that the scene of argument is not very clear in the minds of development economists, especially speaking in the context of India, viz., Pranab Bardhan, Terence Byres, Amit Bhaduri, Mrinal Datta Choudhury, Arvind Pangaria etc.

After the Second World War and with the emergence of strong socialist block, the role of State in the policy making in the developing countries became very strong. This was intense in the case of democratic countries and the countries that had achieved freedom during that period. The role of State was envisioned, as a body fully aware of the welfare needs of its constituents (Boeninger, 1991, p.268). This amorphous institution was visualised through a collective group of individuals representing various strata in the society. Therefore, it was quite natural to expect that these groups would have full knowledge about the welfare of the society at large and thus, the decisions taken by them would be welfare enhancing for the society. Under this assumption the process of 'Statisation' became very strong during the late 40s and was consolidated during the following decades. Till the mid-seventies, this process had concretised in the socialist countries as well as in the countries that were favourably placed with socialistic ideas. However, the failure of the State came to light when the bureaucratisation increased substantially in some of the countries and controls took an enormous form, creating huge transaction costs. In India, controls in terms of Government planning on one hand, and the myopic view of the peoples' representatives on the other, directed the State policies. As a result, the State policies lacked a long-term consistent directions and the belief that all sectors and sub-sectors of the economy could be maneuvered through plan allocations. Most of these directions were derived from the bodies, which were outside the country, and at times operated from the precincts of favourite themes of the people who mattered. The private sector initiatives in the process were curbed through controls and licenses. This helped consolidate the State's power but finally provided an undue advantage to the bureaucrats representing the State. Different levels and parts of the Government were poorly coordinating among themselves and that caused poor reading of the initial signals of failures. The controls also created lobbying, corruption and unproductive investment with full support from the State bureaucracy. The limitations of the State came to the fore during the early eighties and these were strongly put forward by various authors during that period. As Pranab Bardhan (1990: Pp 3) puts it, "The literature in development economics has now turned full circle from the unquestioning dirigisme of the early 1950s to the gory neoclassical accounts in recent years of the failures and disasters of regulatory,

interventionist states". The forces of development were formulated in such a way that even in the mixed economies the market operations were strongly influenced through the State policies (Regulated Market Act, Movement of Commodities, price dictations in factor and product markets, etc.).

1.1.1 A Systemic View and Failure Paradigm

In a systemic approach the state is visualised as the provider of basic public goods (merit goods) and organizes the production process through incentives and allocations while operating through monetary and fiscal policies. Thus, coordination becomes an underlined function of the state. But the failure of such coordination due to the emergence of transaction costs and rent-seeking attitude of the polity and bureaucracy together have undermined *ney* distorted the image of the State. More often, the distortions are recognised as the functional failures on the part of the State or the quality of the State. If the role of the state has to be defined clearly it comes out fewer than six important categories cross-classified in terms of the functions of the state (see, Table 1.1). Two broad aspects of the functions of the state pertain to its addressing to market failure and to the distribution parameters, keeping in view its role as a welfare State.

Table 1.1: Role of the State

Minimal Functions	Addressing Market Failure		Improving Equity	
	Providing Pure Public Goods Defense Law and Order Macro Economic Management Property Rights Public Health			Protecting the Poor Anti-Poverty Programmes Disaster Relief
Intermediate Functions	Addressing Externalities Basic Education, Market Infrastructure	Regulating Monopoly	Overcoming Imperfect Information Market Information, Insurance (Health, Life, Pensions). Financial Regulations, Consumer Protection	Providing Social Insurance Pensions, Family Allowances, Unemployment Insurance,
Activist Functions	Coordinating Coordinating/Regulating Private Activities Markets and Addressing Market Imperfections Cluster Initiatives			Redistributive Redistribute for Assets and Access to Resource

Source: Based on World Bank Development Economics Conference (1991) and Journal of Economic Perspective (1990).

These two broad aspects are cross-classified with three levels of function from a view point of intensity, viz., minimal, intermediary and activist functions of the state. In

this framework, the question does not remain to be state or market as the major or leading catalyst but the debate reflects itself in Ostrom's and Walker's framework of neither of the two playing leading role in a long term perspective.

The problems of the State intervention can be listed in the best possible manner under following categories:

- ↪ Individuals may know better about their requirement and preferences and state fails in aggregating such behaviour.
- ↪ State planning may increase the aggregate risk of failure by pointing every policy in the same direction. State may make bigger mistakes with little chance for on-line corrections.
- ↪ State centralised planning may be more rigid, inflexible and location non-specific.
- ↪ The institutions indicate incapability in administering a detailed plan.
- ↪ State may curb private sector's initiative through bureaucratic procedures.
- ↪ Organisations and individuals require incentives to work, innovate, control and allocate efficiently. Rewards or shocks of market cannot be replicated under the State control.
- ↪ Different levels and parts of State usually coordinate poorly. Lack of correcting signals and structural information mars the results of the interventions.
- ↪ Controls create lobbying, corruption, unproductive activities.
- ↪ Vested interests of bureaucrats, industrialists and rich can manipulate State planning, whereas rural planning may intensify and consolidate the power of interest groups.

Market, on the other hand, is usually visualised as an alternative institution that optimises the welfare function of the stake-holders through price mechanism. Behind the free market ideology, often, Adam Smith's famous quotation is given, viz., '*market having profit motives drive the economy to an efficient solution as if achieved with an invisible hand*'. It is strongly believed that markets as an invisible hand operates the economic forces augmenting welfare of all the players. The Pareto optimality in arriving at the optimal aggregate gains by optimising welfare of all the stakeholders became the theme behind market fundamentalism. It is argued that the interest of the stakeholders criss-cross each other to iron out the inefficiencies in the transactions and thereby the profits will be optimally distributed in proportion to the efforts of the individual members in the production process. Many challenged this view in no uncertain terms. Prof Stiglitz wrote very recently, "*The rhetoric of market fundamentalism asserts that privatisation will reduce*

what economists call the 'rent-seeking' activity of government officials who either skim-off the profits of government enterprises or award contracts and jobs to their friends. But in contrast to what it was supposed to do, privatisation has made matters so much worse that in many countries today privatisation is jokingly referred to as 'briberization'. If a government is corrupt, there is little evidence that privatisation will solve the problem" (2002:Pp 55). Markets thus have palpable problems and especially so in a country which has inadequate infrastructure. Inequalities in terms of non-players provide wrong signals emerging out of the market and such signals end up in either monopolistic or oligopolistic behaviour in the market. The market failures are usually not insured and thus the institutions are governed largely by the State bureaucracy, which remain inflexible thereby obtaining the worst out of the two domains of market and the State. The major reasons for failure of markets are listed hereunder:

- ↳ Externalities in terms of non-players are involved in the market but usually not highlighted.
- ↳ Market condition is usually Oligopolistic or Monopolistic.
- ↳ Increasing returns to scale operate in the market institutions. The larger the share, the larger is the control of the market forces. Thus big fishes dominate.
- ↳ There is hardly any insurance of market failures. – Future markets are far from being perfect.
- ↳ Market adjustments may move slowly and institutions largely remain inflexible.
- ↳ Information regarding the product and prices etc. is always imperfect and does not reach the stakeholder without some time -lag. This time -lag provides the best scope for manipulation.
- ↳ Individuals may not necessarily act to maximize anything explicitly.
- ↳ Government taxation is unavoidable and may affect the efficiency of the market.

In the context of the above arguments, it is essential to revisit the questions in a more pragmatic manner, specifically in the context of individual policy interventions. Indian state cannot be called as one among the strong states. Moreover, the kind of infrastructure that we have at our disposal surely does not permit the markets to function at the optimal efficiency level. No doubt, market-oriented policies and demand driven planning may have added advantages in the present context of liberalisation, privatisation, globalisation and good governance but the limitations imposed by market operators and operands are not easily surmountable and hence, in this context, it becomes essential to view market as an

institution guided both by the price signals and the State policies. After a detailed analysis of South Asian economies, Mrinal Datta-Chaudhuri warns that "Market failures present serious obstacles to the growth process of a backward economy" (1990, p.37). The failure of markets to protect the welfare of producers stems largely from the inadequacy of the infrastructure as well as the huge market margins and the participation of the stakeholders. These problems need to be examined in detail, if the markets have to function effectively and the best combination of State and market emerges through a viewpoint of the stakeholders.

1.2 The Problem

Agricultural marketing in India has grown in historical sense, mainly through State regulations than market signals. This was necessitated as the existing mechanism was more truncated against the sellers and favoured unhealthy practices. The hierarchical society and the production relations were clearly reflected in the existing distortions in the market. The history of regulated markets in India can be traced back to the Hyderabad Residency Order of 1886, which brought Cotton under regulation for marketing. This was followed by the Cotton and Grain Market Act enacted in Berar region of the then Nizam State. The Indian Central Cotton Committee recommended to enact the Cotton Markets Act of 1927. Followed by this, the Royal Commission on Agriculture of 1928 strongly recommended the establishment of regulated markets in the country. A few provinces in British India enacted the Regulated Markets Act and thus by the time of independence, about 250 regulated markets existed in different parts of the country. All these initiatives were directed more towards commercial crop markets and in relatively better-off regions. It was during the First plan period that the Planning Commission had directed the state governments to bring agricultural marketing under specifically enacted Regulated Market Act (called as Agricultural Produce Marketing Act) which most of the states complied with, though slowly. The problems of marketing failures were highlighted and it was expected that the legal framework would take care of the following problems:

- i. Undercover Sale
- ii. Removal of large samples
- iii. Unwarranted trade allowances
- iv. Heavy market charges
- v. Unauthorised deductions
- vi. Incorrect weighing and multiple units of measurement
- vii. Absence of grading
- viii. Presence of touts

These problems compounded the market imperfections and therefore, a series of steps were taken to deal with these. In view of these problems, agricultural marketing after independence in India has been undergoing brisk changes over the last five decades. The Regulated Market Acts enacted by various State governments incorporated a well designed legal framework to deal with these issues. These changes can be classified in four broad groups, namely: i. Introduction of Agricultural Marketing Institutions in India, ii. Creation of marketing infrastructure, iii. Co-operative Marketing as an alternative to protect weaker participants in the market, and iv. Emergence of the Regulated Market Act and subsequent modifications in that. It is quite clear that these changes occurred due to the prevailing circumstances and the ongoing reorganisation in the agricultural sector during these early decades. Four components predominated the policy interventions viz.: i. Putting in place regulation of marketing functions and removing imperfections; ii. Creating infrastructure to facilitate the process of marketing; iii. Introduction of Price intervention schemes; iv. Procurement and distribution of essential commodities. All these measures were operating simultaneously and therefore, had a cumulative effect on marketing sector.

An institutional intervention in the agricultural price policy was introduced during the late sixties in the form of Agricultural Prices Commission. It was set up to evolve a balanced and integrated price structure in the perspective of the overall needs of the economy. Initial emphasis of the Prices Commission was on reducing fluctuations in food grain prices and making available foodgrains for the Public Distribution System. The emphasis shifted from consumers to the producers during the mid-eighties and further, the questions were raised about its role in changing international trade scenario.

Minimum Support Prices (MSP), as one of the tools of the price policy, worked as a significant intervention measure in the functioning of the foodgrain markets. Similarly, the price regimes prevailing under the Public Distribution System (PDS) also impacted the grain prices and the market behaviour of foodgrains. Therefore, the price signals emerging from the market (especially, for the foodgrains) were not real but truncated due to MSP or PDS prices. The situation has been changing fast during the current decade. There are sufficient stocks of foodgrains with the government and thus, the demand for PDS can be met easily. Added to this, the targeted PDS has reduced the requirements through procurement. At the same time, pressure is exerted by the international price trends on the domestic market. Apprehensions are being expressed about the impact of fluctuations

in international prices on domestic production. All that, however, depends on the functioning of the domestic markets.

The present study is undertaken to examine the functioning of domestic markets in the case of these important agricultural commodities in Karnataka. The specific objectives of the study are deliberated below.

1.3 Objectives and Scope

1. To examine the prevailing system of marketing of important agricultural commodities in Karnataka
2. To examine the role of government and non-government agencies, such as FCI, Food and civil Supplies Department, Cooperatives, NAFED and private marketing agencies in the procurement /purchase, storage and marketing of Paddy and Maize and to evaluate/ assess critically their financial and organizational constraints.
3. To examine deficiencies in factors impacting market efficiency, such as physical infrastructure, market intelligence and trade practices for Paddy and Maize and suggest measures to improve them.
4. To examine the possibility of adoption of future markets in the case of Paddy and Maize. In case such markets are already operating for the commodity, then, to examine their performance in price risk management and price discovery as well as in handling the situation of surplus and shortages through coordination of storage decisions of market participants.
5. To suggest measures to improve marketing efficiency.

This study is concerned with product markets only. The input markets though important from the point of agriculture production, are out of the purview of this study. This is being done to delimit the area of research of the study so that it can be completed within stipulated time-frame. The study is based on both secondary and primary data and it covers two important crops grown in the state. The primary survey for the study has been carried out to obtain information on marketing of the produce of *Kharif* and *Rabi* of 2001-2002 agricultural year using structural questionnaires.

1.3.1 Selection of Crops and Districts

As per the design of the study by the Co-ordinating Centre (AERC, University of Delhi), the study has to cover two or three important crops of the state for primary investigation using appropriate criteria from among the criteria listed, namely: (i) Crops with state intervention, (ii) Area and production, (iii) Cash income to farmers, (iv) Export, present and potential, and (v) Employment generation. The procurement in the state is higher in the case of Rice and maize. There is hardly any significant and consistent procurement in the case of other crops.

Table 1.2: Changes in Area, Production and Yield of Rice in Districts of Karnataka

District	Area (000 Hectares)			Production (000 Tonnes)			Yield (Kg/Hectare)		
	1989-90 to 1991-92	1994-95 to 1996-97	1997-98 to 1999-2000	1989-90 to 1991-92	1994-95 to 1996-97	1997-98 to 1999-2000	1989-90 to 1991-92	1994-95 to 1996-97	1997-98 to 1999-2000
Bangalore (U)	16.31	0.48	45.26	22.49	10.23	23.69	5.30	9.70	-14.85
Bangalore (R)	51.92	95.92	28.62	86.56	139.47	43.06	22.82	22.26	11.20
Belgaum	-7.99	0.77	-0.51	14.22	0.71	30.39	24.12	-0.06	31.09
Bellary	11.06	-5.09	37.55	22.82	16.92	58.22	10.56	23.20	15.02
Bidar	21.16	-21.25	6.83	-40.49	157.12	37.11	-50.89	226.64	28.47
Bijapur	-3.46	-38.66	-18.89	42.90	-49.89	-20.31	47.96	-18.30	-1.75
Chickmagalur	-5.73	-9.37	3.22	-1.88	-13.52	3.53	4.09	-4.59	0.31
Chitradurga	-25.17	5.65	-81.86	-22.65	2.20	-86.77	3.38	-3.26	-27.08
D.Kannada	-0.63	-2.36	-52.28	-1.46	2.01	-49.43	-0.85	4.51	5.97
Dharwad	4.56	-6.70	-56.26	129.37	-44.11	-62.98	119.26	-40.10	-15.34
Gulbarga	12.68	105.99	120.59	-17.65	264.21	140.48	-26.89	76.86	8.99
Hassan	11.86	-4.14	-0.27	19.63	-18.15	-1.94	6.95	-14.61	-1.68
Kolar	46.73	81.05	-50.94	91.65	120.01	-57.56	30.60	21.49	-13.51
Mandya	2.23	11.94	-7.13	0.02	-0.64	3.09	-2.18	-11.22	11.01
Mysore	23.68	4.35	-12.49	30.13	-0.36	-13.69	5.22	-4.49	-1.38
Raichur	46.92	9.23	-14.20	76.68	9.80	-3.89	20.23	-0.48	12.02
Shimoga	-5.45	2.64	-20.00	-2.95	-7.06	-21.74	2.66	-9.44	-2.19
Tumakur	17.82	87.12	19.15	29.63	120.12	17.10	10.01	17.60	-1.71
U.Kannada	0.32	3.35	-1.75	9.96	-9.09	7.77	9.60	-12.04	9.71
Coorg	-1.86	-11.37	-9.65	8.65	-21.10	-6.71	10.71	-10.98	3.23
STATE	7.22	4.85	6.92	18.90	1.39	13.14	10.95	-3.28	5.73

Source: Computations based on the data collected from the Directorate of Economics and Statistics, Govt of Karnataka, Bangalore.

Table 1.3: Changes in Area, Production and Yield of Maize in Districts of Karnataka

District	Area (000 Hectares)			Production (000 Tonnes)			Yield (Kg/Hectare)		
	1989-90 to 1991-92	1994-95 to 1996-97	1997-98 to 1999-2000	1989-90 to 1991-92	1994-95 to 1996-97	1997-98 to 1999-2000	1989-90 to 1991-92	1994-95 to 1996-97	1997-98 to 1999-2000
Bangalore (U)	12.07	-14.63	5.30	16.03	41.33	5.27	3.52	65.51	-0.03
Bangalore (R)	12.93	-0.19	4.11	9.85	42.83	13.62	-2.71	43.08	9.15
Belgaum	-3.41	16.59	32.49	8.82	16.43	29.77	12.66	-0.13	-5.84
Bellary	10.05	42.42	-39.27	2.64	61.50	-34.14	-6.73	13.40	8.43
Bidar	-58.65	-8.76	73.85	-58.74	-0.99	109.86	-0.23	8.52	-3.12
Bijapur	14.72	8.59	-69.95	43.08	40.03	-75.55	24.75	28.94	-18.79
Chickmagalur	11.78	91.08	-37.65	-3.49	102.97	-34.10	-13.67	6.24	5.79
Chitradurga	43.32	33.51	-56.31	26.83	45.67	-61.74	-11.49	9.11	-12.42
D.Kannada	...	...	...	...	...	...	...	...	...
Dharwad	63.90	45.28	-82.93	112.68	11.92	-81.39	29.75	-22.95	9.02
Gulbarga	-53.67	38.01	36.09	-46.40	55.28	26.79	15.70	12.51	-7.73
Hassan	11.76	-19.64	134.88	-2.31	-14.13	263.53	-12.60	6.84	54.81
Kolar	2.47	59.97	10.79	59.60	144.35	-21.86	55.79	52.75	-29.48
Mandya	-70.11	-91.97	-55.88	-75.56	-84.70	-49.40	-18.21	90.59	12.20
Mysore	-9.24	12.66	-39.87	-22.52	33.76	-39.94	-14.63	18.72	-0.12
Raichur	-37.71	29.33	-98.54	-10.50	3.57	-98.78	43.71	-19.91	-16.79
Shimoga	26.61	105.04	-75.42	21.96	163.58	-68.81	-3.67	28.55	26.88
Tumakur	-42.32	65.48	89.32	-42.19	147.74	76.30	0.23	49.71	-6.90
U.Kannada	-39.60	-54.74	-3.33	-44.81	-40.30	-1.11	-8.64	31.85	-6.23
Coorg	58.08	3.60	-2.84	38.29	24.08	2.78	-12.52	19.77	5.79
STATE	8.27	29.65	8.30	20.86	40.27	11.72	9.64	8.36	3.35

Source: Same as in Table 1.2

Each year, the Government of India announces MSP for a number of crops. In the case of market prices falling below the MSP, the State government may announce procurement of the crop from procurement centres. There is no crop in the State other than rice (procured by FCI) that has direct and significant State intervention over time. Hence, the first criterion listed above is not considered. As the study is on efficient marketing system to obviate the need for a large-scale state intervention, the fourth and fifth criteria may not be suitable for selecting the crops. One of the indirect state interventions is provision of regulated markets. In Karnataka, among the crops, the quantity of produce marketed in regulated markets is highest for rice and maize in the year 2000-01 (Table 1.4). The two crops also have higher production compared to other crops in the state. Hence, the two crops were selected for the study.

**Table 1.4: Details of Quantity Marketed, Production and Area of Important Crops
Average over 1997-98 to 2000-01**

Crops	Quantity Marketed in Regulated Markets (in 000 Tonnes)	Production (in 000 Tonnes)	% Marketed	Area (in lakh Hectares)	% of Area to GCA
Rice	1704.3	3531.0	48.23	14.02	11.63
Wheat	37.9	187.5	21.25	2.60	2.16
Jowar	111.2	1494.0	7.79	18.82	15.62
Bajra	35.9	224.8	15.45	3.81	3.16
Ragi	95.2	1543.5	6.29	9.67	8.02
Maize	700.2	1732.3	40.17	5.76	4.17
Tur	75.8	218.5	38.29	4.73	3.93
Groundnut	318.8	929.0	36.07	11.19	9.29
Cotton	311.1	789.5	40.20	5.59	4.64
Chillies	57.5	75.8	18.54	0.92	0.76
Tobacco	0	56.0	0.01	0.77	0.64
coconut	34118.1	120806.3	14.13	2.33	1.93
Areca nut	90.8	102.8	44.63	0.74	0.61
Total Foodgrains	3280.7	9490.5	34.58	73.47	60.97
Total Pulses	347.2	726.0	48.85	18.04	14.97
Total Oil-seeds	485.2	1373.0	35.46	22.17	18.40
Total	41770.0	143280.3	29.15	194.62	--
Average GCA				120.5	--

Note: Gross Cropped Area is for the year 1999-2000

Source: (1) Karnataka State Agriculture Marketing Board Annual Report 2000-01

(2) Karnataka Economic Survey 2000-01

Secondly, one district where state intervention is the highest with respect to a selected crop was to be selected. After selecting Raichur and Chitradurga districts, two blocks from the selected districts were selected on the basis of differences in their agro-climatic conditions and cropping pattern so that, taken together, they could represent the district. From the selected block three villages representing different levels of market access, i.e., easy, moderate and difficult, would have to be selected. Finally, from each selected village 10 farmers would have to be selected based on probability proportion to the operational area of farmers by stratifying the farmers into five size groups viz., less than 1 ha., 1 to 2 ha, 2 to 4 ha, 4 to 6 ha and 6 ha and above.

1.3.2 Sampling Design

Based on the indirect state intervention, viz., quantity marketed in regulated markets for the two crops, rice and maize, Raichur district was selected for rice and

Chitradurga district was selected for maize (Table 1.5). Among the districts in the state, the highest quantity of paddy was marketed in Raichur regulated market and the highest quantity of maize was marketed in Chitradurga regulated market.

Table 1.5: Details of Quantity Marketed and Production of Paddy and Maize for the Year 2000-01

Districts	Quantity Marketed in regulated markets (in 000 Tonnes)		Production (in 000 Tonnes)		% Marketed		Area (in 000 Hectares)		%in Total Area	
	Paddy	Maize	Paddy	Maize	Paddy	Maize	Paddy	Maize	Paddy	Maize
Bangalore(U)	..	2.72	28.13	4.51	..	60.26	6.97	1.45	0.47	0.22
Bangalore(R)	4.53	15.93	85.62	16.69	5.29	95.42	22.43	5.25	1.51	0.78
Bellary	205.20	47.18	410.21	164.32	50.02	28.71	84.05	53.28	5.67	7.97
Belguam	4.55	78.15	157.78	285.98	2.88	27.33	63.81	113.23	4.30	16.93
Bijapur	..	4.93	0.79	47.17	..	10.46	0.34	15.94	0.02	2.38
Bidar	1.43	..	15.71	0.78	9.10	..	11.52	0.36	0.78	0.05
Chikkamangalur	13.17	0.30	18.62	1.24	70.73	24.15	49.24	0.37	3.32	0.06
Chitradurga	180.78	177.18	684.24	583.18	26.42	30.38	131.95	174.8	8.89	26.13
D Kannada	12.76	..	192.19	..	6.64	..	62.98	..	4.25	..
Dharwad	1.38	26.43	83.86	77.04	1.65	34.31	39.50	23.13	2.66	3.46
Gulburga	19.89	..	91.89	6.49	21.65	..	32.21	2.45	2.17	0.37
Hassan	29.68	13.57	254.97	58.17	11.64	23.32	68.24	14.75	4.60	2.21
Kodagu	19.33	..	127.52	5.44	15.16	..	36.96	1.65	2.49	0.25
Kolar	2.14	27.68	90.06	42.54	2.37	65.08	22.76	16.43	1.53	2.46
Mandya	349.14	0.10	350.07	1.03	99.74	10.01	78.78	0.31	5.31	0.05
Mysore	133.32	56.87	486.13	64.80	27.42	87.75	109.01	21.68	7.35	3.24
Raichur	625.35	0.02	667.73	0.62	93.65	3.89	141.55	0.19	9.54	0.03
Shimoga	141.02	50.83	556.16	61.70	25.36	82.38	156.36	18.67	10.54	2.79
Tumkur	17.98	1.70	228.22	29.16	7.88	5.83	56.92	10.45	3.84	1.56
U.Kannada	15.01	..	236.85	0.51	6.34	..	90.49	0.17	6.10	0.03
Koppal	84.98	44.85	380.16	46.10	22.36	97.28	73.41	11.73	4.95	1.75
CR Nagar	29.43	5.69	73.13	55.21	40.25	10.30	18.78	20.22	1.27	3.02
Bagalkote	..	42.06	0.47	155.57	..	27.04	0.17	51.88	0.01	7.76
Gadag	..	38.01	4.18	84.15	..	45.17	1.15	26.74	0.08	4.00
Haveri	11.55	189.97	175.98	343.25	6.56	55.34	56.74	83.74	3.83	12.52
Udipi	3.25	..	203.57	..	1.60	..	67.14	..	4.53	..
Total	1905.87	824.15	5604.21	2135.64	34.01	38.59	1483.45	668.86	100.00	100.00

Source: 1. "Karnataka at a Glance, 1998-99," Directorate of Economics and Statistics
2. Karnataka State Agriculture Marketing Board

On the basis of differences in their agro-climatic conditions and cropping pattern, two blocks from each district, namely, Gangavathi and Sindhanur from Raichur district and Davangere and Harihara from Chitradurga district were selected. It may be noted here that the district of Chitradurga was bifurcated into Davangere and Chitradurga recently and as the sample region came in the newly formed Davangere district we are referring to Davangere district. From each selected block, three villages representing different levels of

market access, i.e., easy, moderate and difficult were selected. The following is the list of villages selected in the four selected blocks.

Table 1.6: Names of Villages Selected for the Study

Block	Easy Access	Moderate Access	Difficult Access
Gangavathi	Waddarahatti	Kesarahatti	Hosakere
Sindhanur	Pagadadinni	Jawalgera	Jilihal
Davangere	Hebbala	Chinnasamudra	Hulikatte
Harihara	Kurlahalli	Bilasanur	Vaderhatti

From each selected village, 10 farmers are selected using PPS sampling procedure. The operated area of the farmers is classified into five size groups viz., less than 1.0 hectares, 1.01-2.0 hectares, 2.01-4.0 hectares, 4.01-6.0 hectares and more than 6.0 hectares. Using operated area as the size, 10 farmers were selected from each selected village using PPS sampling. Thus, for a crop and a season, 30 farmers from each block and 60 farmers from each district were selected. Rice has two seasons in Raichur district and the total sample size of farmers for the two seasons, viz., Kharif and Rabi was 120. In Chitradurga district Maize is grown in Kharif season only and hence, the sample size for maize was 60 farmers. In all, 180 farmers were selected for the survey.

Table 1.7: Sample Farmers by Size Groups from Selected Districts

Farm Size	Raichur		Chitradurga (Davanagere)	Total
	Kharif	Rabi	Kharif	
Less than 1.0 ha	19	27	27	73
1.01 ha to 2.0 ha	23	20	23	66
2.01 ha to 4.0 ha	15	9	7	31
4.01 ha to 6.0 ha	0	3	2	5
Above 6.01 ha	3	1	1	5
Total	60	60	60	180

1.3.3 Selection of Processing Units

Karnataka state marketing sector has low density of commission agents. In addition to the farmers, information was collected from commission agents, retailers and processing units who are in the chain of the marketing system. From each selected block for each season, 18 commission agents and 12 processing units were covered for primary investigation.

Table 1.8: Processing Units Selected for the Survey

Sl.No	Name	Market Area
1	Venkateswara Rice Mill	Sri Ramnagar
2	Sri Ramachandra Rice Mill	Oddarahatti
3	Sri Basaveswara Rice Mill	Gangavathi
4	Jaya laksmi Rice Mill	Buthaladinni
5	Hemant Rice Mill	Jawalgera
6	Amareswara Industries	Kartgi
7	S.L.V Industries	Gangavathi
8	Ramachandra Rice Mill	Gangavathi
9	Laxmi Rice Mill	Sindhanur
10	Shivashankar Industries	Sindhanur
11	Laxminarayana Industries	Kartgi
12	Laxmi Venkateswar Industries	Kartgi

1.4 The Survey

The reference year for the collection of primary data was agricultural year 2001-02. The fieldwork for Paddy was carried out in *kharif* and *rabi* season and that of maize was done only in *kharif* season. The secondary data was utilized pertaining to the last two decades and as the data for Davangere was not yet segregated from Chitradurga district the data pertaining to Chitradurga district was used for the purpose of meso-level analysis.

1.5 Chapter Scheme

We have followed here the chapter scheme suggested by the co-coordinating centre. But wherever possible a few sections of interest from the viewpoint of Karnataka are added. The second chapter includes macro level picture of the marketing and market infrastructure at the State level, whereas chapter three contains the agro-climatic characteristics of the selected districts. The socio-economic characteristics of the sample farmers are discussed in chapter four. The fifth and sixth chapters include the marketing scenario of paddy and maize based on the sample survey. The last chapter brings together the findings of the study.

Appendix Table 1.1 (a): Five Yearly Average of Area, Production and Yield of Rice in Karnataka

Year	Area (000 hectares)	Production (000 Tonnes)	Yield (Kg/Hectare)
1980-81 -- 1984-85	1,151.2	2,268.0	1,972.0
1985-86 -- 1989-90	1,140.9	2,198.4	1,920.0
1990-91 -- 1994-95	1,285.6	2,932.1	2,276.0
1995-96 -- 1999-2000	1,370.2	3,348.0	2,438.8

Appendix Table 1.1 (b): Five Yearly Average of Area, Production and Yield of Maize in Karnataka

Year	Area (000 hectares)	Production (000 Tonnes)	Yield (Kg/Hectare)
1980-81 -- 1984-85	162.6	409.4	2,520.0
1985-86 -- 1989-90	222.2	567.1	2,534.0
1990-91 -- 1994-95	301.6	881.0	2,948.0
1995-96 -- 1999-2000	498.5	1,479.6	2,994.0

Appendix Table 1.2 (a): Changes in Area, Production and Yield of Rice in Chitradurga District

Year	Area (000 Hectares)	Production (000 Tonnes)	Yield (Kg/Hectare)
1990-92	-17,517	-72,087	-489
1995-97	5,789	18,884	21
1998-2000	3,829	5,281	-470
Compound Growth Rate	1.02	1.04	1.71

Appendix Table 1.2 (b): Changes in Area, Production and Yield of Maize in Chitradurga District

Year	Area (000 Hectares)	Production (000 Tonnes)	Yield (Kg/Hectare)
1990-92	9,137	57,422	1,079
1995-97	17,535	80,603	447
1998-2000	14,654	-4,731	-1,114
Compound Growth Rate	1.15	1.65	1.18

Appendix Table 1.2 (c): Changes in Area, Production and Yield of Rice in Raichur District

Year	Area (000 Hectares)	Production (000 Tonnes)	Yield (Kg/Hectare)
1990-92	14640	70519	275
1995-97	10772	-25319	-426
1998-2000	30378	63582	-276
Compound Growth Rate	1.58	1.68	1.07

Appendix Table 1.2 (d): Changes in Area, Production and Yield of Maize in Raichur District

Year	Area (000 Hectares)	Production (000 Tonnes)	Yield (Kg/Hectare)
1990-92	-1,085	418	564
1995-97	3,084	85	-1,041
1998-2000	-94	-376	-462
Compound Growth Rate	1.54	1.09	1.17

Appendix Table 1.3(a): Details of Quantity Marketed and Production of Ragi and Jowar for the Year 2000-01

Districts	Quantity Marketed in Regulated Markets (in 000 Tonnes)		Production (in 000 Tonnes)		% Marketed		Area (in 000 Hectares)		% in Total Area	
	Ragi	Jowar	Ragi	Jowar	Ragi	Jowar	Ragi	Jowar	Ragi	Jowar
Bangalore (U)	..	1.61	111.12	..	..	..	48.02	..	4.70	..
Bangalore (R)	3.35	2.86	304.45	..	1.10	..	147.75	..	14.45	..
Bellary	0.58	20.40	5.75	144.97	10.10	14.07	5.35	109.71	0.52	6.15
Belguam	0.06	7.20	3.10	162.48	1.80	4.43	2.28	191.25	0.22	10.71
Bijapur	..	12.66	..	215.60	..	5.87	..	325.09	..	18.21
Bidar	..	8.06	..	124.29	..	6.49	..	107.51	..	6.02
Chikkamagalur	6.28	2.18	116.63	7.45	5.38	29.28	65.13	7.47	6.37	0.42
Chitradurga	6.68	2.58	126.55	33.67	5.28	7.66	68.23	28.76	6.67	1.61
D Kannada	..	..	..	..	..	..	..	..	..	..
Dharwad	..	8.02	0.29	44.52	..	18.02	0.24	56.13	0.02	3.14
Gulbarga	..	7.01	0.01	237.03	..	2.96	0.01	326.54	0.00	18.29
Hassan	21.91	0.85	210.90	2.70	10.39	31.55	130.23	1.86	12.73	0.10
Kodagu	..	..	1.47	..	..	..	0.95	..	0.09	..
Kolar	1.66	0.69	243.43	..	0.68	..	131.96	..	12.90	..
Mandya	1.77	0.02	158.33	3.73	1.12	0.66	78.34	3.92	7.66	0.22
Mysore	2.61	3.09	116.83	13.43	2.24	23.00	74.59	15.01	7.29	0.84
Raichur	..	16.74	..	146.34	..	11.44	..	174.74	..	9.79
Shimoga	0.91	0.21	8.17	1.75	11.13	11.76	5.80	1.53	0.57	0.09
Tumkur	6.56	0.30	310.93	7.17	2.11	4.19	199.87	4.97	19.54	0.28
U.Kannada	..	0.05	0.09	..	..	..	0.07	..	0.01	..
Koppal	0.03	3.30	..	54.58	..	6.04	..	69.97	..	3.92
CR Nagar	1.07	4.44	35.85	17.66	2.98	25.16	22.90	25.72	2.24	1.44
Davanagere	9.91	6.95	76.40	78.19	12.97	8.89	37.86	43.73	3.70	2.45
Bagalkote	..	8.98	..	116.96	..	7.68	..	143.85	..	8.06
Gadag	..	7.63	0.14	52.02	..	14.66	0.08	84.89	0.01	4.76
Haveri	0.87	8.84	4.90	82.22	17.70	10.76	3.06	62.41	0.30	3.50
Udipi	..	..	..	..	..	..	..	..	..	..
Total	64.24	134.68	1,835.33	1,546.74	3.50	8.71	1,022.70	1,785.07	100.0	100.0

Source:(1) "Karnataka at a Glance 1998-99" Directorate of Economics and Statistics
(2) Karnataka State Agriculture Marketing Board

Appendix Table 1.3(b): Details of Quantity Marketed and Production of Wheat and Bajra for the Year 2000-01

Districts	Quantity Marketed in Regulated Markets (in 000 Tonnes)		Production (in 000 Tonnes)		% Marketed		Area (in 000 Hectares)		% in Total Area	
	Wheat	Bajra	Wheat	Bajra	Wheat	Bajra	Wheat	Bajra	Wheat	Bajra
Bangalore (U)	..	..	..	..	..	..	..	..	..	..
Bangalore (R)	13.98	..	..	..	..	..	..	..	..	..
Bellary	0.64	..	2.66	22.17	24.06	..	2.66	26.79	1.00	5.80
Belguam	4.33	0.43	72.49	18.19	5.97	2.38	56.78	42.29	21.32	9.15
Bijapur	7.57	8.31	48.03	89.58	15.75	9.28	51.28	111.74	19.26	24.18
Bidar	3.44	..	9.38	7.44	36.71	..	9.46	9.81	3.55	2.12
Chikkamagalur	..	..	0.01	..	..	..	0.02	..	0.01	..
Chitradurga	..	0.02	1.10	3.92	..	0.51	1.02	5.17	0.38	1.12
D Kannada	..	..	..	..	..	..	..	..	..	..
Dharwad	14.36	..	27.69	0.02	51.86	..	36.41	0.04	13.67	0.01
Gulbarga	2.93	..	23.66	77.25	12.39	..	31.91	86.30	11.98	18.67
Hassan	..	..	..	..	..	..	..	..	..	..
Kodagu	..	..	..	..	..	..	..	..	..	..
Kolar	..	..	..	0.02	..	..	..	0.04	..	0.01
Mandya	..	..	..	..	..	..	..	..	..	..
Mysore	..	..	..	0.02	..	..	..	0.02	..	0.00
Raichur	0.85	..	2.05	44.19	41.62	..	3.57	75.78	1.34	16.40
Shimoga	..	..	0.00	..	..	..	0.00	..	0.00	..
Tumkur	..	0.01	..	0.14	..	3.68	..	0.31	..	0.07
U.Kannada	..	..	..	..	..	..	..	..	..	..
Koppal	3.87	..	5.45	35.28	71.02	..	11.01	59.04	4.13	12.77
CR Nagar	0.00	..	0.01	0.51	0.00	..	0.02	0.68	0.01	0.15
Davanagere	0.02	0.18	0.76	0.37	3.28	48.64	0.86	0.63	0.32	0.14
Bagalkote	1.91	9.24	37.18	41.30	5.14	22.37	23.97	41.23	9.00	8.92
Gadag	11.21	..	18.32	0.95	61.19	..	35.66	1.86	13.39	0.40
Haveri	0.09	0.20	1.10	0.30	8.45	67.86	1.70	0.39	0.64	0.08
Udipi	..	..	..	..	..	..	..	..	..	..
Total	65.20	18.39	249.88	341.63	26.09	5.38	266.32	462.12	100.00	100.00

Source: (1) "Karnataka at a Glance, 1998-99," Directorate of Economics and Statistics
(2) Karnataka State Agriculture Marketing Board

Appendix Table 1.3(c): Details of Quantity Marketed and Production of Tur and Gram for the Year 2000-01

Districts	Quantity Marketed in Regulated Markets (in 000 Tonnes)		Production (in 000 Tonnes)		% Marketed		Area (in 000 Hectares)		% in Total Area	
	Tur	Gram	Tur	Gram	Tur	Gram	Tur	Gram	Tur	Gram
Bangalore (U)	..	0.88	0.41	..	..	..	0.91	..	0.16	..
Bangalore (R)	..	0.06	3.41	0.013	..	450	4.73	0.02	0.81	0.01
Bellary	2.45	..	3.96	9.26	61.96	..	9.65	9.04	1.66	2.45
Belguam	0.00	0.05	3.82	18.48	0.03	0.29	10.23	34.07	1.76	9.22
Bijapur	3.01	0.01	18.01	21.93	16.69	0.05	30.78	35.96	5.30	9.73
Bidar	18.21	..	23.76	25.23	76.66	..	62.52	40.93	10.77	11.08
Chikkamagalur	0.10	0.18	0.15	1.39	69.86	12.86	0.32	2.72	0.06	0.74
Chitradurga	0.44	0.05	4.92	2.44	8.90	2.00	7.85	3.92	1.35	1.06
D Kannada	..	..	..	..	..	..	..	..	..	..
Dharwad	0.40	0.07	2.18	20.78	18.32	0.35	2.41	35.31	0.41	9.56
Gulbarga	53.43	..	164.42	93.63	32.50	..	366.68	118.44	63.15	32.06
Hassan	..	0.41	0.72	0.47	..	87.01	3.01	0.97	0.52	0.26
Kodagu	..	..	..	..	..	..	..	..	..	..
Kolar	..	1.53	6.83	..	..	..	8.05	..	1.39	..
Mandya	..	..	0.55	..	..	..	1.21	..	0.21	..
Mysore	1.10	0.68	1.69	0.80	64.86	84.95	4.91	1.24	0.85	0.34
Raichur	2.14	..	2.92	11.09	73.27	..	20.63	23.21	3.55	6.28
Shimoga	0.02	0.07	0.17	0.10	9.10	75.15	0.37	0.15	0.06	0.04
Tumkur	0.03	0.18	6.01	0.21	0.52	88.80	11.22	0.32	1.93	0.09
U.Kannada	..	..	0.06	0.04	..	..	0.14	0.06	0.02	0.02
Koppal	1.45	..	4.23	6.52	34.27	..	12.65	11.74	2.18	3.18
CR Nagar	..	0.71	0.15	0.71	..	98.99	0.32	1.10	0.06	0.30
Davanagere	0.26	0.07	6.17	0.85	4.23	7.87	8.05	1.36	1.39	0.37
Bagalkote	0.65	0.00	3.69	9.83	17.63	0.00	4.98	16.45	0.86	4.45
Gadag	0.36	0.01	0.67	14.66	53.99	0.06	2.66	30.93	0.46	8.37
Haveri	1.30	0.00	4.19	1.00	31.04	0.25	6.35	1.54	1.09	0.42
Udipi	..	..	..	..	..	..	..	..	..	..
Total	85.35	4.97	263.09	239.43	32.44	2.07	580.61	369.47	100.00	100.00

Source:(1) "Karnataka at a Glance, 1998-99," Directorate of Economics and Statistics
(2) Karnataka State Agriculture Marketing Board

Appendix Table 1.3(d): Details of Quantity Marketed and Production of Groundnut and Sunflower the the Year 2000-01

Districts	Quantity Marketed in Regulated Markets (in 000 Tonnes)		Production (in 000 Tonnes)		% Marketed		Area (in 000 Hectares)		% in Total Area	
	Ground-nut	Sun-flower	Ground-nut	Sun-flower	Ground-nut	Sun-flower	Ground-nut	Sun-flower	Ground-nut	Sun-flower
Bangalore (U)	0.38	0.00	0.44	0.01	87.58	..	0.43	0.01	0.04	0.00
Bangalore (R)	7.75	..	17.65	0.11	43.91	..	18.93	0.16	1.78	0.03
Bellary	10.97	7.78	68.01	20.16	16.13	38.61	72.27	42.25	6.80	8.84
Belguam	12.28	1.15	84.19	8.36	14.58	13.78	86.59	14.54	8.14	3.04
Bijapur	11.49	6.94	26.53	41.75	43.31	16.61	57.33	92.22	5.39	19.30
Bidar	0.37	0.22	1.85	2.46	19.97	9.09	2.97	6.80	0.28	1.42
Chikkamagalur	0.63	..	4.92	5.02	12.87	..	3.66	6.95	0.34	1.45
Chitradurga	58.66	7.86	181.81	16.38	32.27	48.01	156.73	29.86	14.74	6.25
D Kannada	..	..	..	..	..	..	..	..	..	..
Dharwad	9.74	..	40.84	0.99	23.86	..	36.14	1.83	3.40	0.38
Gulbarga	8.57	0.53	72.63	7.13	11.80	7.41	91.83	15.60	8.64	3.26
Hassan	0.15	..	4.59	4.02	3.18	..	4.28	4.66	0.40	0.98
Kodagu	..	..	0.01	..	..	..	0.01	..	0.00	..
Kolar	3.77	0.10	77.90	1.22	4.84	8.10	55.02	1.73	5.17	0.36
Mandya	0.23	..	6.30	0.01	3.72	..	8.24	0.02	0.77	0.00
Mysore	6.05	..	7.02	0.28	86.25	..	7.30	0.86	0.69	0.18
Raichur	27.00	23.46	41.95	37.16	64.35	63.13	52.88	92.04	4.97	19.26
Shimoga	0.07	..	5.78	0.08	1.19	..	4.14	0.13	0.39	0.03
Tumkur	16.83	0.23	236.26	1.96	7.13	12.01	171.64	2.77	16.14	0.58
U.Kannada	0.91	..	5.08	0.02	17.83	..	3.68	0.06	0.35	0.01
Koppal	3.93	1.03	46.08	12.87	8.53	8.00	55.75	32.53	5.24	6.81
CR Nagar	2.72	..	8.65	1.30	31.43	..	6.83	2.85	0.64	0.60
Davanagere	11.96	0.94	28.75	7.55	41.62	12.43	24.96	12.01	2.35	2.51
Bagalkote	22.05	11.87	26.97	38.94	81.77	30.49	26.36	64.65	2.48	13.53
Gadag	37.27	6.69	43.54	20.26	85.61	33.00	80.19	48.33	7.54	10.11
Haveri	11.44	0.19	39.42	3.00	29.02	6.29	32.56	4.96	3.06	1.04
Udipi	0.31	..	3.97	..	7.80	..	2.69	..	0.25	..
Total	265.55	68.99	1,081.11	231.04	24.56	29.86	1,063.42	477.79	100.00	100.00

Source: (1) "Karnataka at a Glance 1998-99" Directorate of Economics and Statistics
(2) Karnataka State Agriculture Marketing Board

Appendix Table 1.4: Minimum Support Prices fixed by Government of India for Certain Crops in Various Years

(Rs. Per Quintal; Tobacco & Sugarcane- Rs. Per Kg)

Crop	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-2000	2000-01
PADDY										
Common	230	270	310	340	360	380	415	440	490	510
F	240	280	330	360	375	395	445	470	520	540
SF	250	290	350	380	395	415	--	--	--	--
JOWAR/BAJRA/RAGI	205	240	260	280	300	310	360	390	415	445
WHEAT	225	275	330	350	360	380	475	510	550	580
MAIZE	210	245	265	290	310	320	360	390	415	445
BARLEY	200	210	260	275	285	295	308	350	385	430
GRAM	450	500	600	640	670	700	740	815	895	1015
LENTIL	--	--	--	--	--	--	--	--	--	--
TUR	545	640	700	760	800	840	900	960	1105	1200
MOONG	545	640	700	760	800	840	900	960	1105	1200
URAD	545	640	700	760	800	840	900	960	1105	1200
SUGARCANE	24	27	32.50	37	42.50	45.90	48.45	52.70	56.10	59.50
COTTON										
H4	840	950	1050	1200	1350	1380	1530	1650	1775	1825
F414/H777	695	800	900	1000	1150	1180	1330	1440	1575	1625
GROUNDNUT	645	750	800	860	900	920	980	1040	1155	1220
JUTE	375	400	450	470	490	510	570	650	750	785
RAPESEED/MUSTARD	600	670	760	810	830	860	890	940	1000	1100
SUNFLOWER-SEED	670	800	850	900	950	960	1000	1060	1155	1170
SOYABEAN										
Black	395	475	525	570	600	620	670	705	755	755
Yellow	445	525	580	650	680	700	750	795	845	865
SAFFLOWER	670	800	850	900	950	960	1000	1060	1155	1170
TORIA	570	645	725	780	800	825	855	905	965	1065
TOBACCO										
F2	14.75	16	18	18.50	19	19	20.50	22.50	25	26
L2	16	17.50	20	21	21.50	22	23.50	25.50	27	28
COPRA										
Milling	1700	--	2150	2350	2500	2500	2700	2900	3100	3250
Ball	1850	--	2350	2575	2725	2725	2925	3135	3325	3500
SESAMUM	--	--	--	--	850	870	950	1060	1205	1300
NIGERSEED	--	--	--	--	700	720	800	850	915	1025
TIL	-	-	-	-	850	870	950	1060	1205	1300

Source: 1. Reports of the Commission for Agricultural Costs and Prices, Department of Agriculture and Cooperation, Ministry of Agriculture, Govt of India.

2. *Agricultural Research*, Department of Agriculture and Cooperation, Ministry of Agriculture, Govt of India.

CHAPTER II

PRODUCTION, MARKETING AND MARKET REGULATIONS OF AGRICULTURAL MARKETS

2.1 Introduction

Agricultural sector of Karnataka has been characterised by cycles of growth and stagnation. It is a matter of deep concern as this sector relates directly to the overall growth performance of the state economy. Efforts, both at policy and at implementation levels, are undertaken to overcome the constraints and to encourage growth boosters. The constraints mainly relate to proper incentive structure, imperfections in the product and factor market, existing infrastructure facilities, forward and backward linkages, and allied supportive activities. Besides these, current liberalization process has brought forth the prominent role of market and consequently domestic market reform policies. If, on the policy front, proper corrections are incorporated to deal with the market induced imperfections, and correct price signals are created in the economy, it will help the state economy to get onto a better path of development. Any analysis of the market structure, therefore, requires clear understanding of the existing marketing infrastructure and the regulations on marketing. Further, it requires knowledge of the agricultural marketing system at primary level to spot the imperfections and structural fissures.

2.2 Rules, Procedures and Modalities of Regulation of Agricultural Markets

Box 2.1

Market Regulations can be grouped under two broad categories, viz., regulations governing the functioning of primary agricultural produce markets, including a series of legal instruments and the Market Committees functioning as intermediaries. Regulation and development of primary markets was taken up as an institutional innovation and construction

Main Components of Agricultural Produce Marketing Act

- Establishment of Markets
- Constitution of Market Committees
- Conduct of Business
- Staff and Market Committees
- Their Functions and Regulation of Trading
- Market Funds
- State Agricultural Marketing Board

of well laid-out market yards. These regulations provide a design for the conduct of the agricultural market produce committee. The Directorate of Marketing and Inspection (DMI) of Government of India and state level Directorate of Marketing play an important role in

functioning of these institutions. In order to remove the components causing market imperfections and to bring the functions of agricultural marketing under a proper legal framework, the State governments passed the Agricultural Produce Marketing Acts. The Acts were passed in most of the states around the mid-sixties and revised subsequently. The Acts incorporated seven major components dealing with the establishment, functioning and conduct of the business (See Box 2.1).

The important general features of regulated markets include:

- (i) monitoring of marketing practices by Regulated Market Committees;
- (ii) licensing of functionaries;
- (iii) open auction or close-tender system;
- (iv) issue of sale slips showing quantity and price to the farmers;
- (v) well-publicised time and days of sale;
- (vi) correct weighment of the produce by licensed weighman;
- (vii) prescription of rational market charges;
- (viii) provision of payment to farmers within stipulated period;
- (ix) mechanism of dispute settlement;
- (x) dissemination of market related information;
- (xi) provision of amenities to the farmers in market yards; and
- (xii) reduction of physical losses during buying and selling.

In addition to these, the spread of market infrastructure also plays a significant role in the marketing process. The number of regulated markets in the country which was only 286 at the time of independence, has now gone up to 7,062 and out of these, 2,354 places have been developed as main yards and 4,708 as sub-yards. In addition to these, there are 27,294 periodic markets existing in rural areas, most of which are yet to be developed. The National Commission on Agriculture recommended that the density of markets should be increased significantly, but that did not happen in Karnataka.

Five decades of continuous policy intervention has not made any significant change and a lot needs to be done. Even a cursory visit to any regulated market yards suggests that we still have to achieve a lot out of this. Certain practices like late payment to farmers, under-pricing, arbitrary grading, speed money and non-issue of sale slips by the traders continue to dog the performance of markets. There is a considerable congestion and delays in several markets resulting in long waiting periods for the farmers to receive their

payments. The traders have organised into informal cartels and these cartels squeeze the farmers. There is also lack of understanding about the market regulations particularly those relating to the sale of produce outside the market yards. Funds collected as cess and market fees are not properly utilised. In the process, APMCs are emerging as some sort of monopolistic centres of sale and purchase with the reins in the hands of a few.

Apart from the market regulations the Government of India also initiated future or forward trading. The Forward Markets Commission (FMC) was established under Forward Contracts (Regulation) Act, 1952. The forward trading act guards against unhealthy speculative practices and provides a firm price to the farmer. Forward trading in agricultural commodities was suspended during the seventies due to various bottlenecks but resumed again. There are now 20 exchanges registered with FMC undertaking futures trading in agricultural commodities which include cotton lint, raw jute, jute goods, gur, coffee, potato, turmeric, black pepper, rice bran, edible oils, oil-seeds and oil cakes. Recently, sugar has also been permitted for future trading. Future trading provides an inbuilt insurance against price risk and also helps retain a constant relationship with international markets.

2.3 Agricultural Marketing System at the Primary Level

Agricultural marketing system at the primary level in Karnataka involves four broad marketing channels, viz., (i) direct to consumers; (ii) through private wholesalers and retailers; (iii) through public agencies (regulated markets) or cooperatives; and (iv) through processors. The share of these channels in total marketed surplus varies from commodity to commodity and across regions. Marketing structure of the agricultural produce differs according to products. Among these channels large quantity of produce is transacted through the regulated market channel. It is necessary to understand the basic functioning of the regulated markets at lower levels before one gets into analysing the reforms in marketing. Foodgrains are mostly marketed at the primary village market or in the regulated market yard. The procurement of grains takes place only in the case of rice and through the processing mills. Oil-seeds are largely sold through the regulated markets and directly to the processors. But other commercial crops like banana, arecanut, coconut, sugarcane and cotton have developed specific marketing channels.

Due to the creation of marketing institutions and the infrastructure quite a few changes have occurred in the agricultural marketing sector. These include: i. increase in the market arrivals as per cent to total output; ii. reduction in the market inefficiencies in terms of unauthorised charges and irrational grading; iii. dissemination of market information at the regulated market yard; iv. better storage facilities and place to stay was created for the farmers; marketing charges payable by farmers were either dropped, standardized or liability shifted to the buyers; and v. villagers are not selling major portion of their produce in the village and the proportion of distress sale reduced significantly.

2.4 Marketing Structure and Market Institutions

2.4.1 Marketing structure of agricultural commodities

The present regulated marketing System involves five stages. As a first step, the farmer brings the produce at the market during harvest season. These are graded by the graders and then heaped in different places in the market during the second stage. The traders or their representatives enter the market and prepare a list of prices offered to different heaps of commodities marking the third step. The slips are then processed and the heaps of commodities are assigned to the highest bidder, which constitutes the next stage. Finally, the trader settles the transactions and takes away the produce.

2.4.2 Market regulations:

The Karnataka Agricultural Produce Marketing (Regulation) act was passed by the Karnataka State Legislature to provide for the better regulation of marketing of agricultural produce through establishment and administration of markets for agricultural produce in the State. It called on the State government for the establishment of the markets by declaring the market area and its intention of regulating the marketing of specified agricultural produce. The Act follows the model act given by Government of India and hence not very different in content as against the other States.

The marketing practices in the Regulated markets are governed by the Market Committees that have jurisdiction over the entire market area. The Committee is empowered to implement the provisions of this Act and the rules and bye-laws made there under in the market area. It grants or renews the licenses for use of any place in the

market area for the sale of the notified agricultural produce or for operating therein as market functionaries in relation to marketing, after making such enquiries as it deems fit. It has the power to levy market fee on the traders and also impose penalty where a trader fails to pay. The Committee is also entrusted with the maintaining of proper checks on all receipts and payments by its officers, proper execution of all works chargeable to the market committee funds, maintaining register of arrivals and fees collected, preparing plans and estimates for works, publishing a statement of assets and liabilities, preparing and adopting budget for the ensuing year and regulating expenditure according to the budget, providing Marketing information and arranging for temporary storage or stocking of notified crops in the market yards.

(i) Sale of Agricultural Produce

As a measure to stop under cover sales, the sale price of agricultural produce sold in the market area, according to the APM(R) Act, should be determined either by tender system or by public auction or by open agreement or in such other manner with the previous approval of the Director of Agricultural Marketing, by the market committees. Present practice incorporates use of sale slips, which are to be issued by every licensed buyer, showing quantity and price, to the farmers as a written agreement of sale in such form as prescribed by the bye-laws. The Commission agents can recover his commission only from the buyer at such rates not exceeding two per cent of the price for which the agricultural produce is sold and no market functionary should receive commission, fees, charges or any other form of remuneration except as prescribed by the rules or bye-laws.

The market functionaries as per the APM(R) Act shall make, give or allow no deductions in weight or payment other than those specified in the rules or bye-laws, in respect of any transaction relating to notified agricultural produce. The deductions that are deemed to be permissible are deductions in the weight for the container, driage of produce, deviation from sample or known standard and deduction in price on account of the detection of adulteration not readily detectable on customary examination. These deductions introduce significant transaction costs in the markets. There were attempts to standardise these but have not succeeded significantly.

The Act makes provisions for the immediate payment in cash to the seller for the goods sold in the market yards or in the sub-market, after making the deductions for fees, market charges and taxes as per the rules or the bye-laws except in the case of a Commission

agent agreeing in writing to give delivery to the buyer on credit which shall in no case exceed a maximum period of ten days as prescribed by the bye-laws. Again this stipulation is violated in practice. The Committee appointed by Govt. of Karnataka, under the Chairmanship of Shri. D. R. Patil, submitted its report in November, 2002. The Committee tried to make the stipulations more stringent.

Every licensed market functionary (trader, commission agent, ginner, presser, processor, warehouseman, importer, exporter, stockist) operating in the market area shall maintain accounts and submit to the market committees periodical reports and returns. They are also supposed to render assistance in the collection and prevention of the evasion of payment of fees or other amounts due under this Act.

(ii) Provision of infrastructure facilities in the market yards and outside

APMCs are required to provide with the facilities like approach road to the market area, construction of covered auction platform and other infrastructure like drying platforms, drinking water, godowns and common facility centres for hosing machinery for cleaning, grading and other post-harvest operations.

(iii) Provision for Dispute Settlement

To settle the disputes arising between the producers, buyers and sellers or their agents the Act provides a mechanism of dispute settlement by letting the Market Committee of that area to appoint a panel of arbitrators periodically consisting of agriculturists, traders and commission agents and constitute a Disputes Committee. Necessary rules are made for regulating the procedure of settlement and the payment of fees by the parties for the settlement.

(iv) Market Funds

All the money received by the APMCs by way of fees, cess, charges, loans raised and grants and contributions made by the State government becomes part of the Market funds. These funds are to be utilised for the purposes of making payments on behalf of the State government and the State Agricultural Marketing Board for various activities undertaken. The Market Committees having an income exceeding Rs. 5 lakhs and has the necessary infrastructure facilities may provide short term advances to the producer sellers using the excess funds at specified rates of interest. Preference should be given to small and marginal farmers while advancing and the amount of advance should not exceed 60 per cent of the

market value of the produce pledged. The Committee under the chairmanship of Shri. D. R. Patil dealt with the budgeting procedures and maintenance of accounts of the funds.

2.4.3 Institutions in Agriculture Marketing Sector:

As a strong support to the physical infrastructure, an institutional network has been established during the last five decades to help the farmers to partake the advantages of a fair marketing system. The institutions from public sector include:

- Food Corporation of India (FCI);
- Cotton Corporation of India (CCI);
- Jute Corporation of India (JCI);
- Commodity Boards for tea, coffee, tobacco, spices, rubber, cardamom, arecanut, coconut, cashewnut, horticultural products, dairy products, and oil-seeds and vegetables;
- Agricultural and Processed Food Products Export Development Authority (APEDA);
- State Trading Corporation (STC);
- Marine Products Export Development Authority (MPEDA);
- Directorate of Marketing and Inspection (DMI);
- Departments of Food and Civil Supplies at the Centre and state levels;
- Commission for Agricultural Costs and Prices (CACP);
- State Agricultural Marketing Boards; and
- Council of State Agricultural Marketing Boards (COSAMB); and Central and State Warehousing Corporations;

These institutions function at the national level but many of them are the major players at the state level. The Food and Civil Supplies Corporation has a strong link with the Ministry of Food and Civil Supplies, the Co-operative Marketing network, National Agricultural Marketing Federation (NAFED) and the commodity specific institutions are quite active at the state level. Some of these institutions are involved in the process of implementation of MSP at the State level. These include Karnataka Food and Civil Supply Corporation, Karnataka State Co-operative Marketing Federation, Karnataka Oil-Seed Growers Federation and the National Agricultural Co-operatives Marketing Federation (NAFED). The procurement of foodgrains is entirely the responsibility of the Food and Civil Supplies Corporation at the State level. Oilseed growers' Federation deals with oil-seeds

whereas, NAFED has the responsibility of procuring other commodities. We give below a brief description of their activities.

i. National Agricultural Co-operative Marketing Federation of India

This is an apex institution dealing with co-operative marketing in the country and it came into existence on 2nd October 1985. NAFED was established to play an effective role in the marketing of the agricultural produce within and outside the country in the fast changing business environment. NAFED involves itself in five major activities (See Box 2.2).

Box 2.2

Major Activities of NAFED

- Providing market support to the farmers through its commercial purchase.
- Acting as the Central Nodal-Agency of the Government of India for undertaking purchases of oil-seeds and pulses under the Price Support Scheme.
- Acting as one of the agencies of the Government of India for making purchases under market intervention scheme.
- Acting as a channelising agency of the Government of India for select commodities.
- Assisting farmers to source various agricultural inputs.

NAFED undertakes its operations through two agencies, namely, Taluka Agricultural Produce Cooperatives (TAPC) and Agricultural Produce Marketing Committee (APMC). The regional office of NAFED is in Chennai and its head office is in New Delhi. NAFED decides about the procurement mainly on the basis of the budget available: The regional office and the branch offices will get the information from the State Marketing Boards whenever prices slide down below MSP. It is only at the behest of the State Marketing Board, NAFED begins its intervention in the market and starts procurement. The main APMCs send the information of arrival and prices of the commodity to NAFED every day. But it does not act *suo motto*. NAFED procures groundnut, soyabean, safflower, sunflower and sesamum, gram, tur, black gram and copra. Information about the price situation takes about one week to reach from regional or branch office to the Head office. It is only then the Head Office makes available the required funds to the regional office and thus, NAFED can enter into the market and start procuring.

NAFED has the following Charges

Service charges	2%
Sale charges	2%
Handling charges	Rs 95/MT
Market Cess	0.8%

The market intervention operations of NAFED have been earning sufficient profits to the organisation. In the year 2000, the profits of NAFED were Rs 1.99 crores and in the following year it touched Rs 4.93 crores. This clearly indicates the profitability of its market intervention operations and thus, it is clear that, on the one hand, even though the interventions are beneficial for the procurement agency it does not meet the farmers expectations, on the other. It does not meet the farmers' expectation either about the procurement at the right time or at the right price. NAFED has a reserve fund named as Price Fluctuation Fund. This Fund was Rs 12.51 crores in 1999 and Rs 11.31 crores in the following year. It is clear that the agency has the needed fund and the infrastructure for the market intervention operations and even then the farmers are not the ultimate beneficiaries. Our interview with the NAFED Manager revealed that if given free hand the agency could easily increase its profits and effectively intervene in the market at the proper time. In the context of liberalisation, it is quite prudent to allow free hand to agencies like NAFED to undertake purchases through market interventions. We have presented in Table 2.1 the procurement effected by NAFED in the recent years and it can be observed that there is a significant presence of the organisation in the market.

Table 2.1 on procurement operations by NAFED points towards three pertinent observations. First, there is hardly any consistency in the MIS operations of NAFED. Therefore, their presence or purchase operations is neither effective in reducing the price risk, nor the variations. Thus, the operations do not even assure the farmers against impending price risk. Second, the intervention is so diminutive compared with the marketed surplus that this could hardly make any dent on the market and prices. But this is interesting on the background of the fact that NAFED makes good profit. Third, the operations of NAFED are confined only to a few crops leaving a large number of crops out of its ambit. This policy was well suited when there was scarcity in the agricultural production and supply bottlenecks were significant irritants. But now in the changed

circumstances it is expected that such institutional intervention be used to achieve positive and long lasting results.

Table 2.1: Procurement of Agricultural Commodities by NAFED: 1990-1999

Commodity	Year	Support Price Rs. P.Qtl (FAQ)	Qty Procured MTs	Value Rs. In lakhs	Major States of Procurement
Potato	1997-98	125-130/350	4,697	159.27	Uttar Pradesh Karnataka
Onion	1990-91 (MIS 90)	70	61,984	433.94	Gujarat Maharashtra
	1991-92 (MIS-91)	70K/75R 300	4,500 60	33.31 1.98	Karnataka
Isabgol	1990-91	1,100	1,256	138.14	Gujarat
Grapes	1990-91	2,50B 300A.	416	10.88	Haryana Punjab
	1991-92	300B 350A.	102	3.22	Haryana
Eggs (Qty. in lakh Nos.)	1990-91	65/100	38.20	15.28	Hyderabad/Del
	1991-92	65/100	20.16	13.11	Andhra Pradesh
	1992-93	65/100	26.99	17.94	Andhra Pradesh
	1993-94	75/100	91.02	61.63	Andhra Pradesh
	1994-95	75/100	28.21	37.61	Andhra Pradesh
	1995-96	82/100	34.82	32.96	Andhra Pradesh, Punjab
	1996-97	110/100	141.43	137.51	Andhra Pradesh, Punjab
Mushroom	1999-00	100	85.89	86.95	Andhra Pradesh
	1990-91	220	46	10.01	Haryana
Kinoo/Malta	1990-91	250B	6,585	181.71	Rajasthan, Punjab, Haryana, Himachal Pradesh
	1991-92	300A.	2,989	86.81	Punjab, Haryana
	1992-93	325A.	1,703	46.88	Punjab, Haryana
	1993-94	350A.	3,133	49.49	Himachal Pradesh, Haryana, Uttar Pradesh
Wet Ginger	1991-92	300A	21	0.06	Kerala
Castor Seed	1990-91	550	2,500	137.47	Gujarat
	1991-92	550	9,999	549.98	Gujarat
Black Pepper	1993-94	3,300	1,491	495.25	Kerala
Chillies	1993-94	1,500	5,000	806.64	Andhra Pradesh
	1996-97	2,200	126	29.48	Andhra Pradesh
	1997-98	2,250	8,123	19.01	Andhra Pradesh
Coriander	1998-99	1,250	378	45.88	Rajasthan

Source: NAFED – Annual Reports for Various Years : A, B – Grades of Products

The operations of NAFED in Karnataka during the decade of nineties have been quite minimal due to the focus of the institution on commercial crops. The institution is not geared to cover the commercial crops dominating in Karnataka except onion. Even though it is a profit making body, its impact on the marketing sector in the State is quite insignificant. Table 2.2 presents the objectives of NAFED and the operations undertaken by the agency to meet these objectives. On the face of it, one can be satisfied that NAFED effectively works on most of its set objectives. However, our interviews with the officers of

NAFED indicate that they would like to intensify their presence in the market. This will not only help increase competition in the market but also can enhance market functioning and protect the producers against fluctuations.

Table 2.2: National Agricultural Co-Operative Marketing Federation (NAFED)

S.No.	Objectives	Operations Undertaken to Meet the Objectives
1	Providing market support to the farmers through its commercial purchase	Procurement and commercial purchase operations are undertaken
2	Acting as the Central Nodal Agency of the Government of India for undertaking purchases of oil-seeds and pulses under the price support Scheme.	Oil-seeds purchase scheme operates effectively.
3	Acting as the agency of the Government of India for making purchases under market intervention scheme.	Acts as an agency of the GOI, for market intervention but cannot effectively undertake this due to long and extended procedure. Cannot help the farmers in distress.
4	Acting as the channelising agency of the Government of India for select commodities.	Effectively acts as channelising agency
5	Assisting farmers to source various agricultural inputs.	Sporadic instances
6	NAFED appoints the agent for the purchase and delivery of the commodity.	Agents are appointed and the purchase and delivery operations undertaken. This has been developed effectively.
7	NAFED signs the agreement with the agents.	Most of the NAFED operations are carried out with the help of agents
8	NAFED supplies properly stitched and standard weighted gunny bags to the agents	-do-
9	NAFED officers/representatives shall oversee the operations.	-do-

ii. Karnataka Food and Civil Supply Corporation (KSFCS)

The Karnataka State Food and Civil Supplies Corporation handles procurement, storage and distribution operations of essential commodities on behalf of the Food Corporation of India and the State of Karnataka. It also receives foodgrains for distribution from the Food Corporation of India. Till 1981-82, KSFCS used to procure paddy and process it into rice for the purpose of public distribution, but now paddy is not procured. Rice is taken as levy from the rice mills. KSFCS acts as a sub-agent of FCI for the purpose of procurement, which takes place at all stages. The APMC reports about the fall in price to the Deputy Director of Food and Civil Supplies, who, in turn, appraises the Deputy Commissioner of the district about the situation. The Deputy Commissioner calls a meeting of the Task Force and only after the Task Force clears the procurement operation it is reported to the State Authorities for necessary permission and funds. The procurement points are opened only after the State level authorities direct the procurement. This entire

exercise takes at least two weeks, and till then the farmer cannot wait in the market yard. Recently, the Government of Karnataka has taken a decision to open permanent procurement centres in the APMC yards. KSFCSC makes significant profits in the procurement and distribution operations. The profit recorded in 1996-97 was Rs 5 crores and it went down to Rs 1.76 crores in 1998-99. The recent procurement of food commodities are indicated below:

Commodities Procured by FCI: 2001

Maize	361,000	tonnes
Ragi	15,000	tonnes
Bajra	4,500	tonnes
Paddy	1,100	tonnes

Recently FCI procured directly 132,000 tonnes of Maize for Rs. 445/q and KFCSC sold that at Rs 405/q and incurring a loss of Rs. 40 per tonne. However, it was pointed out in a recent study by the Directorate of Agriculture that the procurement was largely from the traders despite the restriction that procurement should not be made in the absence of Land Records (Pahni or ROR) of the farmer. This happened due to three factors. First, there was a sufficiently long time-gap between the price collapse of maize and opening of the procurement centres. Second, the farmers who had brought their produce for sale could not wait that long to sell their produce. They preferred to sell the produce immediately and receive the cash. Third, traders were ready to purchase the produce at lower than the MSP, and effected such purchases. Traders also obtained a copy of the ROR to produce at the procurement centre for the purpose of procurement at MSP. In the entire process, the traders could make profit.

The KSFCSC undertakes procurement and the stocks are handed over to the FCI. After that the FCI holds these stocks in the godowns and the state has a good capacity for stocking the grains. KSFCSC undertakes the distribution of rice, wheat, sugar and kerosene to the BPL and APL under the PDS scheme. The PDS rates are almost closer to open market rates and therefore, BPL households usually buy at the fair price shops. In any given taluk, 65 per cent of the PDS allocation is managed by the KFCSC and another 35 per cent is met from the co-operative societies.

iii. Karnataka State Co-operative Marketing Federation (KSCMF)

KSCMF is an institution financed by the State govt for the purpose of market intervention. It is administered as an apex federation of co-operative societies and involves in procurement operations. KSCMF gets the requests for procurement of commodities from APMC or directly from the State. It is only then that KSCMF enters the market for procurement. It also undertakes the market disposal of the procured commodities and thus intervenes as seller as well as purchaser. Theoretically, KSCMF should make a significant dent on the market operations and help in correcting price and market distortions. But, in practice, this does not happen for various reasons. First, it is the co-operative structure of the institution that hinders the working due to politicisation. Members of the body are more concerned about strengthening the political linkages than entering into procurement. Second, over the years KSCMF has neither developed infrastructure nor the expertise and channels to effectively handle the procurement. Third, a large part of the marketed surplus directly goes through the regulated market and producers prefer to sell the product to the traders due to interlocking of credit and product market. Finally, large numbers of societies are non-functional due to problems of elections and hence, cannot participate in the process of marketing.

KSCMF is financially self-sufficient having 32 branches and well-established network with APMCs in the State. The marketing federation usually procures commercial crops like cotton, maize and tur and other pulses. These form nearly 10-15 per cent of the total commodities procured. The preference for commercial crops is due to the fact that these have longer shelf life and the proportion of wastage is quite low. Apart from that it was told that KSCMF's procurement is demand-oriented and their presence in the market was not obligatory. KSCMF had procured huge quantities of cotton a few years back and in the process incurred losses to the tune of Rs 5 crores. Experience suggests that marketing federation should pre-plan their market intervention every year. The target fund provided for procurement every year is approximately 250 crores and this should be utilised to achieve the best results as well as profits.

Table 2.3: Karnataka State Co-Operative Marketing Federation (KSCMF)

Sl. No.	Objectives	Meeting the Objectives
1	KSCMF purchases fertilizer and pesticides from the industry and provides that to the farmers at reasonable prices.	Usually this is the main function undertaken by the KSCMF. Fertilizers and pesticides are provided through Farmers' Co-operative Society but their supply does not meet the total demand. Therefore, farmers have to buy that from the open market.
2	KSCMF maintains cold storages in different areas for farmer's service.	The construction and maintenance of cold storages are the activities undertaken, but the capacity utilisation is quite low. Therefore, these activities are not financially viable.
3	KSCMF undertakes construction of cold storage at the necessary places.	---
4	KSCMF is required to procure/purchase agricultural produce under Minimum Support Prices.	Procurement operations are not immediately undertaken after the prices collapse. There is no set mechanism for this operation. This needs to be evolved.
5	KSCMF is required to maintain godowns for the storage of procured quantity.	Godowns are maintained but a good number of them are rented out.
6	KSCMF is required to maintain good relationship with APMC.	APMCs and KSCMF have very close ties and good working relationship
7	KSCMF takes loans from different Banks to distribute fertilizer to the farmers in advance in the season.	Activity is undertaken
8	The main objective of KSCMF is to give good price for farmer's agricultural products, if the market price goes down.	This does not happen due to the lengthy procedure involved. KSCMF has sporadically participated in market intervention operations
9	If the seeds are not available in the sowing season then the KSCMF will provide the seeds to the farmers.	This activity is undertaken but it has little significance in meeting the overall demand.

Taluka Level Agricultural Produce Co-operative Marketing Societies (TAPCMS) function in most of the talukas of the State. Largely the TPCMS provide/distribute inputs like seeds/fertilisers and pesticides to the members. To meet the market needs of the farmers 179 Taluk Agricultural Produce Co-operative Marketing Societies (TAPCMS) are functioning in Karnataka. The aggregate turnover of all TAPCMS in the year 1996-97 was Rs.39, 268 lakhs. In addition, there are 62 special agricultural produce-marketing societies in existence in the State. The Karnataka State Co-operative Marketing Federation functions as an Apex institution to the TAPCMS.

Box 2.3

Main Objectives of TAPCMS

- To provide suitable agricultural marketing facilities for agricultural produce grown by farmers and members.
- To undertake distribution of agricultural requisites and other essential commodities to its members.
- To recover loans by the farmer members of PACS under-linking credit with marketing.
- To provide godown facilities.
- To provide pledge loans on the pledge of agricultural produce till the produce required price.

Even though the objectives of TAPCMS provide for supporting the infrastructural needs for marketing, it is seldom done. The focus of TAPCMS is more on distribution of inputs and crop loans.

v. Karnataka Oil-Seed Growers Federation (KOF)

Karnataka Oil-Seed Growers Federation (KOF) is a sub-agency for procurement on behalf of NAFED. KOF is authorised to procure oil-seeds in the state through the APMCs or directly from the farmers. The procurement is usually done through the Oil-seed Growers Co-operative Societies in different parts of the State. The network of these societies has been widespread and even then the market intervention on behalf of the KOF has been not so effective. KOF has developed good infrastructure and has 350 Oil-seed Growers Co-operative Societies all over the State which are situated in the villages (14 major oil-seed growing districts). Every season, KOF signs an agreement with the NAFED, and after that the funds are given by NAFED to procure the commodities. There is a strict quality control by NAFED and therefore, the procurement operation has to be carried out with due care. Transport charges, gunny bags and labour charges are paid by KOF and reimbursed by NAFED. Three regional unions (situated in Hospet, Raichur and Hubli) control the Oilseed Growers Co-operatives in the State. In the recent years, KOF has procured substantial quantity of oil-seeds from the open market as indicated in Table 2.4.

Table 2.4: Procurement of Oilseeds by Karnataka Oil-seed Growers' Federation

(Quantity in tonnes)

Commodity	1999-2000	2000-01	2001-02
Groundnut	-	609	-
Sunflower	17,680	23,000	40,000
Safflower	-	2,440	10,650
Soybean	963	740	-

Source: NAFED office, Bangalore.

An analysis of the institutions involved in the market intervention operations indicates five important issues. First, the multiplicity of the institutions complicates the Market Intervention Scheme (MIS) operations and therefore, it cannot be effective. Second, there is a considerable lag in the felt need about the operations and actual starting of the procurement. The lapse of time between these two makes the intervention ineffective. Third, the institutions are highly bureaucratic and therefore, involve long procedures before entering into the market. Four, they certainly make profits out of their operations but are rarely allowed to have freedom of intervention. Last, the infrastructure provided to these agencies is not adequate, but these institutions have been over-staffed both for the operations as well as infrastructure.

2.5 Market Infrastructure:

Inadequacy of market infrastructure has been the main reason for market imperfection. A few studies have shown that owing to the new impetus on the infrastructure front, there has been significant increase in horizontal and vertical integration of agricultural markets. It has also been pointed out that now larger share of the marketable surplus reaches the market and most of the markets have the needed basic facilities. However, lot remains to be done in creating adequate marketing infrastructure in rural areas. It is high time now that the investment in this section comes from private sources. Conducive environment for attracting private investment needs to be created.

It has been estimated by the Expert Committee on Agricultural Marketing appointed by the Ministry of Agriculture, Government of India, that to create adequate marketing infrastructure, an investment of Rs. 268 thousand crores would be needed during the next decade (GoI, 1997). It is essential that the private sector participates in this important activity as the gains out of this will, otherwise, go to the undeserving traders due to lack of competition. But the legal framework has to be more conducive for such initiative. In some of the states, steps are taken to create an amalgam of cooperatives and private

traders. The scale of these schemes needs considerable expansion to realize the investment potential in agricultural marketing infrastructure.

The agricultural market infrastructure in Karnataka has been inadequate to handle the situation squarely. It comes out from Tables 2.5 and 2.6 that it is not only that the infrastructure is inadequate but it also impacts the turnover from the markets. As can be seen from the table, the State has only 1.08 main-markets per lakh hectares of gross cropped area as against 3.7 markets in the country. The density of main and subsidiary markets together works out as 3.74 markets per lakh hectares of ESA. But even that is possibly spread, thinly.

Table 2.5: Regulated Agricultural Main Markets in Karnataka and India.

Year	Number of Markets			
	Total		Per lakh Ha of GSA	
	Karnataka	India	Karnataka	India
1990-91	116 (1.75)	6,640	0.957	3.572
1991-92	116 (1.72)	6,738	0.986	3.697
1992-93	120 (1.72)	6,772	0.968	3.648
1993-94	122 (1.79)	6,809	0.983	3.653
1994-95	124 (1.81)	6,836	0.997	3.647
1995-96	131 (1.88)	6,968	1.053	3.718
1996-97	135 (1.94)	6,968	1.084	3.718

Note: 1) Figures in parenthesis are % to all India.
2) * Not available, hence/earlier figures taken

Sources: 1. Statistical Abstract of Karnataka for various years, Directorate of Economics and Statistics, Bangalore.
2. Fertiliser Association of India, New Delhi. 1997.
3. GOI 1997b.

Table 2.6: Agricultural Marketing Activities in Karnataka: Some Indicators

Year	Main Markets (Nos)	Sub Markets (Nos)	Total Markets (Nos)	Total Markets per Lakh ha. of GSA	As % of Main Markets in India	Annual Turnover Value for Total Markets (Rs. in Lakhs)
1990-91	116	295	411	3.392	1.747	595.63
1991-92	116	303	419	3.563	1.722	762.46
1992-93	120	304	424	3.421	1.772	745.82
1993-94	122	312	434	3.497	1.792	837.99
1994-95	124	312	436	3.504	1.814	NA
1995-96	131	325	456	3.665	1.880	NA
1996-97	135	331	466	3.745	1.937	NA
1997-98	NA	NA	NA	NA	NA	NA
1998-99	143	NA	NA	NA	NA	6,500.21
1999-00	143	NA	NA	NA	NA	6,647.81
2000-01	143	NA	NA	NA	NA	7,512.21
2001-02	143	NA	NA	NA	NA	7,902.39

Sources: 1. *Statistical Abstract of Karnataka* for Various Years, Directorate of Economics and Statistics, Bangalore.
2. Fertilizer Association of India, 1997.
3. GOI 1997b

2.6 Regulated Markets and Market Yards

The Department of Agricultural Marketing is continuously engaged in improving the functioning of the Agricultural Marketing System in the State. The main objective of the Department is to regulate the marketing of agricultural produce and create a competitive marketing environment for price stability of the notified agricultural produce in the State. The Department of Agricultural Marketing has established 141 main markets and 342 sub-markets in the State (see Table 2.7). These markets handled a turnover of Rs.7,512 crores of agricultural produce during the year 2000-01. The regulated markets have their own grading centres. The agriculture produce is put to sale after grading into different qualities. But despite the interventions we cannot firmly say that all the imperfections are totally eliminated. These include: (i) post-harvest glut in the market due to low and consequent price collapse; (ii) inter-locking of credit and commodity markets; (iii) inefficiency in grading and packaging; (iv) non-issue of sale-slips to the farmers in some markets; (v) high-handedness of Agricultural Produce Market Committees (APMCs) in providing marketing services; and (vi) creating conditions such that the farmer cannot go back from the market yard without selling the product.

Table 2.7: Regulated Markets by Districts in the Year 2000-01

Districts	Main Markets	Sub Markets	Total	Turnover (Rs in Crores)
Bangalore (u)	2	6	8	1061.21
Bangalore (R)	3	11	14	45.31
Bagalkote	5	15	20	159.28
Bellary	6	14	20	229.33
Belagam	10	33	43	343.94
Bijapur	3	13	16	176.97
Bidhar	5	9	14	117.02
Chamrajanagara	3	4	7	64.21
Chikkamagalur	5	10	15	107.23
Chitradurga	4	10	14	218.91
Davangere	6	8	14	274.56
D Kannada	5	3	8	405.91
Dharwad	5	12	17	207.32
Gadag	5	17	22	166.45
Gulburga	7	22	29	183.74
Hassan	6	16	22	139.71
Haveri	6	12	18	410.74
Kodagu	3	3	6	109.18
Kolar	8	15	23	150.77
Koppal	4	13	17	587.37
Mandya	4	9	13	159.41
Mysore	7	7	14	315.70
Raichur	4	11	15	540.64
Shimoga	4	15	19	724.28
Tumkur	10	23	33	239.85
Udipi	3	4	7	64.73
U.Kannada	8	27	35	308.44
Total	141	342	483	7,512.21

Note: Data for two markets was not available.

Source: Karnataka State Marketing Board, Bangalore.

2.7 Storage Capacity

The State has godowns to store about 3.40 lakh metric tonnes of grains. This is neither sufficient nor well spread in the State (see Table 2.8). It can be seen from the table that Kodagu and Chamarajanagar districts have the lowest capacity whereas Bangalore, Gulbarga, Tumkur and Shimoga are among the highest capacity districts. Large number of districts have the storage capacity between one to three thousand tonnes and only a few have the capacity exceeding five thousand tonnes.

Table 2.8: Total Number of Godowns Owned, Hired, Govt. and Private. : 2000-01

(Capacity in MTs)

Districts	Owned by KFCSC		Govt. Godowns		TAPCMS Godowns Hired		Private Godowns Hired		Total Godowns	
	Numbers	Capacity	Numbers	Capacity	Numbers	Capacity	Numbers	Capacity	Numbers	Total Capacity
Bagalkote	0	0	0	0	4	1,000	3	750	7	1,750
Bangalore	7	7,500	2	500	2	900	6	2,500	17	11,400
Belgaum	0	0	5	3,150	0	0	1	250	6	3,400
Bellary	0	0	1	1,000	7	2,650	0	0	8	3,650
Bidar	2	800	1	350	2	1,650	1	600	6	3,400
Bijapur	1	300	2	800	1	300	1	200	5	1,600
Chamarajanagar	1	300	0	0	1	300	1	300	3	900
Chikmagalur	0	0	2	800	1	600	2	350	5	1,750
Chitradurga	0	0	2	460	2	800	0	0	4	1,260
D Kannada	0	0	0	0	4	1,200	0	0	4	1,200
Davanagere	0	0	1	440	6	2,130	0	0	7	2,570
Dharwad	0	0	1	500	4	1,050	0	0	5	1,550
Gadag	0	0	0	0	5	1,420	2	600	7	2,020
Gulbarga	3	900	4	3,400	3	2,100	1	200	11	6,600
Hassan	0	0	0	0	8	3,040	1	400	9	3,440
Haveri	0	0	1	600	2	540	2	600	5	1,740
Kodagu	0	0	0	0	1	300	1	280	2	580
Kolar	0	0	2	900	6	2,300	1	250	9	3,450
Koppal	0	0	1	500	3	2,400	0	0	4	2,900
Mandya	0	0	1	2,000	0	0	3	1,000	4	3,000
Mysore	0	0	0	0	3	780	5	2,700	8	3,480
Raichur	0	0	4	3,650	2	500	0	0	6	4,150
Shimoga	2	10000	1	400	6	1,600	1	300	10	12,300
Tumkur	0	0	2	2,000	3	900	4	3,100	9	6,000
U Kannada	1	800	1	1,000	2	850	0	0	4	2,650
Total	17	20,600	34	22,450	78	29,310	36	14,380	165	86,740

Source: Office of the Karnataka Food and Civil Supplies Corporation, Bangalore.

FCI is the agency to procure major cereals, stock them and release to the public distribution system in the State of Karnataka. These operations require huge capacity godowns. In Karnataka, FCI has about 3.4 lakhs MT capacity of storage.. The location of the FCI godowns and their capacity is given in Table 2.9.

Table 2.9: District-wise and Location-wise Godown Capacity in Karnataka: 2001
(Quantity in MT)

District	Food corporation	Owned	Hired	Total
Bangalore	Bangalore	1,37,090		1,37,090
Kolar	KGF	6,250		6,250
Kodagu	Madikere	13,500		13,500
Mandya	Mandya	9,610		9,610
Mysore	Mysore	13,000		13,000
Tumkur	Tumkur	20,000	3,750	23,750
Chamrajanagar	Chamarajanagar	11,640		11,640
Udupi	Udupi	10,000		10,000
Dharwad	Dharwad	42,400		42,400
Bellary	Bellary	40,000		40,000
Raichur	Raichur		3,700	3,700
Koppal	Koppal	5,000		5,000
Shimoga	Shimoga	19,620	5,000	24,620
Total		3,28,110	12,450	3,40,560

Source: Same as in Table 2.7

2.8 Cost of State Intervention in Market

The price intervention scheme in the form of Minimum Support Price (MSP) was introduced during the mid-sixties. The scheme operated initially to procure grains for the purpose of Public Distribution System (PDS). After the PDS became more reliable the emphasis of MSP shifted to act as price insurance device. This was to provide the farmers a psychological back up. However, it failed this expectation miserably during the last five years.

There has been a considerable increase in the quantities handled by the agricultural marketing system during the last fifty years owing both to increase in output and increase in the marketed surplus-output ratios of various agricultural commodities. The overall marketed surplus-output ratio is estimated to have gone up from 33.4 per cent in 1950-51 to 64.1 per cent in 1999-00. During this period, the marketed surplus of cereals went up from 11.5 million tonnes to 95.8 million tonnes, pulses 3.9 to 9.5 million tonnes, oilseeds 3.8 to 19.5 million tonnes, fruits and vegetables from 38.2 million tonnes (1980-81) to 118.6 million tonnes and of milk increased from 8.5 million tonnes to 48.6 million tonnes (Acharya, 2000).

A large number of farmers' cooperative marketing organizations have been promoted for undertaking marketing and processing functions. These have played important role in the improvement of the performance of domestic market of farm products

and inputs by increasing competition in the market. In addition to APMC, there are various apex level cooperative bodies that work in the marketing sector. The main cooperative organizations include National Agricultural Cooperative Marketing Federation (NAFED), Tribal Cooperative Marketing Federation (TRIFED), National Cooperative Development Corporation (NCDC), State Marketing Federations (general as well as commodity specific), and district level marketing cooperatives and primary cooperative marketing societies (general as well as commodity-specific).

Table 2.10: Procurement and Quantity Marketed in Regulated Markets – 2000-01

Crops	Procurement (In 000 Tonnes)	Quantity Marketed in Regulated Markets (in 000 Tonnes)	Production (in 000 Tonnes)	Procurement as % of Production	% Produce Marketed in Regulated Markets
Maize	361	909.98	2059	17.53	44.20
Ragi	15	79.18	1736	0.86	4.56
Bajra	4.5	42.02	229	1.97	18.35
Rice	207.36	2198.73	3619	5.73	60.76
Groundnut	609	17.18	1026	0.06	1.67

Source: (1) Karnataka State Agriculture Marketing Board Annual Reports
(2) Karnataka Economic Survey 2000-01
(3) Food and Civil Supply Department

With the 73rd Amendment to the Constitution, now another tier of institutional framework is provided to deal with the problems at the village and taluka levels. We have 2.2 lakh gram panchayats, 4,567 block panchayats and 349 zilla parishads. Their role can be quite significant in the development of primary markets removing the market inadequacies, creating infrastructure marketing extension activities, and dissemination of market information. This source, therefore, can provide a strong institutional platform. However, the panchayats so far, have been trying to provide drinking water, drainage and sanitation facilities, street lights, laying and repairing roads, repair of some old structures in the village, etc., but not providing marketing facilities in any way. Therefore, their involvement in providing marketing facilities is only recorded on paper, but in real terms not even 1 per cent of these have been moving in that direction.

The credit cooperative societies provide a good back up support to the marketing infrastructure. In fact, in the rural areas, credit cooperatives and market cooperatives work hand in hand. The growth of credit cooperatives in agriculture in most of the states in India as well as Karnataka has not been keeping pace with the marketing cooperatives.

The non-agricultural sector is taking a lead over agricultural sector and that creates inequality between the two sectors.

2.9 Cropping Pattern

Karnataka State has a typical composition having a large share of its area under severe climatic constraints with a highly diversified agricultural sector. The high density of low value and high-risk crops typifies the State agriculture. On the contrary and at the same time, the state has entered in a big way in the high-tech agriculture, only next to a few other states in the country. Therefore, the price incentive structure becomes an important component of agricultural policy in the State. The crop economy of the State has a few typical characteristics. It has a predominantly cereal dominant crop pattern with coarse grains having the largest share of area under them. These crops generally have low yield rates and lower prices and thus commercial crops are reported to support the agricultural economy. The growth pattern depends upon the performance of monsoon and the availability of water.

The area under total cereals in the state stood at 45 per cent (1999-00) which came down by 11 per cent from 56 per cent during 1955-58. The decline was mainly owing to reduction in area under jowar and bajra. Incidentally, these two crops were among the lowest priced crops under MSP. The area under paddy increased by 3 per cent, from 8.7 to 11.6 per cent between 1955-58 and 1990-93 and stabilized around that level after that. The area under maize increased from about 0.1 per cent in 1955-58 to 2.5 per cent of the gross cropped area in 1990-93 and further to 4.31 per cent. Though there is a decline in the proportion of area under cereals, paddy, jowar, bajra, maize and wheat continued to be the dominant cereal and millet crops in the State (Table 2.11).

Table 2.11: Changes in Cropping Pattern

(Area as per cent to GCA)

Crops	1955-58	1979-82	1990-93	1997-00
Rice	8.68	10.41	10.86	11.60
Wheat	2.91	3.17	1.80	2.16
Jowar	25.45	19.04	17.76	15.61
Bajra	5.11	5.67	2.98	3.04
Ragi	8.64	10.15	8.71	7.95
Maize	0.10	1.40	2.50	4.31
Total Cereals	56.46	53.28	44.97	45.31
Gram	1.55	1.32	1.90	--
Tur	2.80	3.31	3.60	3.74
Total Pulses	12.64	14.19	13.59	14.62
Groundnut	8.80	7.74	10.53	9.95
Sesamum	--	1.02	1.09	--
Safflower	--	1.48	1.35	--
Sunflower	--	1.00	10.22	--
Total Oil-Seeds	12.08	12.56	24.39	19.56
Cotton	10.21	9.31	4.88	4.83
Sugarcane	0.52	1.50	2.32	2.71
Chillies	1.03	1.40	1.36	--
Tobacco	0.39	0.44	0.47	0.64
Coconut	0.86	1.59	2.02	-
Arecanut	0.29	0.50	0.55	-
Banana	--	0.35	0.27	-
Citrus	--	0.28	0.19	-
Mango	--	0.42	0.45	-
Coffee	0.61	1.03	1.19	-
Mulberry	--	1.07	1.29	-
Others	16.27	13.47	9.51	-
(Total GCA in Lakh ha)	(104.3)	(110.3)	(121.9)	(120.02)

Source: Directorate of Economics and Statistics, Govt. of Karnataka, Bangalore.

Cereals in general dominate the cropping pattern of the state. Rice is the major cereal crop in the Coastal and Malnad districts whereas, jowar and ragi are important staple food grains in northern and southern districts of Karnataka respectively. Area under pulses has remained more or less unchanged (around 14 per cent) during the last four decades. The introduction of technology mission for oil-seeds and favourable price regime helped in the expansion of area under oilseeds. The area under oil-seeds in the State, which was around 12 per cent till late 70s, increased to 24.4 per cent after 1980s but went down to 19.6 per cent in the 90s. The gains in the oil-seeds area during the eighties were at the cost of cotton. The area under groundnut and sunflower in the state shared about 4.6 and 1 per cent of the total area under respective crops in the country. Cotton is an important cash crop of the State. The area under cotton declined from 10 per cent to 5 per cent and much of the decline came after 1980-81. The area under other cash crops such as sugarcane, coconut, arecanut, etc., has increased over the years (See Table 2.12).

Table 2.12: Compound Annual Growth Rates of Area under the Crops from the Years 1955-58 to 1999-2000

Crops	Compound Annual Growth Rate
Rice	0.96
Wheat	-0.35
Jowar	-0.77
Bajra	-0.84
Ragi	0.13
Maize	9.06
Total Cereals	-0.18
Gram	0.95
Tur	0.96
Total Pulses	0.64
Groundnut	0.59
Sesamum	1.20
Safflower	0.06
Sunflower	18.91
Total Oil-seeds	1.39
Cotton	-1.34
Sugarcane	4.06
Chillies	1.15
Tobacco	1.42
Coconut	2.69
Arecanut	2.12
Banana	-1.13
Citrus	-2.03
Mango	1.21
Coffee	2.19
Mulberry	2.07
Others	-1.00
Total GCA	0.31

Source: Based on the data collected from the Directorate of Economics and Statistics, Govt. of Karnataka, Bangalore.

2.10 Irrigation

Karnataka is not among the States, which have sizeable area under irrigation. Despite its predominant drought-prone characteristic the State has only about 26 per cent of its gross areas sown under irrigation (See Table 2.13). Among the districts of Karnataka, ten districts have the distinction of receiving irrigation to more than 30 per cent of their Net Sown Area, a threshold indicated by the Second Irrigation Commission for protective irrigation. Eight districts have more than 20 per cent of net sown area under irrigation and the remaining nine districts have net irrigated area less than 20 per cent of

their net sown area. Quite ironically these nine districts are the core drought-prone areas of the State.

Canal irrigation is the major source of irrigation in the State, followed by well irrigation (including bore/tube wells). Across the districts canal irrigation is a prominent source in about 10 districts where more than 50 per cent of their net sown area comes through canal irrigation. Groundwater irrigation is popular in the drought-prone regions of the State and these include Bidar, Bijapur, Chitradurga, Haveri, Kolar and Tumkur (see Table 2.14). Tank irrigation has been losing ground very fast and it is a major source in Shimoga, Hassan and Chickmagalur districts.

Table 2.13: District-wise Per cent of Net and Gross Irrigated Area:
1999-2000

District	District	% of Net Area Irrigated to Net Area Sown	% of Gross Irrigated Area to Gross Cropped Area
Bagalkote		42.42	41.21
Bangalore Rural		26.02	26.53
Bangalore Urban		17.59	23.41
Belgaum		40.71	39.98
Bellary		32.86	41.06
Bidar		10.22	9.32
Bijapur		17.23	18.35
Chamarajanagar		30.29	29.64
Chickmagalur		8.69	11.53
Chitradurga		15.54	15.45
D. Kannada		51.63	44.69
Davangere		34.4	42.8
Dharwad		13.14	12.1
Gadag		17.47	15.91
Gulbarga		13.67	12.44
Hassan		21.69	22.46
Haveri		20.79	18.35
Kodagu		2.1	2.29
Kolar		18.84	23.33
Koppal		30.55	34.81
Mandya		43.79	49.42
Mysore		29.24	28.34
Raichur		28.71	34.35
Shimoga		61.44	64.16
Tumkur		19.18	21.76
Udipi		35.27	28.38
U. Kannada		22.1	19.27
Karnataka		24.83	26.14

Source : Karnataka Socio-Economic Indicators 2001 & Past Issues, Directorate of Economics & Statistics, Govt. of Karnataka.

Table 2.14: Percentage of Net Irrigated Area by Sources in the Districts of Karnataka in 1999-2000

Districts	Canals	Tanks	Wells	Tube /Bore Wells	Lift Irrigation	Other Sources	Total
Bangalkote	35.08	1.05	14.14	13.61	0.52	35.60	100.00
Banglore Rural	11.54	23.08	21.15	42.31	1.92	..	100.00
Banglore Urban	..	27.27	13.64	59.09	..	..	100.00
Belgaum	29.77	1.16	27.46	16.76	10.12	14.74	100.00
Bellary	60.63	1.88	7.50	20.63	6.88	2.50	100.00
Bidar	..	2.63	68.42	26.32	..	2.63	100.00
Bijapur	..	3.73	70.15	3.73	..	22.39	100.00
Chamarajanagar	25.53	10.64	36.17	25.53	2.13	..	100.00
Chickmagalur	25.00	29.17	4.17	12.50	..	29.17	100.00
Chitradurga	4.62	4.62	3.08	87.69	..	..	100.00
D. Kannada	..	2.90	36.23	4.35	1.45	55.07	100.00
Davangere	60.15	3.76	3.76	24.81	6.77	0.75	100.00
Dharwad	59.09	6.82	2.27	22.73	..	9.09	100.00
Gadag	50.77	3.08	10.77	27.69	4.62	3.08	100.00
Gulbarga	74.52	1.91	17.83	3.18	..	2.55	100.00
Hassan	35.44	35.44	2.53	18.99	..	7.59	100.00
Haveri	7.89	19.74	6.58	39.47	23.68	2.63	100.00
Kodagu	66.67	..	..	..	..	33.33	100.00
Kolar	..	11.11	26.98	61.90	..	..	100.00
Koppal	55.56	1.85	22.22	13.89	5.56	0.93	100.00
Mandya	80.37	7.48	9.35	1.87	0.93	..	100.00
Mysore	81.42	7.08	10.62	0.88	..	..	100.00
Raichur	82.07	4.14	11.72	0.69	1.38	..	100.00
Shimoga	34.33	48.51	2.24	5.22	1.49	8.21	100.00
Tumkur	3.57	27.68	13.39	55.36	..	..	100.00
Udipi	..	5.71	37.14	..	2.86	54.29	100.00
U. Kannada	..	39.13	21.74	..	..	39.13	100.00
Karnataka	39.03	9.62	18.73	18.92	3.57	10.13	100.00

2.11 Area, Production and Yield of Rice and Wheat

At the macro-level, cash crops shared relatively larger irrigated area when compared with foodgrains across the farm sizes and social groups. The proportion of irrigated area under cereals was relatively higher on small farms when compared to large farms and the opposite was true in the case of oil-seeds. One can visualise three broad trends in the area allocation across crops. Firstly, it is found that the area under cereals and millets is decreasing over the years and this area is largely transferred to commercial crops. Secondly, large share of resources (in terms of irrigation and inputs) is allocated to irrigated high value crops and thus, the yield rates of irrigated crops are comparable to the national averages. Lastly, in northern Karnataka and in the rainfed portions of southern

Maidan the crop pattern is largely diversified whereas the coastal Karnataka and irrigated regions seem to prefer mono cropping.

Production trends of important crops have been analysed here with the help of compound rates of growth for production and productivity for the period 1955-56 to 1993-94, and separately for 1990 to 2000. It is observed that the production of cereals in the State has grown at 2.3 per cent per annum during the period 1955-56 and 1993-94. The entire growth has been contributed by the yield as area under cereals in the State decelerated during this period. The expansion in area under cereals during 1955-56 through 1967-68 resulted in significant growth in cereal production in the State (Tables 2.11 and 2.12). The cereal production in the State increased marginally (by 0.0116 per cent per annum) between 1980-81 and 1990-91 and this miniscule growth was due to lower levels of production during the late 1980s. Concerned with this, the State government appointed an Expert Committee (under the Chairmanship of Sri T R Satish Chandran) to probe into the factors responsible for stagnation in agricultural production. However, there was a recovery during 1992-93 and an analysis of production data for 1980-81 through 1993-94 indicated a growth rate of around 1.78 per cent. It is essential to underscore that the growth in production during this period came mainly through yield improvements. But the deceleration was again visible during the nineties. The role of price incentives is certainly important in this structure of growth.

Table 2.15: District-wise Growth Rates of Production under Principal Crops from 1990-91 to 1998-99

Paddy				Ragi				Jowar				Tur			
High Growth		Low Growth		High Growth		Low Growth		High Growth		Low Growth		High Growth		Low Growth	
D. Kannada	21.69	U. Kannada	1.50	Mandya	10.76	Belgaum	1.08	U. Kannada	11.31	Gulbarga	1.83	D. Kannada	14.42	Kolar	1.55
Chitradurga	13.11	Kolar	-0.09	Mysore	6.55	Chitradurga	1.01	D. Kannada	8.75	Chitradurga	0.93	Gulbarga	14.15	Chikmagalur	0.94
Raichur	9.61	Kodagu	-0.37	Chikmagalur	4.88	Bidar	0.00	Bijapur	5.06	Belgaum	-0.78	U. Kannada	4.74	Bidar	-3.11
Bellary	9.26	Bidar	-8.69	Bangalore	3.23	Bijapur	0.00	Bidar	3.82	Chikmagalur	-1.97	Tumkur	3.76	Chitradurga	-4.44
Tumkur	8.99	Dharwad	-12.30	Hassan	2.80	Raichur	0.00			Raichur	-2.63			Bangalore	-5.42
Mysore	8.31	Bijapur	-13.00	Tumkur	2.64	D. Kannada	-0.66			Hassan	-3.56			Mandya	-5.65
Gulbarga	8.20			Kolar	2.56	Bellary	-5.25			Bellary	-3.73			Belgaum	-5.66
Hassan	7.10					Dharwad	-6.44			Mandya	-5.50			Mysore	-7.67
Mandya	4.34					U. Kannada	-8.42			Mysore	-6.93			Hassan	-7.84
Shimoga	3.53					Shimoga	-10.47			Dharwad	-7.00			Raichur	-8.44
Bangalore	3.12					Kodagu	-16.12			Tumkur	-12.31			Bijapur	-10.06
Belgaum	2.68					Gulbarga	-18.47			Shimoga	-17.30			Bellary	-12.93
Chikmagalur	2.41													Shimoga	-16.03
Groundnut				Sugarcane				Maize							
High Growth		Low Growth		High Growth		Low Growth		High Growth		Low Growth					
Mysore	9.31	Bellary	1.73	Bijapur	14.64	Hassan	1.11	Chitradurga	20.32	Bidar	4.74				
Hassan	6.01	Bangalore	-0.99	Dharwad	12.09	Bidar	0.56	Raichur	15.14	Mandya	3.01				
D. Kannada	4.65	Belgaum	-2.39	Mysore	7.65	Raichur	-0.64	Shimoga	15.03	Hassan	2.72				
Chikmagalur	4.31	Kolar	-3.11	Gulbarga	7.55	U. Kannada	-0.79	Bellary	11.40	Chikmagalur	2.01				
Chitradurga	4.31	U. Kannada	-3.25	Belgaum	6.90	Chikmagalur	-1.51	Tumkur	10.48	Coorg	1.96				
Dharwad	4.18	Bijapur	-6.46	Chitradurga	3.60	Bangalore	-2.20	Kolar	9.83	U.Kannada	-12.10				
Gulbarga	2.56	Bidar	-7.25	Bellary	2.10	Mandya	-3.00	Mysore	9.65	Bangalore (u)	-22.51				
Tumkur	2.32	Raichur	-7.35			Shimoga	-4.15	Bijapur	7.50						
		Mandya	-8.90			Tumkur	-4.22	Dharwad	6.41						
		Shimoga	-10.48			Kolar	-7.15	Gulbarga	5.85						
		Kodagu	-40.09			D. Kannada	-12.24	Bangalore (R)	5.51						
						Kodagu	-23.92	Belgaum	5.31						

Table 2.16: District-wise Growth Rates of Area under Principal Crops from 1990-91 to 1998-99

Paddy		Ragi		Jowar				Tur					
High Growth		Low Growth		Low Growth		High Growth		Low Growth		High Growth		Low Growth	
Chitradurga	8.65	U Kannada	0.58	Mandya	0.98	U. Kannada	2.10	Bijapur	0.61	Tumkur	6.33	Gulbarga	0.23
Bellary	5.41	Shimoga	0.36	Tumkur	0.72			Bidar	0.28	Kolar	3.30	Chitradurga	-0.09
Raichur	5.37	Belgaum	0.24	Kolar	0.16			Gulbarga	0.23	Bidar	2.77	Mandya	-1.84
Mysore	4.85	Chikmagalur	-0.58	Mysore	0.15			Dharwad	-2.26	U. Kannada	2.20	Hassan	-1.93
Hassan	3.62	D. Kannada	-1.32	Chikmagalur	-0.15			Chitradurga	-2.75	Chikmagalur	2.08	Raichur	-2.85
Tumkur	2.30	Kodagu	-1.84	Bangalore	-0.92			Raichur	-3.10	Mysore	1.44	Belgaum	-3.79
Mandya	1.98	Gulbarga	-2.05	Hassan	-0.98			Belgaum	-3.11			Dharwad	-4.67
Dharwad	1.25	Bangalore	-2.56	Chitradurga	-2.63			Chikmagalur	-6.61			Bangalore	-5.29
		Kolar	-5.09	Belgaum	-5.57			Bellary	-8.51			Bijapur	-6.58
		Bidar	-10.95	Bellary	-10.21			Mysore	-9.23			Bellary	-6.77
		Bijapur	-17.38	Dharwad	-10.78			Mandya	-9.35			Shimoga	-8.42
				Shimoga	-11.27			Hassan	-11.59				
				U. Kannada	-13.49			Tumkur	-12.29				
				Kodagu	-17.39			Shimoga	-18.43				
				Gulbarga	-23.36								
Groundnut				Sugarcane				Maize					
High Growth		Low Growth		High Growth		Low Growth		High Growth		Low Growth			
Mysore	2.94	Chitradurga	0.64	Bijapur	7.89	Bellary	0.11	Chitradurga	7.98	Hassan	0.89		
Bellary	2.48	Chikmagalur	0.49	Dharwad	6.85	Bidar	-0.13	Shimoga	5.24	Mandya	0.84		
Hassan	2.07	Dharwad	0.46	Mysore	6.65	Hassan	-0.15	Raichur	4.82	Chikmagalur	0.84		
		D. Kannada	0.31	Chitradurga	5.48	U. Kannada	-1.69	Bellary	4.39	Gulbarga	0.75		
		Gulbarga	-0.68	Gulbarga	3.80	Chikmagalur	-2.32	Tumkur	3.98	Bangalore (R)	0.69		
		Bangalore	-1.13	Belgaum	3.13	Bangalore	-2.91	Kolar	2.63	Coorg	-0.07		
		Kolar	-2.05			Mandya	-3.79	Bidar	2.47	Bangalore (U)	-2.07		
		Bijapur	-2.54			Kolar	-4.82	Mysore	2.33	Bijapur	-3.80		
		Belgaum	-2.92			Raichur	-5.58	Belgaum	2.33	U. Kannada	-4.30		
		Tumkur	-2.94			Shimoga	-6.58	Dharwad	2.29	Bangalore (R)	0.69		
		Raichur	-3.11			D. Kannada	-6.68						
		U. Kannada	-5.39			Tumkur	-7.32						
		Mandya	-6.61										
		Shimoga	-11.13										
		Bidar	-11.57										
		Kodagu	-39.56										

Table 2.17: Growth Rates in Crop Economy: 1990-91 to 2000-01

(Per Cent Per Annum)

Crops	Production.	Productivity
Rice	3.04	1.72
Ragi	2.02	3.65
Jowar	-0.25	1.77
Bajra	-9.18	-7.89
Maize	6.86	-0.83
Wheat	4.78	0.77
Minor Millets	-5.43	1.35
Total Cereals	-0.03	-0.17
Tur	5.27	4.89
Total Pulses	-1.11	-4.84
Total Foodgrains	-0.12	-1.12
Groundnut	-0.41	1.06
Total Oil-seeds	-9.56	-5.98
Sugarcane	1.49	2.21
Cotton	-3.42	-0.42
Tobacco	4.75	-0.93

Source: Based on the data collected from the Directorate of Statistics, Government of Karnataka.

The growth performance clearly indicates the slow growth of crops and crop groups. The performance is influenced by technology, prices, marketability and relative crop economy. Among these factors, the role of prices and not income, which is quite crucial (Deshpande 1996). While explaining the performance of slow growth crops, the role of relative prices as well as administered prices becomes crucial and significant. Even between these two variables, the administered prices reflect the policy direction and a well thought- over policy to influence the decision criteria. Therefore, the analysis of the role of administered prices becomes pivotal to understand the growing imbalances.

2.12 Production, Market Arrivals and Procurement

In the state there is no procurement of agricultural produce on annual basis except rice procured by FCI. Karnataka being a State with highly heterogeneous cropping system, many crops that come under MSP operations are grown in the state and the produce of the crops procured varied from year to year. Several attempts were made to collect time-series data on procurement of produce of crops. But, no reliable data could be obtained from the procurement agencies. Even the state government appointed Agricultural Price Commission (under Chairmanship of Prof Bisaliah) also has its apprehension on the reliability of

procurement data. Hence, we have not presented any analysis over time of procurement data except for rice.

The procurement of rice in the state varied from 2.84 per cent of production to 5.73 per cent of production during the period 1997-98 to 2000-01. Across the crops highest procurement was effected for maize and rice. The procurement of other grains was marginal (See Table 2.18). The quantity marketed in regulated markets ranged from 42 per cent to 61 per cent of production during the four-year period. The trend clearly shows that farmers were increasingly relying on regulated markets.

Table 2.18: Procurement and Quantity Marketed : 2000-01

Crops	Procurement (in Thousand Tonnes)	Quantity Marketed (in Thousand Tonnes)	Production (in Thousand tonnes)	As Per cent of Production	
				Procurement	Marketed
Maize	361.0	910.0	2059	17.53	44.2
Ragi	15.0	79.2	1736	0.86	4.56
Bajra	4.5	42.0	229	1.97	18.35
Rice	207.6	220.0	3619	5.73	60.76
Groundnut	0.6	17.2	1026	0.06	1.67

Source: (1) Karnataka State Agriculture Marketing Board Annual Reports
(2) Karnataka Economic Survey 2000-01
(3) Food and Civil Supply Department

Table 2.19: Procurement and Quantity Marketed in Regulated Markets – Rice

Year	Procurement (in 000 Tonnes)	Quantity Marketed in Regulated Markets (in 000 Tonnes)	Production (in 000 Tonnes)	% Procured	% Marketed in Regulated Markets
1997-98	91.24	1487.00	3213	2.84	46.28
1998-99	100.43	1552.83	3657	2.75	42.46
1999-2000	111.04	1578.53	3635	3.05	43.43
2000-01	207.36	2198.73	3619	5.73	60.76

Source: Same as in Table 2.18

The grains procured during the year 2000-01 included maize, ragi, bajra, rice and groundnut (Table 2.18) and other oil-seeds (Table 2.19). The procurement as a percentage of production was highest for maize (17.5 per cent). The procurement was less than 2 per cent of the production for ragi, bajra and groundnut. The higher procurement for maize was due to bumper production during the year and fall in prices. The production of maize during 1998-99 was 16.7 lakh tonnes and it increased to 20.6 lakh tonnes during 2000-01. The additional production was 3.9 lakh tonnes and the procurement was 3.6 lakh tonnes. It is clear that the procurement helped to absorb the additional production. Direct

intervention of the government in the state in marketing of agricultural produce is only when there is bumper production of a crop. In normal production years, there is hardly any direct intervention of the government in the agricultural produce market.

Table 2.20: Procurement of Oil-seeds

Commodity	(in Tones)		
	1999-2000	2000-01	20001-02
Groundnut	-	609	-
Sunflower	17,680	23,000	40,000
Safflower	-	2,440	10,650
Soyabean	963	740	-

Source: Food and civil supplies Department

The agricultural produce is mainly marketed in regulated markets (Table 2.21). In 1998-99, 42.5 per cent of rice production in the state was sold in regulated markets and the percentage sold in the regulated markets increased to 60.8 per cent in the year 2000-01. About 42.6 per cent of foodgrains production, 49.9 per cent of pulses production and 27.2 per cent of oil-seeds production in the state was marketed through regulated markets. The commodities, which had lower dependency on regulated markets, were jowar and ragi. Jowar and ragi are staple food for many people in the state, jowar in northern Karnataka and ragi in southern Karnataka. These crops were mainly grown for domestic consumption and the marketed surplus of these crops is in the local private trade.

Table 2.21: Percentage of Produce Marketed in Regulated Markets

Crop/Year	1997-98	1998-99	1999-2000	2000-01
Rice	46.28	42.46	43.43	60.76
Wheat	25.54	8.73	16.95	33.79
Jowar	8.56	6.08	5.53	10.97
Bajra	10.83	15.39	17.22	18.35
Ragi	7.24	6.17	7.17	4.56
Maize	38.84	41.53	36.12	44.20
Tur	60.50	23.40	34.67	34.58
Groundnut	49.72	27.26	39.05	28.27
Cotton	50.38	34.32	34.68	41.42
Total Food grains	34.60	30.51	30.67	42.55
Total Pulses	58.42	45.29	41.80	49.89
Total Oil-seeds	40.82	39.35	34.47	27.19

Source: Annual reports of Karnataka State Agricultural Marketing Board

2.13 Price Movement of Selected Commodities

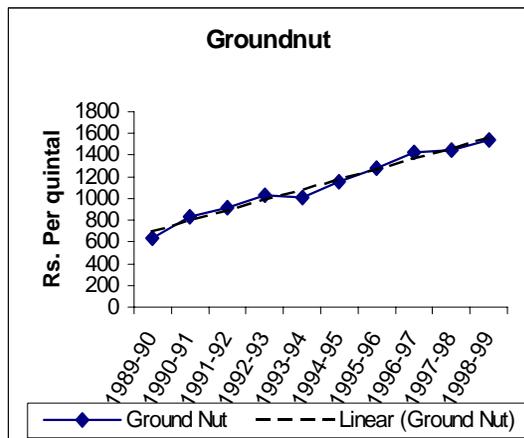
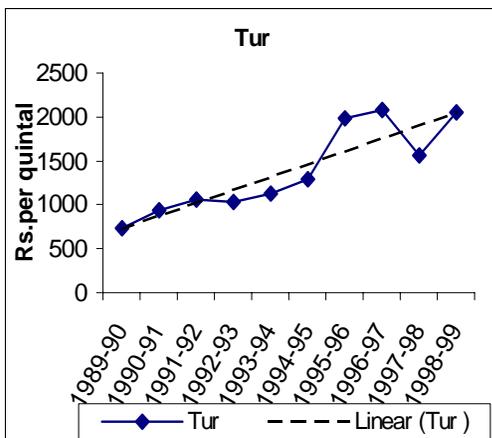
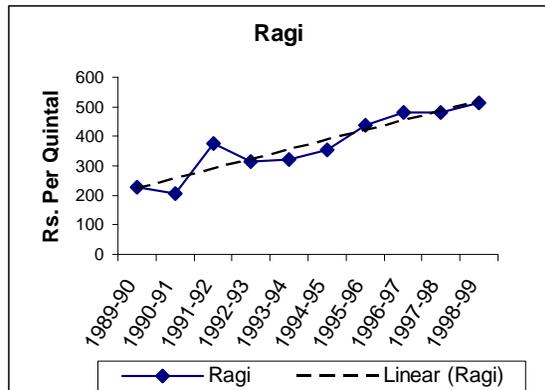
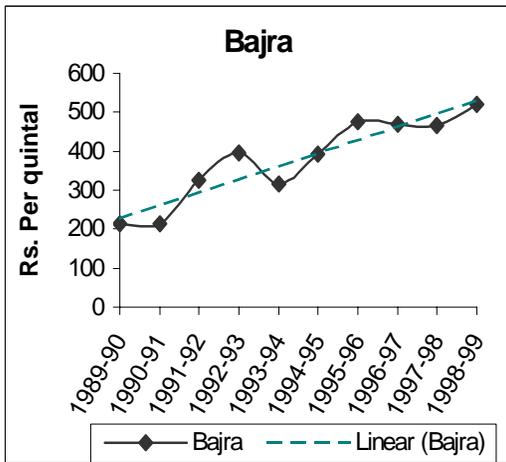
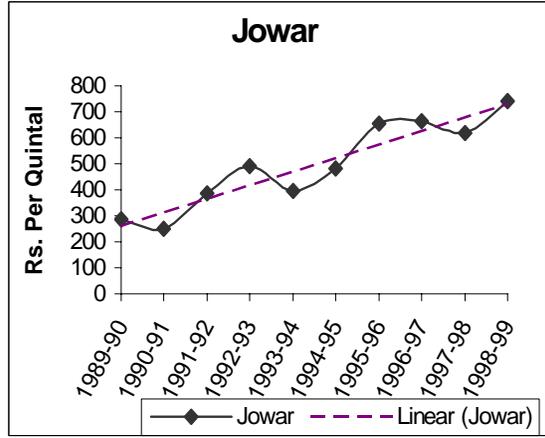
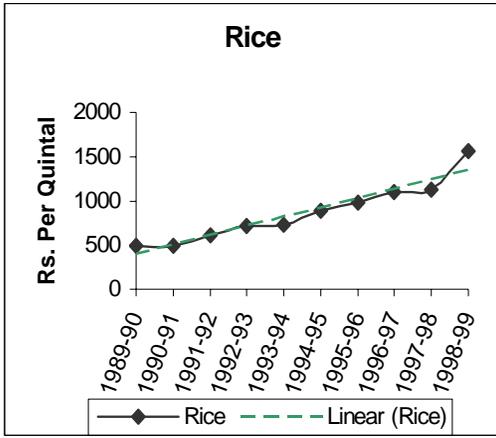
The movements in wholesale prices of certain agricultural commodities over the years 1989-99 are given in Table 2.22. The prices of all the commodities are seen to increase over the period. The linear trend of the prices has been depicted in Figure 2.1, which captures the movements in the prices for each commodity. The price of Rice has been increasing over the years steadily until 1997-98, and in 1998-99, it has taken a wide leap. In the case of Jowar, there has been a wide fluctuation in the prices over the period. Bajra also showed a similar trend, with higher prices during 1992-93, a decline in the following year and again it increased in the subsequent years. The price of Ragi had been high during 1991-92 and later, a decline in 1992-93 was observed which remained more or less constant during the remaining period. Wide increases in the prices of Tur had been seen after 1994-95 and in 97-98 a decline was noticed. The price of groundnut has been steady over the period except for a slight decline in 93-94. Maize price plunged severely during 1992-93, which again shot up in the subsequent years and witnessing minor downward fluctuations in 1996 and 1997.

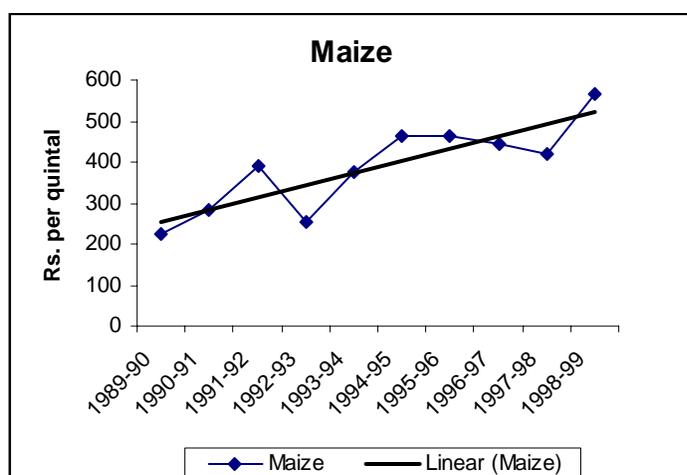
Table 2.22: Annual Average Wholesale Prices of Some Important Agricultural Commodities

Year	Rice	Wheat	Jowar	Bajra	Ragi	Gram	Tur	(Rs. Per Quintal)	
								Groundnut	Maize
1989-90	491	392	286	213	228	875	737	630	225
1990-91	489	410	248	215	207	909	941	832	283
1991-92	607	522	388	327	376	910	1060	916	389
1992-93	719	605	489	396	313	975	1031	1034	254
1993-94	729	603	395	315	322	1367	1133	1012	374
1994-95	886	658	480	391	355	1474	1286	1151	465
1995-96	978	699	654	477	438	1303	1978	1277	463
1996-97	1105	880	663	468	480	1570	2075	1430	442
1997-98	1132	937	618	465	481	1796	1564	1448	419
1998-99	1559	997	739	520	515	1703	2058	1541	565

Source: Statistical Abstract of Karnataka

Figure 2.1: Wholesale Prices of Certain Agricultural Commodities





2.14 Concluding Remarks

Karnataka being one among the states with significant share of its area under rainfed condition also confronts droughts frequently. It has a large proportion of its area categorised as drought-prone by the Second Irrigation Commission (1972) and the National Commission on Agriculture (1976). Therefore, quite naturally foodgrains and self-sustaining crop pattern dominates its agricultural economy. Commercialisation is emerging at a very slow pace and sporadically across the districts. There are a few districts where commercial crops dominate significantly and markets for these crops have developed. But in the regions with foodgrain dominant cropping pattern, this is yet to happen at the required pace. In fact, even in these regions the cropping pattern is turning towards commercial non-food horticultural crops. Regulated markets have recorded their presence in the rural areas but their density is not significant enough to map the marketable surplus. As a result, large part of agricultural marketing takes place through the traditional channels. Rice and maize are the two cereals that enter the markets significantly. But again that is confined to a few districts. Procurement through different agencies is sporadic and insignificant compared to the production as well as marketable surplus. As a result, the movements in the prices are also not very significant.

Annexure 2.1

GOVERNMENT OF KARNATAKA ORDER

Sub: Procurement of food grains through Minimum Support Prices fixed by Government of India.

- Ref :**
1. Government of India letter number 06.01.2000 FES, ES Date : 01.09.2000.
 2. Government order number , FCS 24 RPR 98 (P) 11 Date : 03.11.1998.

Preamble :

According to the circular form Govt. of India. Dated 01.09.2000 MSP for Kharif crops for the year 2000-01 are fixed. As mentioned in the state Govt.(2) order, Task Force committee are set up at state and district level for procuring food grains through MSP. Government will take all the adequate steps through MSP for food grains: cotton, Oil seeds, Cereals and pulses are procuring through Karnataka Food and Civil Supply Corporation, Cotton Corporation of India (CCI), Karnataka cooperative Oil seed growers Federation (KOF), National Agricultural Co-operative Market Federation (NAFED) and Karnataka State Co-operative marketing federation are working as sub agency under FCI and NAFED. If market prices of food grains : cotton, oil seeds and cereals are less than the minimum support prices then the above federations (FCI/NAFED) are interfere in to the market and order to the sub agencies to procure food grains from the farmers as usual in the every year. So, Examine the proposal and ordered as,

GOVERNMENT ORDER NO. FCS 13 RPR 2000 BANGALORE DATE: 04.10.2000

As stated the above region the Government of India has fixed MSP for below mentioned food grains. In the market, if market pries are less than the MSP for below mentioned crops & corresponding price then FCI order to sub agencies to procure.

<u>Sl.no.</u>	<u>Crops</u>	<u>MSP Rs./quintal</u>
1	Paddy (common)	510.00
2	Paddy (Grade A.)	540.00
3	Maize (FAQ)	445.00
4	Jowar	445.00
5	Bajra	445.00
6	Ragi	445.00
7	Tur (Arhar)	1200.00
8	Green gram	1200.00
9	Urad	1200.00
10	Groundnut	1220.00
11	Soyabean (Black)	770.00
12	Soyabean (Yellow)	865.00
13	Sesamum (FAQ)	1300.00
14	Sunflower	1170.00
15	Niger seed (FAQ)	1025.00
16	Cotton (F414,H777 & J34)	1625.00
17	Cotton H4	1825.00

Contd...

2. Government order no. FCS 24 RPR 98 section (2) dated : 03.11.1998 is set up the state level and district level task force committee and is also continued to 2000-01 kharif market season and ordered as the program should conducted under MSP.
3. As above stated if the prices of crops are below MSP then the below mentioned federations are interfere in the market and procure the crops from the farmers.

Corporation : Sub agencies of federations are set up as Nodal agencies

<u>Sl.no.</u>	<u>Crops details</u>	<u>Nodal agencies</u>	<u>Sub agencies</u>
1	Paddy (common) Paddy (Grade A.) Jowar, Bajra, Ragi And Maize (Karnataka State Co- operative Market Federation).	FCI	KFCSCLB 1. KFCSCLB 2. MARKFED
2	<u>Pulses</u> Tur, Green Gram Urad	NAFED	Karnataka State Co- operative Market Federation.
3	<u>Oil Seeds</u> Groundnut Soyabean (Black) Soyabean (Yellow) Sesamum Sunflower Niger seed	NAFED	Karnataka State Co- operative oil seed growers federation (KOF)
4	<u>Cotton</u> Cotton F-414 H-777 J-34	FCI	Cotton Corporation of India. (Hubli & Raichur).

3. Based on the opinion of Farmers for above mentioned crops for MSP is sold to the mentioned institutions

CHAPTER III

SALIENT AGRO-ECONOMIC CHARACTERISTICS OF SELECTED DISTRICTS

3.1 Introduction

As indicated earlier, two different districts were chosen for the purpose of primary survey viz., Raichur and Chitradurga districts. The districts are situated in central Karnataka region largely falling in the rainfed zone of Karnataka but in the region with good potential for development of markets and commercial crops. The district of Raichur is known for its agricultural predominance and despite adversely placed under climatic constraints, the district has achieved very well in stepping up the growth of its agricultural economy. Among the constraints, small and marginal farmers predominate the district's agrarian structure and this is further aggravated by the persistent drought situation in the district. Raichur has some area under irrigation but a large part of the district falls in the rain shadow zone. Markets for agricultural commodities are well developed in the district. Chitradurga district is another major drought-prone areas of Central Karnataka having persistent history of drought. The district has recorded moderate growth in the crop economy. Food grains dominate its cropping pattern. Oil-seeds and cotton are the major cash crops of the district. Agricultural markets are well developed in Chitradurga district and the economy of the district is supported by cash crops especially from oil-seed processing sector. We have taken these two districts for the purpose of our study based on the criteria indicated by the coordinating centre. We are mapping out here the basic characteristics of the selected districts.

3.2 Raichur District

3.2.1 Location

The district of Raichur is situated in the northeastern sector of the state, in the proverbial Deccan Plains. It lies between 15° 10' and 16° 34'- north latitudes and 75° 47' and 77° 36'- east longitudes, with an average height from sea level as 1,311 feet. It shows typical ecological and meteorological pattern of a drought-prone district. With a geographical area of 14,017 sq. kms in the undivided form it was the third largest district of the state. The district falls under the "Rain- Shadow" region with the average annual rainfall of 599 mm (23.68").

The general slope of the district is from the northwest towards the southeast. Roughly, western portion of the district consists of plains and scanty vegetation, while the eastern portion has a few hillocks and scrub jungles. This portion has undulating surfaces with a soil red in colour and varying depths, while the plains of the western portion contain deep black alluvial soil.

3.2.2 The History

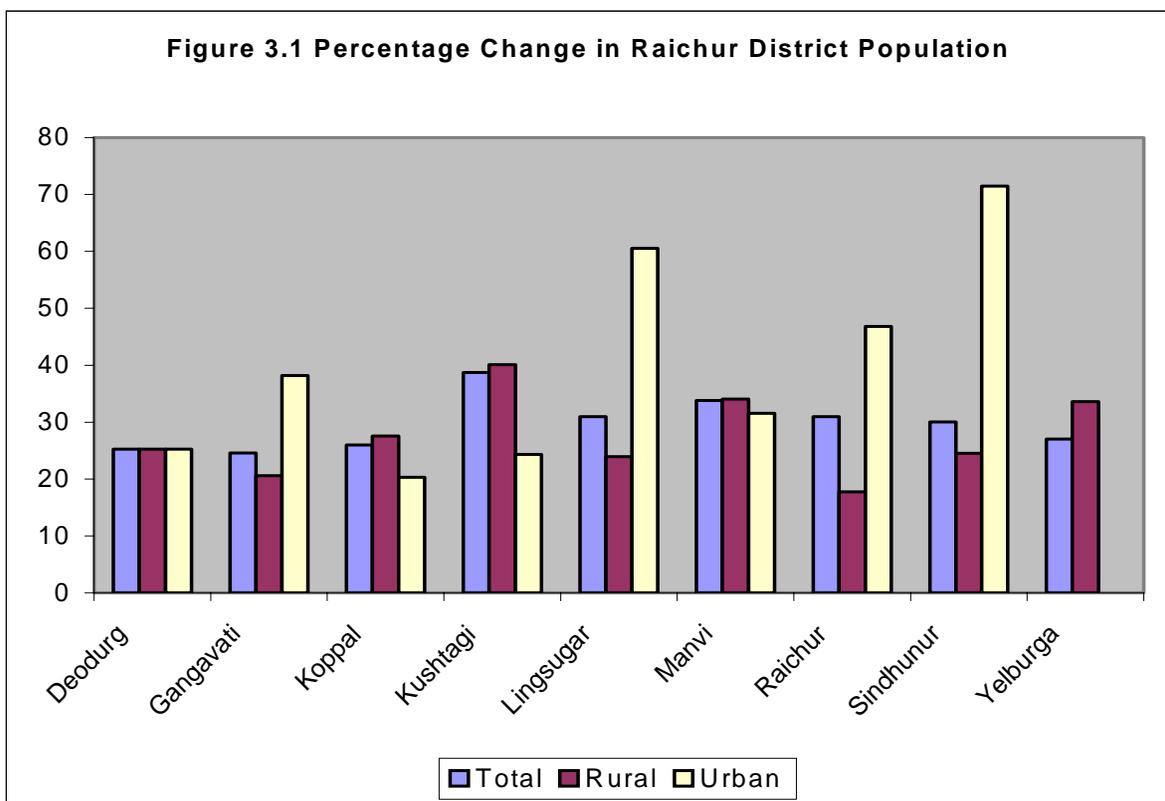
The district of Raichur lies between two rivers of Krishna and Tungabhadra, historically referred to as Raichur doab. It was a fertile area and many wars were fought between the `Bahamani Kingdom' and `Vijayanagara Empire', for its occupancy. Western part of the district has plain land and scanty vegetation, while the eastern part has a few hillocks and shrub jungles. Eastern part of Raichur district was historically ruled by various rulers and for a long period it was under the `Bahamani Kingdom'. The development of agricultural market dates back to this period. With the re-organisation of states on linguistic basis after independence, the region was acceded to Karnataka state and became the district headquarters called Raichur, comprising 9 taluks, viz., Raichur, Manvi, Deodurga, Lingsugur, Sindhanur, Kushtagi, Gangavathi, Yelburga and Koppal. It was one of the largest districts of the state with Raichur and Koppal as two growth centres. The district was further bifurcated in 1998 for administrative convenience and Koppal district, covering 4 taluks of Gangavathi, Yelburga, Kushtagi and Koppal was carved out of the erstwhile Raichur district, leaving Deodurga, Manvi, Sindhanur, Lingasugur and Raichur taluks in Raichur district.

The backwardness of Raichur district within Karnataka state needs no emphasis. Drought and famine situations have been frequently experienced by this region historically during the Nizams rule and well after that. This is recorded in the district Gazeteers. Raichur (including Koppal district) experienced several famines over the centuries. Ferishta records a severe famine as early as 15th Century. He refers that in 1419, there was another grievous famine and no rainfall throughout Deccan and Karnataka. In 1420, there was a severe failure of rain and Bahamani Kingdom was quite disturbed in meeting the famine. Again, the years of 1472 and 1473 were described as seasons of exceptional distress. Ferishta observes that no rainfall and no crops were sown for two years - `many died, many left home and in the third year when rainfall was scarce, there were hardly any left behind to till the land'. Later, Abdul Hamid in his Badasha Nama records that famine

occurred in the 17th Century i.e., in 1659 when Raichur and parts of Hyderabad state suffered from severe drought. Similar was the situation in British India. Even after independence the droughts and famines were quite frequent in the district. But, the district has recorded quite an impressive agricultural growth (Gazetteer of India, Mysore State, Raichur District, 1967).

3.2.3 Area and Population

The district predominantly has rural under-developed characteristics with 90 per cent of the area and more than 82 per cent of the population living in rural areas. The district has a typical growth pattern like other districts of Northern Karnataka. But, interestingly, across taluks the growth pattern of Liingsugur and Sindhur were depicting higher rates of growth during 1981-91 compared with the earlier decade (Table 3.1 and Figure 3.1)



According to 1991 population census 2.61 lakh people were cultivators, 3.15 lakh people were agricultural labourers. Females out numbered males as agricultural labourers (1.63 lakhs and 1.51 lakhs respectively). Almost 50,277 people lived as marginal workers and 94 per cent of them were females. The changes in the population of the district in 1991 over the 1981 census are shown in the figure 3.1. There is a strong trend of urbanization across the talukas and that is also indicative of larger job opportunities in the urban centres of the district.

Table 3.1: Population in Raichur District

(In Thousands)

Taluk	1981			1991			Percentage Change		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
Deodurg	141.21	129.28	11.94	176.88	161.93	14.95	25.26	25.26	25.26
Gangavati	257.19	198.46	58.74	320.39	239.23	81.15	24.57	20.54	38.16
Koppal	199.82	156.38	43.45	251.71	199.45	52.26	25.97	27.55	20.29
Kushtagi	136.86	125.08	11.78	189.89	175.23	14.65	38.74	40.09	24.35
Lingsugar	200.13	161.83	38.30	262.04	200.54	61.49	30.94	23.92	60.56
Manvi	201.31	179.97	21.35	269.27	241.19	28.08	33.76	34.02	31.55
Raichur	273.99	149.23	124.76	358.84	175.70	183.13	30.97	17.74	46.78
Sindhunur	218.96	193.08	25.88	284.75	240.38	44.37	30.05	24.50	71.48
Yelburga	154.34	146.79	7.55	196.08	196.08	0.00	27.04	33.58	
Total	1783.82	1440.09	343.73	2309.85	1829.73	480.08	29.49	27.06	39.67

3.2.4 Climatic Conditions

The climate of the district is characterised by a typical rainfed/drought-prone climate for the major part of the year and a very hot summer. Highly variable rainfall and ill- distribution of rainfall renders the district susceptible to drought. Agricultural year of the district may be divided broadly into four seasons. The summer season begins by about the middle of February and extends ahead of the end of May. The southwest monsoon season is from June to the end of September. October and November are the post monsoon or retreating monsoon months and the period from December to the middle of February is the cold season. Raichur district, on the whole, has a dry climate, the period from November to May is the driest part of the year. Even during the southwest monsoon period the humidity is not very high.

i. Rainfall Pattern

The region around Lingsugar gets the least amount of rainfall in the district, while towards the south as well as the east, rainfall increases. During the southwest monsoon i.e.,

June to September, the district receives about 69 per cent of the annual rainfall, September is the month with the highest rainfall in the district. In the post-monsoon months of October and November, the district receives some rain. The variations in the annual rainfall from year to year are quite large. On an average, there are 41 rainy days (i.e., days with 2.5 mm or more of rain) in a year in the district.

ii. Mean Annual and Seasonal Rainfall

The analysis indicates that the mean annual rainfall of this district is 655 mm with a standard deviation of 215.6mm and co-efficient of variation of 33 per cent. Devdurga taluk recorded the highest mean annual rainfall of 738 mm and Lingsugur taluk recorded the lowest average annual rainfall of 572mm. Table 3.2 shows the mean seasonal and annual rainfall of different taluks of the district. Raichur district receives about 10 per cent of the annual rainfall during pre-monsoon period. There is high variability in pre-monsoon rainfall in the taluks of Devdurga, Lingsugur, Raichur and Sindhanur, and least variability in pre-monsoon is in Manvi taluk. About 69 per cent of the annual rainfall is received in the district during southwest monsoon period. Devdurga and Raichur taluks receive high rainfall during this period. In Lingsugur, Manvi and Sindhanur taluks, southwest monsoon is below the district average, which is 450mm. Northeast monsoon rainfall accounts for 21 per cent of the annual rainfall in Raichur district. Low average rainfall occurs in Manvi taluk during this season. The least inter-annual variability of rainfall is observed during this season in Lingsugur and Manvi taluk, medium variability in Sindhanur and Raichur taluks. Slightly higher variability is observed in Devdurga.

During the period 1958-99, Raichur district experienced 14 years of excess annual rainfall, there were 12 years of normal annual rainfall, 12 years of moderately deficit annual rainfall and 3 years were severely deficit annual rainfall. Frequency of below normal, normal and above normal rainfall years in each of the taluks during 1958-1999 indicates that below normal rainfall years were more than above normal rainfall years in Raichur and Manvi taluks. It was almost equal in Lingsugur taluk. This shows high susceptibility of Raichur and Manvi taluks.

Table 3.2: Average seasonal and annual rainfall and variation in Raichur district
(Rainfall in mm.)

TALUK		Pre-Monsoon [January-May]	South-West Monsoon [June-September]	North-East Monsoon [October-December]	Annual [January-December]
DEV DURGA	AVERAGE	61	523	155	738
	S.D.	48	186	149	281
	C.V. (%)	78	36	96	38
	MIN. RAINFALL	0	195	12	402
	MAX RAINFALL	203	1145	874	2,086
LINGSUGUR	AVERAGE	70	374	128	572
	S.D.	54	135	93	193
	C.V. (%)	76	36	73	34
	MIN. RAINFALL	0	86	0	133
	MAX RAINFALL	254	751	44	1,175
MANVI	AVERAGE	62	444	122	628
	S.D.	40	148	92	162
	C.V. (%)	65	33	76	26
	MIN RAINFALL	0	171	0	374
	MAX RAINFALL	153	902	448	1,150
RAICHUR	AVERAGE	65	478	126	669
	S.D.	47	147	105	194
	C.V. (%)	72	31	83	29
	MIN. RAINFALL	0	177	1	263
	MAX.RAINFALL	233	824	561	1,225
SINDHANUR	AVERAGE	71	430	166	667
	S.D.	51	174	136	248
	C.V. (%)	72	40	82	37
	MIN. RAINFALL	0	94	13	121
	MAX RAINFALL	232	824	690	1,518
RAICHUR DISTRICT	AVERAGE	66	450	139	655
	S.D.	48	225	115	216
	C.V. (%)	73	35	82	33
	MIN.RAINFALL	0	145	52	258
	MAX. RAINFALL	215	894	604	1,431

Source: Data compiled from Drought Monitoring Cell, Govt. of Karnataka, Bangalore.

3.2.5 Sectoral Contribution of Income

Given the dependency of 80 per cent of main workforce on the agricultural sector, it is not surprising that the share of income originating from agricultural sector of the district is high. Table 3.3 (Figure 3.2) gives sector-wise income share for different decades for the state and the district. Two important observations can be made on the basis of this data. First and foremost the share of primary sector to the total income was higher in the district, than the

other two sectors and the share is decreasing significantly. Secondly, the proportion of work force in the sector was not decreasing (i.e., 80 per cent still depending on agriculture) over the years, indicating further marginalization of the population depending on agriculture. In an equally intriguing situation, the secondary sector of the district indicates a stagnant industrial economy for the last two decades and a beleaguered tertiary sector, where the rate of growth of tertiary sector was less than the growth recorded for the state as a whole. In totality, the employment absorbing capacity of secondary and tertiary sectors had not improved much, leaving a large share of population dependent on agriculture or primary sector obviously in a deploring situation. Some support was available from the tertiary sector.

Figure 3.2: Sectorial GDP of Raichur District (At 1993-94 Prices)

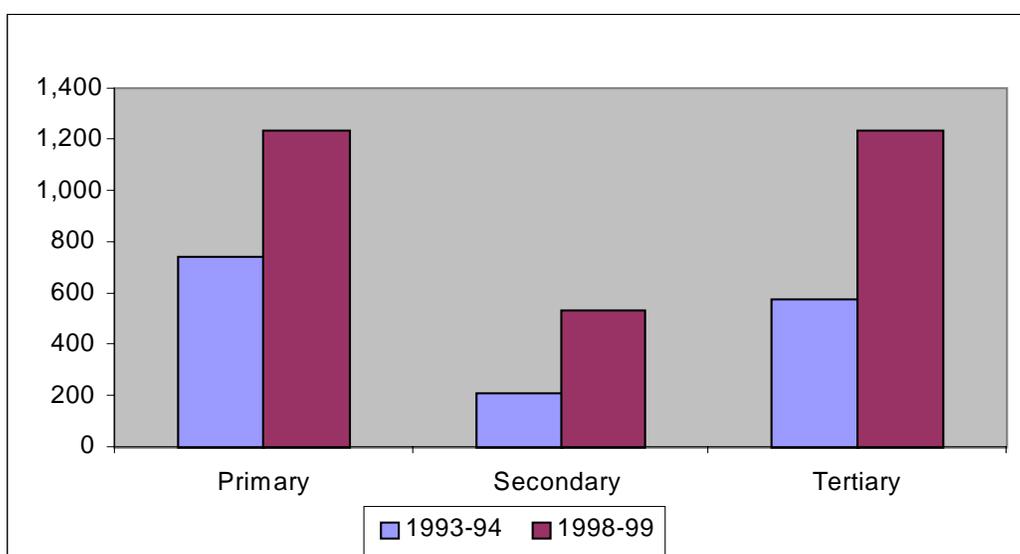


Table 3.3: Sectoral Composition of District Income in Raichur District

(Per Cent at Constant Prices)

Year	1970-71	1983-84	1992-93	1998-99
Primary				
Raichur	78.7	57.7	53.1	41.03
State	59.6	42.1	37.7	29.61
Secondary				
Raichur	5.4	18.2	13.5	17.75
State	18.6	27.9	25.5	27.91
Tertiary				
Raichur	15.0	30.1	33.4	41.21
State	21.8	29.9	36.8	42.49

3.2.6. Infrastructure

Table 3.4: Infrastructure of Raichur District

Components	1995-96		1999-00	
	District	% to State	District	% to State
Veternary Institutions	122	3.84	167	4.43
No of Factories	327	4.21	365	3.95
Commercial Banks	79	2.30	82	2.27
Grameena Banks	84	7.79	84	7.62
Motor vehicles	53,409	2.37	48,411	2.01
Railway Route (Kms)	106	3.32	106	0.16
Road length (Kms)	5,988	4.43	6,166	4.32
Post Offices	505	5.16	309	3.13
Telephone Exchanges	100	4.95	110	4.67
Primary Schools	1,614	3.80	1,226	2.48
Hospitals (State)	9	5.11	9	5.08

The sectoral growth is largely dictated by the availability of infrastructure. Even the intensity of market operations is also a function of infrastructure. Therefore, we have charted out the present level of infrastructure in the district. Raichur district does not have infrastructure to match its economic activities. Its contribution to the State income is much higher than the share of its infrastructure. It is certainly well below the normative requirements and in a comparative sense, Raichur comes as a district with less than average infrastructure. The High Power Committee for Redressel and Regional Imbalances in Karnataka, identified Sindhanur, Manvi, Lingasugur, Devadurga and Raichur talukas as most backward to backward in terms of infrastructure.

3.3 Agricultural Economy of Raichur District

Raichur district is a predominantly agriculture based district with cereals dominating its crop economy. Progress of irrigation has not been significant enough to pull the district out of its dominant drought-prone characteristics. Technological inputs as represented by use of HYV and fertilisers have not been significant. There was no procurement undertaken in the district in recent years and as such the procurement data are not available. In the paragraphs below we take a view of the agricultural economy of the district.

3.3.1 Cropping Pattern

The district of Raichur and Koppal have a subsistence-oriented crop pattern and commercial crops are showing their presence only in the irrigated patches. The productivity of main crops of the districts is higher than that of the State. Jowar is a predominant subsistence cereal of Raichur district covering 47.2 per cent of area under cereals. Paddy and bajra, cover 35 per cent and 16.8 per cent of area respectively, under cereals (Tables 3.5(a) and figure 3.3). Maize, wheat and minor millets also make their presence felt. The productivity of cereals and especially jowar, maize and paddy are comparable with the State averages and remained higher than the State averages. Among the pulses, tur, bengalgram, and horsegram are the important pulses grown in the district. The productivity of tur and bengalgram is quite satisfactory when compared with the State average (Table 3.5(b)). Oil-seeds and sugar cane form the core of the commercial crop economy of the districts. Groundnut and sunflower are the major contributors along with cotton. Sugar cane is taken in the irrigated regions of the districts.

Table 3.5(a) : Average Area Under Crops in Raichur from 1998-99 to 2000-01

(In Hectares)

Crop	Average	Proportion*
Paddy	1,35,539	12.39
Jowar	1,82,579	16.68
Bajra	65,189	5.96
Maize	197	0.02
Wheat	3,633	0.33
Small Millets	1,561	0.14
Cereals	3,87,137	35.38
Tur	17,399	1.59
Gram	17,477	1.60
Pulses	15,726	1.44
Food Grains	4,39,301	40.14
Groundnut	50,057	4.57
Castor Seed	1,682	0.15
Sesamum	7,010	0.64
Safflower	11,891	1.09
Oil-Seeds	1,62,199	14.82
Sugar Cane	743	0.07
Cotton	40,163	3.67
Sunflower	91,378	8.35
GCA	10,94,318	---

Note: * Per cent to GCA

Source: Based on the Data Collected from Directorate of Economics & Statistics, Govt. of Karnataka, Bangalore.

Figure 3.3: Cropping Pattern – Raichur District

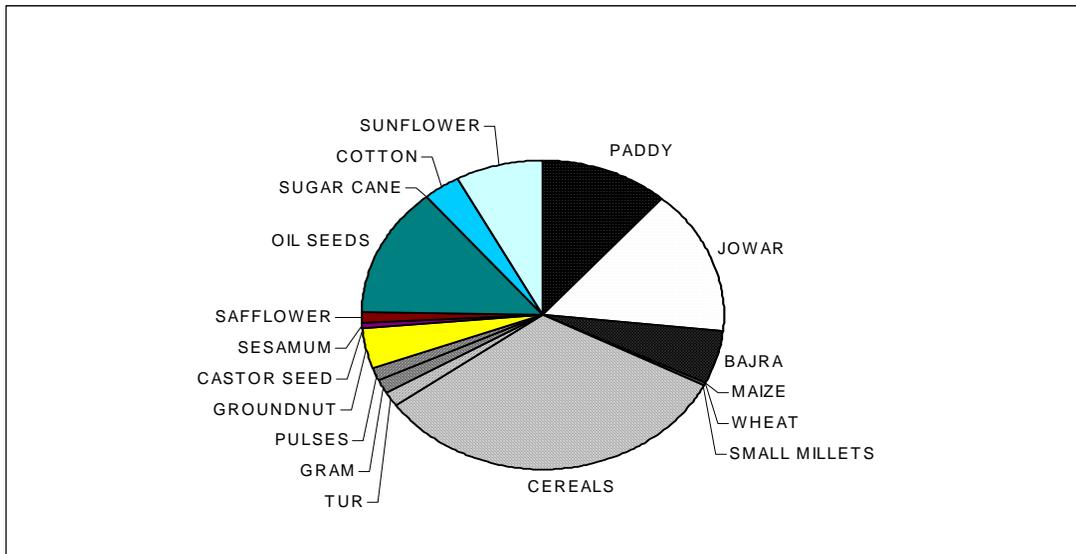


Table 3.5(b): Average Production and Productivity of Crops in Raichur District (1998-99 to 2000-01)

Crops	Average Production (in Tonnes)	Average Productivity (Kg/Hectare)
Paddy	6,49,623	5,063
Jowar	1,50,417	865
Bajra	36,187	573
Maize	626	3,307
Wheat	1,763	514
Small Millets	514	390
Cereals	6,22,280	1,691
Tur	2,949	386
Gram	9,478	303
Pulses	3,585	312
Food Grains	6,38,806	1,531
Ground Nut	32,145	671
Castor Seed	1,856	1,019
Sesamum	2,261	324
Safflower	7,113	633
Oil Seeds	73,697	477
Sugar Cane	9,281	73,646
Cotton	45,979	203
Sun Flower	30,238	353

We can see from the Table 3.5(b) that paddy and maize have better yield and that keeps the yield rate of cereals at a respectable level. The presence of commercial crops is emerging strongly in the recent past, but markets have not developed for these crops. Paddy, Jowar and Groundnut are the major crops reaching the markets in significant proportion, whereas other minor crops are also sold in the market.

3.3.2 Agricultural Land Holdings and Area

Land holdings in Raichur district are predominated by small and marginal farmers as elsewhere in the State. The average size of holding was 2.27 hectares in 1995-96 which has gone down to 2.63 hectares. The average size of holding has gone down significantly in the size class of above 10 hectares. It can be seen from figure 3.4 that the number of holdings under 1-2 ha. size class have been increasing faster than the other two lower size classes of holdings. Similarly, the number of holdings above 4 to 10 ha. and above 10ha. are decreasing significantly. In other words, the number of holdings generating marketable surplus have been reducing significantly and so also the marketed surplus.

Table 3.6(a): Size Class-wise Area under the Holdings

Year	<1 Ha	1-2 Ha	2-4 Ha	4-10 Ha	>10 Ha	Total
1995-96	45000	176000	307000	408000	206000	1142000
2001-02	57428	201606	333911	371758	158529	1123232

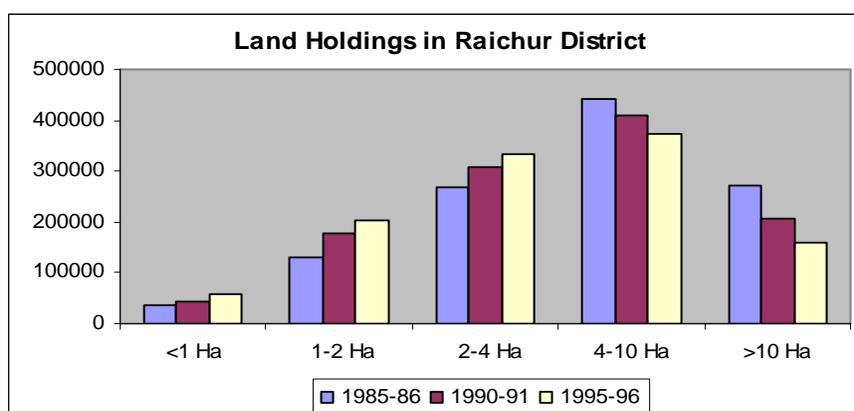
Source: District Statistical Office, Raichur

Table 3.6(b): Size Classwise Number of Holdings

Year	<1 Ha	1-2 Ha	2-4 Ha	4-10 Ha	>10 Ha	Total
1995-96	73000	118000	110000	69000	14000	384000
2001-02	93196	137046	121269	63267	11090	425868

Source: District Statistical Office, Raichur

Figure 3.4: Land holding in Raichur District



3.3.3 Irrigation in Raichur District

Raichur district has only about 2.23 lakh hectares of area under irrigation and a large part of this comes from canal irrigation. In the recent past, bore well irrigation has been increasing substantially despite the pressure on groundwater table. Largely, bore well irrigation is used for the purpose of commercial crops, and that is an indication that the commercial crop economy is picking up in the district. After the bifurcation of the districts a large portion of the irrigated area went to Davanagere and hence we find significant decline during the last two years in Figure 3.5. Especially, the area under wells and bore wells has gone down significantly.

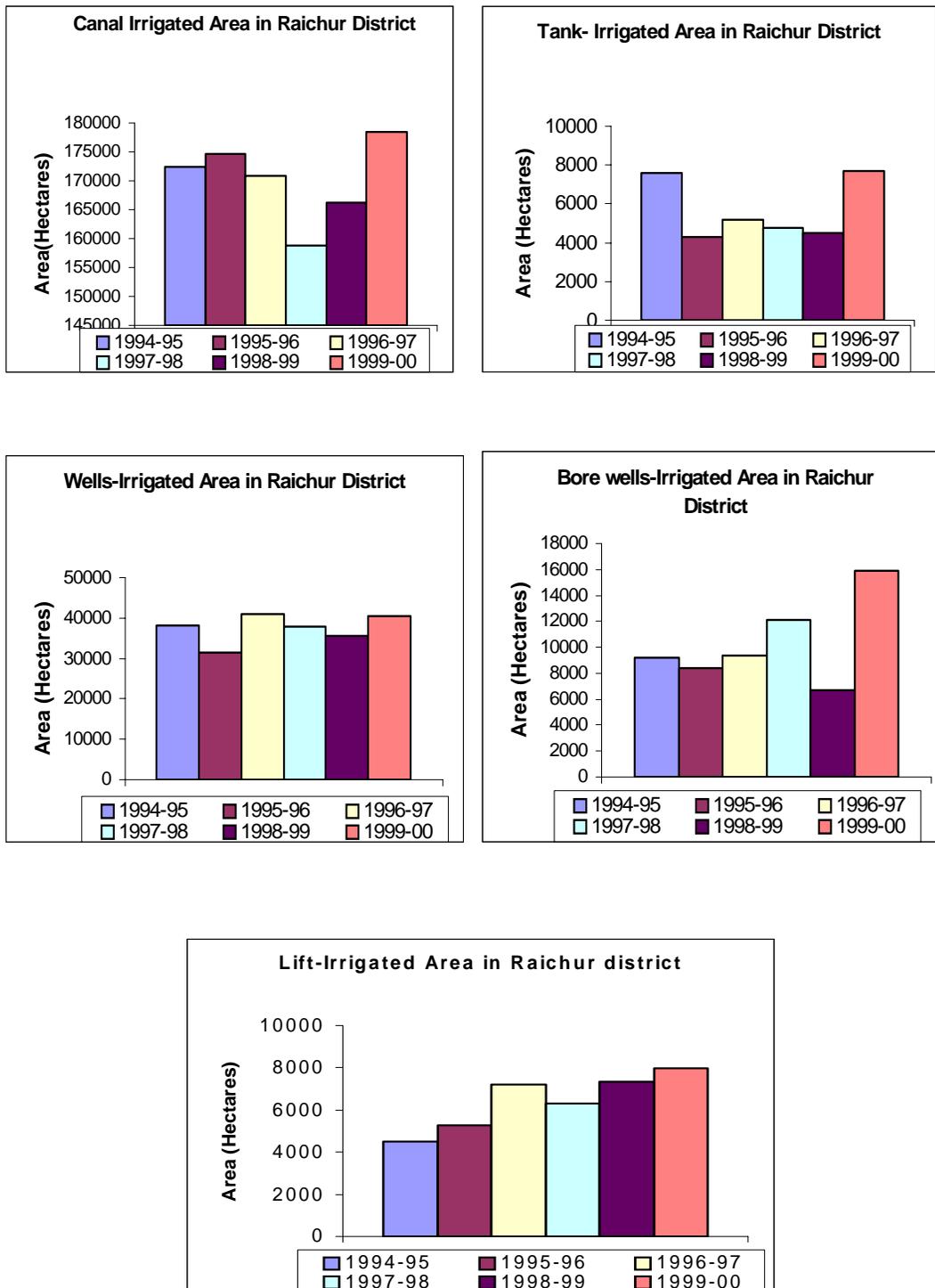
Table 3.7: Irrigated area by Sources of Irrigation in Raichur District

(in Hectares)

Year	Net Area Irrigated						Total
	Canals	Tanks	Wells	Bore wells	Lift Irrigation	Other Sources	
1994-95	172,446	7,571	38,188	9,222	4,489	4,350	236,266
(%)	(72.99)	(3.20)	(16.16)	(3.90)	(1.90)	(1.84)	(100.00)
1995-96	174,629	4,301	31,478	8,386	5,272	4,676	228,740
(%)	(76.34)	(1.88)	(13.76)	(3.67)	(2.30)	(2.04)	(100.00)
1996-97	170,887	5,158	40,925	9,354	7,185	3,651	237,160
(%)	(72.06)	(2.17)	(17.26)	(3.94)	(3.03)	(1.54)	(100.00)
1997-98	158,849	4,740	37,847	12,091	6,326	3,430	223,283
(%)	(71.14)	(2.12)	(16.95)	(5.42)	(2.83)	(1.54)	(100.00)
1998-99	166,217	4,504	35,536	6,704	7,357	2,840	223,158
(%)	(74.48)	(2.02)	(15.92)	(3.00)	(3.30)	(1.27)	(100.00)
1999-00	178,398	7,694	40,514	15,891	7,957	1,076	251,530
(%)	(70.93)	(3.06)	(16.11)	(6.32)	(3.16)	(0.43)	(100.00)

Source: District Statistical Office, Raichur District.

Figure 3.5: Irrigated Area by Sources in Raichur District



3.3.4 Fertiliser Use in Raichur District

Raichur district is one of the districts boasting early adoption of new technology. The use of fertilisers has been in the same range as that in the year 1995-96. Largely, fertilisers are used for paddy, sugarcane, cotton and groundnut. Other crops do not get equal attention in the case of fertiliser use.

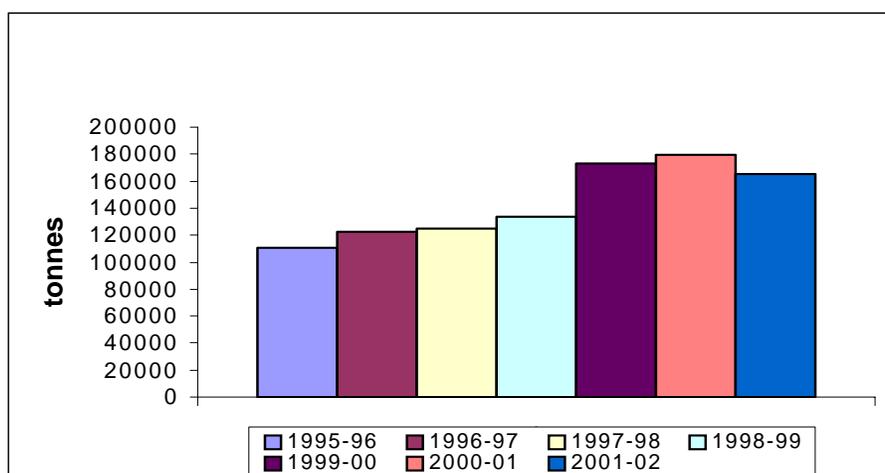
Table 3.8: Fertiliser Use in Raichur district

(in Tonnes)

Year	Fertiliser				Fertiliser use Per Hectare (Kgs./Ha.)
	N	P	K	Total	
1995-96	72,000	25,400	13,100	110,500	101.69
1996-97	74,908	31,097	16,635	122,640	111.93
1997-98	72,121	35,034	17,712	124,867	132.42
1998-99	79,349	37,121	16,947	133,394	124.27
1999-00	93,961	49,297	29,902	173,160	162.35
2000-01	101,582	49,136	29,088	179,806	168.58
2001-02	94,184	43,599	27,312	165,095	154.79

Source: Fertiliser Statistics of India.

Figure 3.6: Fertiliser Use in Raichur District



3.3.5 Production, Market Arrivals and Procurement

Production and market arrivals in Raichur district are presented in Table 3.9, for two years i.e., 1997-98 and 2000-01. Regulated markets in Raichur district also entertain arrivals from neighbouring district. Therefore, the arrivals are at times exceed the production in the district especially for commercially attractive commodities. This is noted in the case of paddy, maize, tur and sunflower. Therefore, connecting the market arrivals in the regulated markets in the district to the production of the commodity in the district will not be prudent in this case. The procurement of rice or maize in Raichur district has not been significant.

Table 3.9: Details of Quantity Marketed and Production of Different Crops in Raichur District

Crop	Paddy		Maize		Ragi		Jowar		Wheat	
	1997-98	2000-01	1997-98	2000-01	1997-98	2000-01	1997-98	2000-01	1997-98	2000-01
Quantity Marketed in Regulated Markets (in 000 Tonnes)	632.43	625.35	44.18	0.02	–	–	5.04	16.74	3.40	0.85
Production (in 000 Tonnes)	477.62	667.73	36.11	0.62	–	–	126.27	146.34	3.72	2.05
% of Production Marketed	132.41	93.65	122.35	3.89	–	–	3.99	11.44	91.40	41.62

(Contd.)

Crop	Bajra		Tur		Gram		Groundnut		Sunflower	
	1997-98	2000-01	1997-98	2000-01	1997-98	2000-01	1997-98	2000-01	1997-98	2000-01
Quantity Marketed in Regulated Markets (in 000 Tonnes)	3.30	–	4.66	2.14	2.04	–	36.30	27.00	41.20	23.46
Production (in 000 Tonnes)	26.77	44.19	3.15	2.92	4.34	11.09	43.32	41.95	32.74	37.16
% of Production Marketed	12.33		147.94	73.27	47.00		85.78	64.35	125.84	63.13

Note: Marketed figures of Paddy, Maize, Tur & Sunflower are as per the available documents from the State Marketing Board

3.4 Chitradurga District

3.4.1 Physical Features

The district of Chitradurga is also situated in the Central region on the Deccan Plateau. It lies between 13° 42' to 15° 01' of north latitude and 75° 43' to 77° 02' of east longitude. It has a geographical area of 10,852 Sq. Kms and covers about 5.3 per cent area of the State. The district is one of the biggest districts and hence, it was chosen for bifurcation during the early nineties. The district was bifurcated into Chitradurga and Davangere districts thereby reducing the size of the district. The general slope of the district is from north-west towards south-east and it also comes under the rain shadow region of the deccan plateau. It receives 565.5 mms of normal annual rainfall with the standard deviation of 132.7 mm and CV of 23 per cent. It is a frequent drought visited district. Davangere, Holakere and Chitradurga taluks receive high rainfall during south-west monsoon.

The district has largely red to black soil and significant portion of deep black cotton soils spread over Chitradurga, Challakere, Jagalur and Davanagere taluks. It has about 90 sq. ha. area covering about 9 per cent of the total geographical area under forest. The forests are largely confined to Chitradurga, Hiriya, Jagalur and Molakalmuru taluks. The district falls under Krishna basin served by two major river systems, namely, Vedavathi and Tungabhadra. The district is primarily an agriculture dependent district and that is reflected in the work force composition. More than 70 per cent of the workers in the district are engaged in agriculture as the main occupation. About 60 per cent of the districts' total geographical area (6.2 lakh ha) is under cultivation.

3.4.2 History

The district was ruled by various dynasties during different periods. *Rashtrakutas* ruled during 775-780 A.C. This was followed by Chalukyan kings and Cholas, Vijaya Pandya and Hoysalas. For some time, the district was also ruled by Yadavas during 1271-1309. Vijayanagar kingdom controlled the district with the help of *Beda* or *Boya* Nayaks and thereafter, Nayakas were ruling the region till the time Chitradurga came under the rule of Hyder Ali and Tippu Sultan and remained with them up to 1799 till the third battle of Serirangapatana. After that, it remained under the Wodeyars of Mysore but supported

by British administration (*Satyan, 1967*). Historically, the district suffered various changes and therefore, economy of the district remained agriculture based. During the period of Tipu Sultan, sericulture was introduced in a few talukas of the district.

3.4.3 Area and Population

The district is predominantly a rural district with about 6.2 lakh ha. of cultivated area which forms about 60 per cent of the total geographical area. Chitradurga is not a densely populated district and its population growth is about the same as that of the State. Among the taluks, Davangere, Chalkere and Chitradurga are growing much faster. The urbanisation trend is also quite strong in these talukas of the district. The population in urban areas increased by about 40 per cent as against 17 per cent increase in rural population in the decade of eighties. The growth of population in the district has been quite uneven across talukas and it is shown in the figure. The workforce is concentrated in primary sector and the shifting of workforce from primary sector to any other sector is hardly visible.

Figure 3.7: Percentage Population Change in Chitradurga District

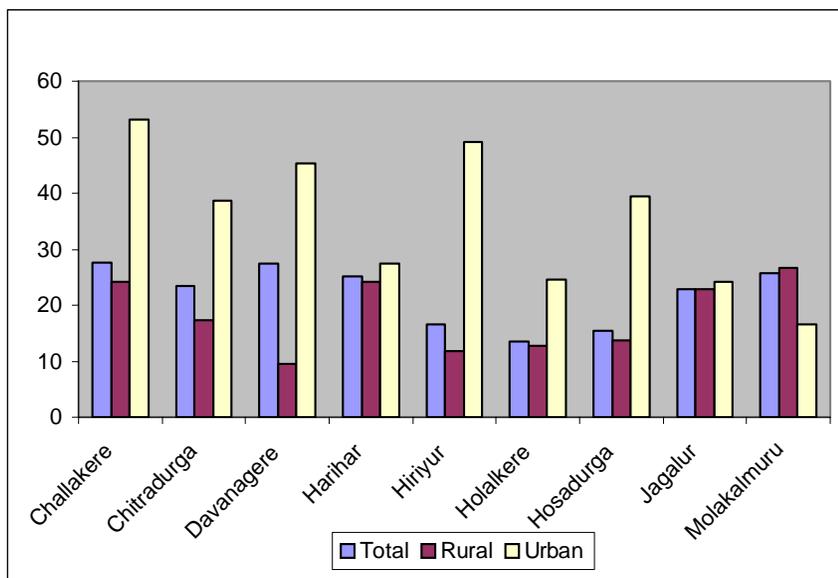


Table 3.10: Population in Chitradurga District

(In Thousands)

Taluk	1981			1991			Percentage Change		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
Challakere	219.06	194.01	25.04	279.38	241.01	38.36	27.54	24.22	53.18
Chitradurga	260.91	186.33	74.58	322.03	218.59	103.43	23.43	17.31	38.68
Davanagere	403.61	202.35	201.26	514.16	221.70	292.46	27.39	9.56	45.31
Harihar	173.32	120.99	52.33	216.79	150.14	66.64	25.08	24.10	27.34
Hiriyur	196.20	171.05	25.15	228.70	191.19	37.50	16.56	11.77	49.10
Holalkere	157.82	148.01	9.81	179.21	166.98	12.22	13.56	12.82	24.58
Hosadurga	173.02	160.64	12.38	199.84	182.59	17.25	15.50	13.66	39.34
Jagalur	111.26	101.52	9.74	136.76	124.66	12.09	22.91	22.79	24.10
Molakalmuru	82.30	74.86	7.44	103.53	94.85	8.67	25.80	26.70	16.52
Total	1,777.50	1,359.76	417.74	2,180.40	1,591.71	588.62	22.67	17.06	40.90

3.4.4 Climatic Conditions

The district receives 565.5 mm of annual rainfall. Among the taluks, Holalkere receives the highest rainfall, i.e., 668.7 mm and Challakere is the lowest rainfall region of the district. Table 3.11 shows taluk-wise seasonal rainfall and variations in the seasonal rainfall. There is high variability in pre-monsoon rainfall in the taluks of Harihara, Davanagere, Jagalur, Molakalmuru and Challakere and least variations in the Chitradurga taluk. About 52 per cent of the annual rainfall is received in the district during southwest monsoon. Davanagere, Holalkere and Chitradurga taluks largely receive their total rainfall during this period, whereas, Hosadurga, Harihara, Challakere receive the southwest monsoon much below the district average. During the period 1958-2000, Chitradurga experienced 14 droughts and 28 years with normal annual rainfall. Remaining years had moderate and deficit rainfall.

Table: 3.11: Mean Seasonal and Annual Rainfall and Variations in Chitradurga District (1901-1990)

(in mms.)

TALUK		Pre-Monsoon (Jan-May)	S.W. Monsoon (Jun-Sept)	N.E. Monsoon (Oct-Dec)	Annual (Jan-Dec)
CHALLAKERE	Mean	93.0	205.7	144.9	443.5
	S.D.	65.9	98.6	96.7	150.8
	C.V. (%)	71	48	67	34
	Maximum Rainfall	330.9	496.9	462.6	857.6
	Minimum Rainfall	0.0	37.6	0.0	162.3
CHITRADURGA	Mean	117.7	308.3	182.0	608.0
	S.D.	54.4	106.9	113.2	180.2
	C.V. (%)	46	35	62	30
	Maximum Rainfall	313.9	583.9	601.6	1128.1
	Minimum Rainfall	19.1	117.9	3.7	272.2
DAVANAGERE	Mean	115.8	347.1	168.2	63.1
	S.D.	73.0	108.5	105.4	163.9
	C.V. (%)	63	31	63	26
	Maximum Rainfall	421.1	602.6	457.4	1117.3
	Minimum Rainfall	13.1	121.9	3.8	290.2
HARIHAR	Mean	104.6	299.3	150.3	554.3
	S.D.	69.4	98.1	88.3	147.8
	C.V. (%)	66	33	59	27
	Maximum Rainfall	481.8	608.7	401.0	921.1
	Minimum Rainfall	0.0	94.3	3.8	277.9
HIRIYUR	Mean	115.9	252.1	162.1	533.2
	S.D.	63.4	109.0	97.6	161.5
	C.V. (%)	55	43	59	30
	Maximum Rainfall	320.2	931.7	420.0	1013.2
	Minimum Rainfall	5.9	81.5	6.4	234.0
HOLALKERE	Mean	132.9	346.6	189.2	668.7
	S.D.	67.9	112.8	120.8	189.9
	C.V. (%)	51	33	64	28
	Maximum Rainfall	417.7	621.6	732.0	1386.6
	Minimum Rainfall	23.0	122.4	7.0	344.9
HOSADURGA	Mean	118.8	271.2	188.8	578.8
	S.D.	70.2	123.3	113.4	203.3
	C.V. (%)	59	45	60	35
	Maximum Rainfall	295.7	614.5	443.5	1112.6
	Minimum Rainfall	0.0	11.5	0.0	58.4
JAGALUR	Mean	96.7	296.8	141.7	535.1
	S.D.	62.1	131.3	91.0	177.9
	C.V. (%)	64	64	64	33
	Maximum Rainfall	310.7	874.4	537.5	1150.6
	Minimum Rainfall	1.0	93.8	0.0	213.2
MOLAKALMURU	Mean	88.5	298.4	155.7	542.6
	S.D.	53.8	133.5	97.9	168.9
	C.V. (%)	61	45	63	31
	Maximum Rainfall	275.1	687.1	502.6	1008.5
	Minimum Rainfall	10.8	44.1	0.0	92.4
TOTAL	Mean	109.2	291.4	164.9	565.5
	S.D.	44.5	88.9	86.2	132.7
	C.V. (%)	41	30	52	23
	Maximum Rainfall	277.7	489.1	387.4	919.2
	Minimum Rainfall	32.3	116.3	12.1	288.3

Source: Drought Monitoring Cell, Govt. of Karnataka, Bangalore.

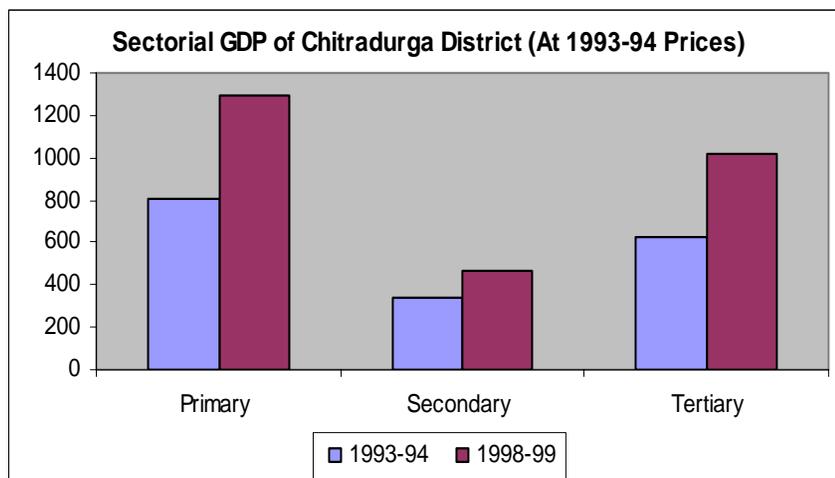
3.4.5 Sectoral Contribution of Income:

Chitadurga district depends on agriculture with predominantly 70 per cent of its workforce being engaged in the agricultural sector. The major share of the district income comes from the primary sector. In the recent past, the agro-processing sector has been receiving larger attention and Devanagere as well as Chitradurga had developed into good textile manufacturing centres till the early nineties. In the recent past, there has been a slump in the manufacturing of textiles in the district both due to market prices and production constraints in cotton. Falling in the similar pattern of that of the Raichur district, but not with the same intensity, the share of district income generated from agriculture is going down in the district. But, at the same time, the share of workforce in agriculture was seen declining. But that does not mean that the income generated from agricultural sector is declining. It is, in fact, increasing at a faster rate than the other two sectors (Figure 3.8).

Table 3.12: Sectoral Contribution of Income of Chitradurga District
(In Percentage)

Year	1970-71	1983-84	1992-93	1998-99
Primary				
Chitradurga	68.8	51.3	52.1	46.53
State	59.6	42.1	37.7	29.61
Secondary				
Chitradurga	9.2	23.9	15.2	16.91
State	18.6	27.9	25.5	27.91
Tertiary				
Chitradurga	22.0	24.8	32.6	36.55
State	21.8	29.9	36.8	42.49

Figure 3.8: Sectoral GDP of Chitradurga District (At 1993-94 Prices)



Ragi, Jowar, Paddy, Small millets are the major crops of the district. Among pulses, horsegram and tur cover larger share of the area and groundnut, sunflower and cotton serve as major cash crops in the district.

3.4.6 Infrastructure

Table 3.13: Infrastructure of Chitradurga District

Components	1995-96		1999-00	
	District	% to State	District	% to State
Veterinary Institutions	193	6.08	296	7.85
No of Factories	328	4.22	313	3.39
Commercial Banks	105	3.06	135	3.74
Grameena Banks	97	9.00	111	10.07
Motor vehicles	84,861	3.77	1,00,179	4.17
Railway Route (Kms)	219	6.86	219	6.70
Road length (Kms)	7,156	5.30	7,173	5.02
Post Offices	475	4.85	591	5.98
Telephone Exchanges	98	4.85	113	4.80
Primary Schools	2,310	5.44	3,349	6.78
Hospitals(State)	7	3.98	9	5.08

Source: District Statistical Office, Chitradurga District.

Chitradurga is one of the backward districts in terms of its infrastructure (*Venkatachalam, 2003*). The Committee on Regional Imbalances in Karnataka has pointed out that Hosadurga, Molakalmuru, Holalkere, and Challakere were backward in terms of infrastructure (Report of the High Power Committee for Redressel of Regional Imbalances, GoK, 2002: p167). It is well known that markets develop following the availability of infrastructure and therefore, marketing facilities in Chitradurga have not developed significantly.

3.4.7 Cropping Pattern

Cereals dominate the cropping pattern of Chitradurga district (Table 3.14(a) and figure 3.9). Among the cereals, ragi and jowar are dominant. The cropping pattern is undergoing change in the recent past. Oil-seeds are the traditional commercial crops grown in Chitradurga district. The district also has a good number of oil-seeds processing

Table 3.14 (a): Average Area under Crops in Chitradurga District from 1998-99 to 2000-01

(In Hectares)

Crop	Average	Proportion*
Paddy	12,623	1.46
Jowar	38,556	4.46
Bajra	6,225	0.72
Maize	41,932	4.85
Ragi	63,811	7.37
Wheat	877	0.10
Small Millets	12,636	1.46
Cereals	1,63,024	18.84
Tur	7,785	0.90
Gram	3,349	0.39
Pulses	25,987	3.00
Food Grains	2,12,780	24.59
Ground Nut	1,59,795	18.47
Castor Seed	2,274	0.26
Sesamum	4,826	0.56
Rape & Mustard	255	0.03
Saf Flower	1,487	0.17
Oil Seeds	2,03,353	23.50
Sugar Cane	5,567	0.64
Cotton	18,999	2.20
Sun Flower	34,187	3.95
GCA	8,65,308	--

Note: * Per cent to GCA

Source: Based on the Data Collected from the Directorate of Economics & Statistics, Govt. of Karnataka, Bangalore.

units especially in Challakere taluk. Almost 47 per cent of the area is under oil-seeds and of which groundnut is the major crop. The crop is taken largely under rainfed conditions. Average production of groundnut from Chitradurga district is 1,640 thousand tonnes which forms a significant proportion of the State production.

Figure 3.9: Cropping Pattern: Chitradurga District

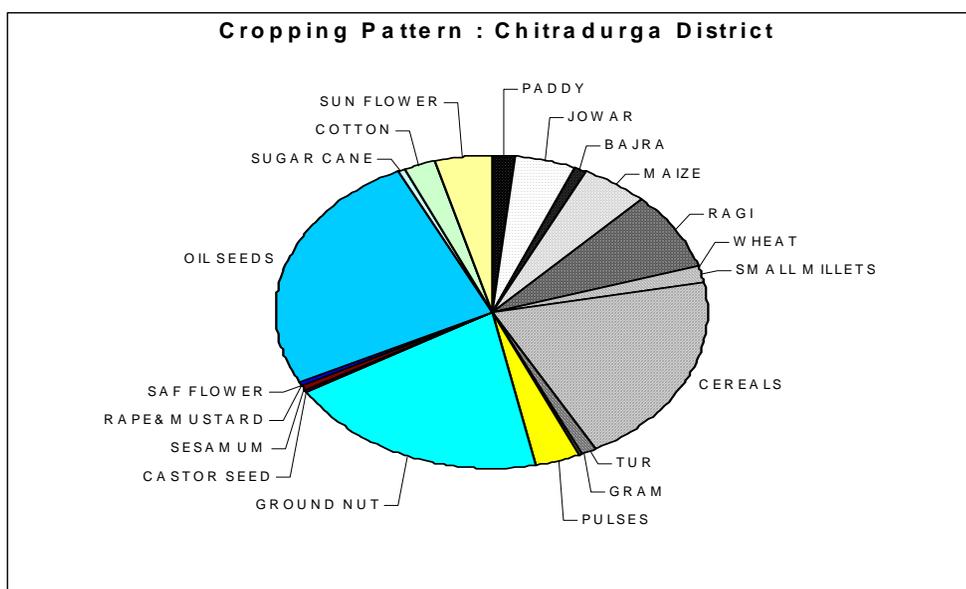


Table 3.14 (b): Average Production and Productivity of Crops in Chitradurga District(1998-99 to 2000-01)

Crops	Average Production (in tonnes)	Average Productivity (Kg/Hectare)
Paddy	49,719	4,195
Jowar	39,644	1,156
Bajra	4,097	677
Maize	1,14,821	2,937
Ragi	1,02,155	1,674
Wheat	990	1,185
Small Millets	6,234	516
Cereals	2,94,867	1,915
Tur	3,818	516
Gram	1,773	550
Pulses	11,461	470
Food Grains	3,18,153	1,581
Groundnut	1,63,659	1,080
Castor Seed	2,126	1,162
Sesamum	2,408	511
Rape & Mustard	55	216
Safflower	972	643
Oil Seeds	1,85,987	965
Sugar Cane	4,27,208	96,000
Cotton	24,467	235
Sunflower	15,916	495

Source: Based on the Data Collected from Directorate of Economics & Statistics, Govt. of Karnataka, Bangalore.

3.4.8 Agricultural Land Holdings and Area

Decreasing size of holding is common trend in the districts of Karnataka and Chitradurga is not an exception. In 1995-96, the number of holdings below 1 ha. was 82 thousand and in a period of five years this increased to 101 thousand, whereas the area under this size class increased by about 10 thousand hectares. A clear trend of marginalisation of size of holding is visible from the data presented in Tables 3.15(a) and 3.15(b). The increase in the number of holdings up to 4 hectares is quite visible here. The number of holdings above four hectares is going down and that indicates the shrinking of the base for marketable surplus.

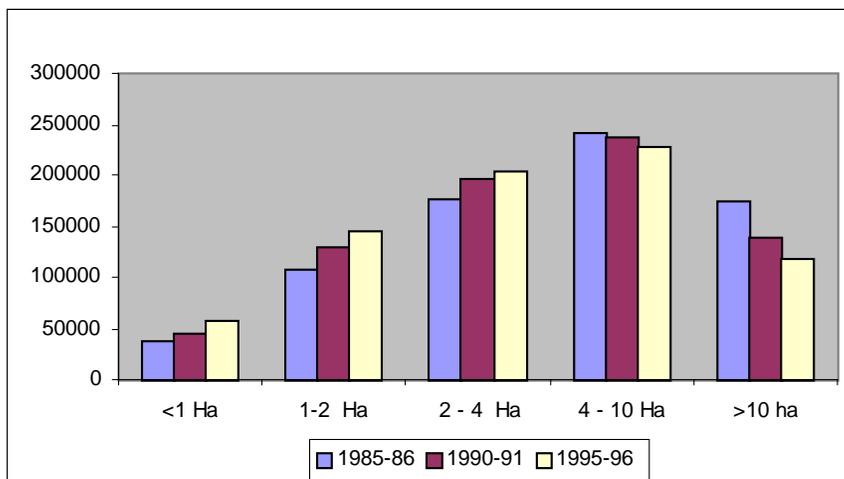
Table 3.15(a): Number of Agricultural Land Holdings : Chitradurga

Year	<1 Ha	1-2 Ha	2 - 4 Ha	4 - 10 Ha	>10 ha	Total
1995-96	82,000	89,000	72,000	41,000	9,000	2,93,000
2001-02	1,01,000	99,626	75,713	38,939	7,793	3,23,436

Table 3.15(b): Area under Holdings: Chitradurga

Year	<1 Ha	1-2 Ha	2-4 Ha	4-10 Ha	>10 ha	Total
1995-96	46,000	1,29,000	1,96,000	2,38,000	1,40,000	7,49,000
2001-02	1,56,919	1,44,260	2,04,114	2,27,583	1,17,350	7,50,226

Figure 3.10: Land Holdings in Chitradurga District



3.4.9 Fertiliser Use

Fertiliser use in Chitradurga district has been going down significantly. It has reduced almost to half during the last five years and the reduction is mainly due to the area shift from paddy to other crops. Chitradurga is one of the districts using fertilisers less than the State average. It can also be observed from the table that the ratio of N:P:K has been changing in favour of nitrogenous fertilisers and that is not a good trend.

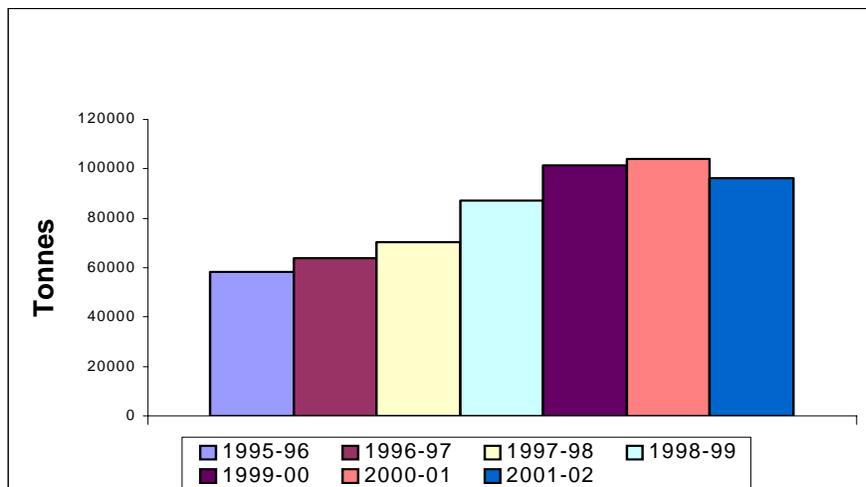
Table 3.16: Fertiliser Use in Chitradurga District

(in Tonnes)

Year	Fertilizer				Fertiliser Use Per Hectare (Kgs./Ha.)
	N	P	K	Total	
1995-96	32,900	18,900	6,400	58,200	87.84
1996-97	35,620	19,460	8,683	63,763	90.67
1997-98	39,677	22,724	8,058	70,459	107.78
1998-99	50,905	27,051	9,171	87,127	90.17
1999-00	54,956	34,112	12,178	101,246	103.74
2000-01	58,986	32,375	12,736	104,097	106.66
2001-02	52,736	31,624	11,883	96,243	98.61

Source: Fertiliser Statistics of India.

Figure 3.11: Fertiliser Use in Chitradurga District



3.4.10 Irrigation in Chitradurga District

Chitradurga is largely a rainfed district with only 122 thousand hectares of net sown area receiving irrigation. The district has a very high density of wells and therefore, groundwater is the major source of irrigation. Canal irrigation is the second largest source of irrigation in the district. Irrigation is largely used for commercial crops and especially for cultivation of paddy and sugarcane. The district has been facing a problem of groundwater depletion and severe water scarcity is felt under well irrigated region.

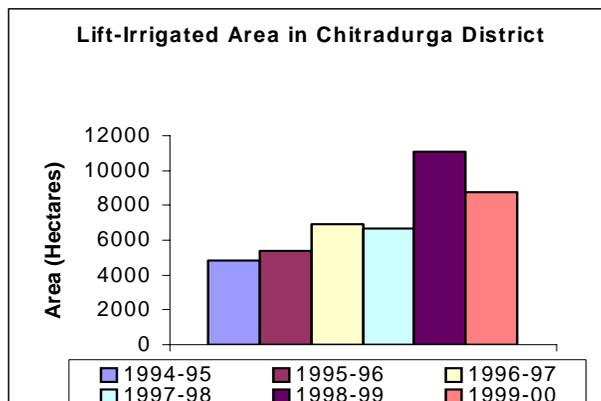
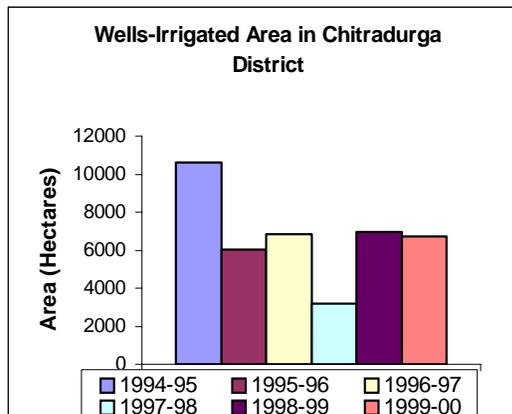
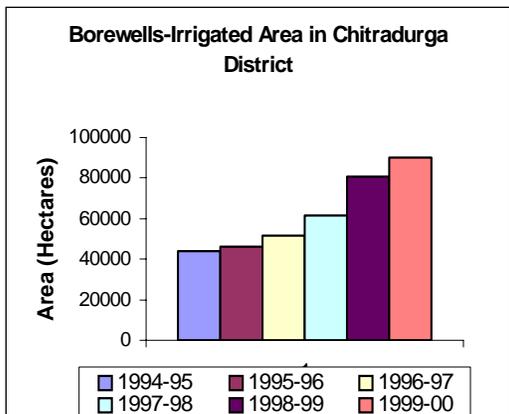
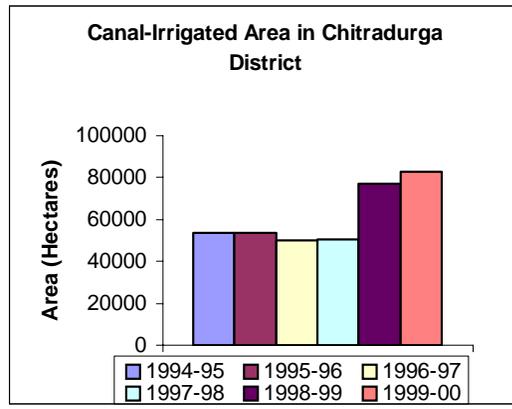
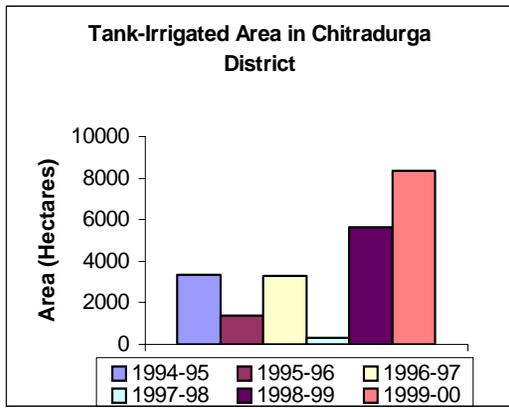
Table 3.17: Area under Irrigation by Sources in Chitradurga District

(in Hectares)

Year	Net Area Irrigated						Total
	Canals	Tanks	Wells	Bore wells	Lift Irrigation	Other Sources	
1994-95	53,530	3,329	10,619	43,980	4,825	-	116,283
(%)	(46.03)	(2.86)	(9.13)	(37.82)	(4.15)	-	(100.00)
1995-96	53,457	1,396	6,021	46,025	5,407	102	112,408
(%)	(47.56)	(1.24)	(5.36)	(40.94)	(4.81)	(0.09)	(100.00)
1996-97	50,027	3,318	6,869	51,600	6,928	-	118,742
(%)	(42.13)	(2.79)	(5.78)	(43.46)	(5.83)	-	(100.00)
1997-98	50,502	320	3,217	61,633	6,674	-	122,346
(%)	(41.28)	(0.26)	(2.63)	(50.38)	(5.46)	-	(100.00)
1998-99	76,965	5,638	6,968	80,673	11,077	1676	182,997
(%)	(42.06)	(3.08)	(3.81)	(44.08)	(6.05)	(0.92)	(100.00)
1999-00	82,849	8,354	6,698	89,935	8,778	664	197,278
(%)	(42.00)	(4.23)	(3.40)	(45.59)	(4.45)	(0.34)	(100.00)

Source: District Statistical Office, Chitradurga District.

Figure 3.12: Irrigated Area by Sources – Chitradurga District



3.5 Market Arrivals, Procurement and Marketed Surplus in Chitradurga District

Table 3.18: Quantity and Price of Produce Sold to Different Agencies: Rice

Sl.No	Agencies	1998-99		1999-00		2000-01	
		Quantity	Price/Qtl	Quantity	Price/Qtl	Quantity	Price/Qtl
1	Wholesale Market (Paddy)	15333 (63.3)	1200	17918 (65.8)	1273	20000 (70.81)	1300
2	Local Traders (Paddy)	5464 (22.6)	1010	5135 (18.86)	1170	4667 (16.52)	1200
3	Retailers (Rice)	2800 (11.6)	970	2217 (8.14)	1060	2556 (9.05)	1100
4	Consumers (Rice)	1250 (5.16)	1300	1063 (3.9)	1540	1113 (3.94)	1700

Note: Percentage in parenthesis for Quantity sold to different agencies

Chitradurga has been traditionally a good market for rice and groundnut. We have presented in Table 3.18 the produce of rice sold through various channels. Large share of the produce is sold through wholesale markets. Local traders and retailers take about 26 per cent of the share, whereas only about 4 per cent is directly sold to the consumers.

Table 3.19: Procurement and Quantity Marketed in Regulated Markets: Karnataka State:- Rice

Year	Procurement (in 000 Tonnes)	Quantity Marketed in Regulated Markets (in 000 Tonnes)	Production (in 000 Tonnes)	% Procured	% Marketed in Regulated Markets
1997-98	91.246	1487	3213	2.84	46.28
1998-99	100.43	1552	3657	2.75	42.46
1999-2000	111.04	1579	3635	3.05	43.43
2000-01	207.36	2199	3619	5.73	60.76

Source: (1) Karnataka State Agriculture Marketing Board Annual Reports
(2) Karnataka Economic Survey 2000-01
(3) Food and Civil Supply Department

Procurement of rice has been taken up in the State. About 2 to 5 per cent of the total produce is procured and about 40-60 per cent is sold in the regulated market. District-wise data on procurement is not separately maintained as the procurement operations are sporadic and do not cover large number of commodities. But the data on the market

Table 3.20: Details of Quantity Marketed and Production of Different Crops in Chitradurga District

Crop	Paddy		Maize		Ragi		Jowar		Wheat	
	1997-98	2000-01	1997-98	2000-01	1997-98	2000-01	1997-98	2000-01	1997-98	2000-01
Quantity Marketed in Regulated Markets (in 000 Tonnes)	83.43	27.50	119.39	29.74	20.43	6.68	8.41	2.58	–	–
Production (in 000 Tonnes)	248.08	58.66	262.46	138.87	55.75	126.55	61.54	33.67	0.38	1.10
% of Production Marketed	33.63	46.88	45.49	21.42	36.65	5.28	13.67	7.66	–	–

(Contd.)

Crop	Bajra		Tur		Gram		Groundnut		Sunflower	
	1997-98	2000-01	1997-98	2000-01	1997-98	2000-01	1997-98	2000-01	1997-98	2000-01
Quantity Marketed in Regulated Markets (in 000 Tonnes)	0.37	0.02	1.15	0.44	1.25	0.05	89.80	58.66	14.47	7.86
Production (in 000 Tonnes)	1.81	3.92	4.22	4.92	1.26	2.44	97.87	181.81	18.97	16.38
% of Production Marketed	20.44	0.51	27.25	8.90	99.21	2.00	91.75	32.27	76.28	48.01

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

arrivals is available at the district level. Unlike Raichur district, there is no evidence that the produce is coming in the district from any other district. It is a common phenomenon that market arrivals do not form a large proportion of the total production except for the commercial crops like groundnut and sunflower. Paddy is, of course, an exception and we find that about half of paddy production reaches the regulated markets.

3.6 Concluding Remarks

Raichur and Chitradurga are the districts with emerging commercial orientation in their agricultural economy. Both districts are predominantly food grain growing districts, but the commercial crops have made their presence felt in the region. Oil-seeds happen to be major commercial crop but slowly and steadily cereals are also reaching the regulated markets in a sizeable quantity. Among cereals, rice and jowar are the predominant crops getting into regulated markets. Among the two districts, Raichur is yet to realise full potential of its marketing operations and the regulated markets in the district have a good amount of arrivals from neighbouring regions. Chitradurga, on the other hand, has a well-developed oil-seed market economy. Infrastructural bottleneck is the major hurdle for both districts and the districts are in disadvantageous position due to the low proportion of irrigation.

CHAPTER IV

SAMPLE PROFILES OF THE SELECT REGIONS

4.1 Introduction

Marketing of agricultural produce is a function of the economic characteristics of the region or the participating household. It begins with the intensity of efforts towards the production activity and sustains through the economic viability parameters of the household. As detailed in the opening chapter, we had selected 60 sample households from each of the districts for a detailed study of the marketing activity at the micro level. We preferred to keep the two districts separately during the analysis, not only on the suggestion of the coordinating center but as located earlier, the two districts depict different characteristics. We are attempting here an analysis of the basic economic characteristics of the selected households. These include the socio-economic profile of the household, its production and asset base, cropping pattern and the production environment.

4.2. Raichur District

4.2.1 Distribution of Sample Farmers

(a) By Size Group of Holdings

The distribution of the selected sample farms is a typical representation of the profile of the district. This clearly mirrors the land distribution pattern of the district. As we had seen in chapter three, Raichur district has a very high concentration of small and marginal farmers and over the agricultural censuses this concentration is increasing at a faster rate. At the same time the number of holdings in the larger size classes of land holdings are declining, indicating receding base of the marketable surplus. But, as if to subvert this phenomenon, the farmers holding small, marginal and medium size of land are turning towards commercial crops. Added to this even some of the traditional cereal crops (Paddy, Wheat, Maize and Jowar) are assuming the role of a cash crop with larger share of the produce being sold in the market. In Table 4.1, we have presented the distribution of the sample selected from Raichur district. We observe that larger share of farmers (around 74%) are clustered in the first two lower size

groups, i.e., below 2 ha. Only about 6 per cent of the selected farmers fell in the size class of above 4 hectares.

Table 4.1: Distribution of Sample Farmers by Size Groups in Raichur District

Farm Size Group	Number	Percentage
I (<1 Ha.)	46	38.33
II (1-2 Ha.)	43	35.83
III (2-4 Ha.)	24	20
IV (4-6 Ha.)	3	2.5
V (>6 Ha.)	4	3.33
Total	120	100

(b) By Castes

Connecting the social characteristics with the economic activity like marketing is not a common point in any analysis. But here we have tried to look into the distribution of the sample households across their castes, in order to locate, in our further analysis if caste itself can serve as a facilitator in the marketing activity. Lingayaths and Vakkaligas are the two important agricultural castes and 40.8 per cent of the sample farmers belong to these two castes. We find from Table 4.2 that barring two larger size groups, the distribution of farmers in the first three lower size groups is similar in the two castes (more than 90% in these size groups). Only about 4 per cent in Lingayaths and 12 per cent in Vakkaligas were in the larger groups of above 4 ha. Among other castes (SC, ST and Muslims) there are no farmers having land above 4 ha.

Table 4.2: Distribution of Households By Castes and Farm Size Groups in Raichur District

Farm Size Group	Lingayats	Vakkaligas	ST	SC	Muslims	Others	Total
I (<1 Ha.)	7	7	5	10	6	11	46
II (1-2 Ha.)	11	5	7	6	6	8	43
III (2-4 Ha.)	5	10	3	0	1	5	24
IV (4-6 Ha.)	1	2	0	0	0	0	3
V (>6 Ha.)	0	1	0	0	0	3	4
Total (%)	24 (20.0)	25 (20.83)	15 (12.50)	16 (13.33)	13 (10.83)	27 (22.50)	120 (100.00)

4.2.2 Composition of Family by Age and Sex

Family size is an important determinant of marketable surplus. It is the major component that decides the quantity to be retained for home consumption. The average family size in our sample was quite large and it was 9.39. It also shows a narrow range of spread across the size classes. It is observed that the family size increased from 8.24 in size group I to 10.09 in size group II. The range of the size of family was between 8.24 and 13 members per family. A consistent increase in the number of children per household along with the size group of holding was observed except for the fifth size class.

Table 4.3: Distribution of Family Members Per Household By Age and Farm Size Groups in Raichur District

Farm Size Group	Adults			Children			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
I (<1 Ha.)	3.26	2.35	5.61	1.43	1.20	2.63	4.65	3.59	8.24
II (1-2 Ha.)	4.00	2.77	6.77	1.91	1.42	3.33	5.84	4.26	10.09
III (2-4 Ha.)	3.50	2.42	5.92	1.96	1.63	3.58	5.46	4.04	9.50
IV (4-6 Ha.)	5.67	2.67	8.33	2.33	2.33	4.67	8.00	5.00	13.00
V (>6 Ha.)	5.75	3.25	9.00	1.50	1.25	2.75	7.25	4.50	11.75
Average	3.72	2.55	6.27	1.73	1.39	3.13	5.41	3.98	9.39

4.2.3 Level of Education of Head of Farmers' Family

Education is one of the major determinants of access to market. In our sample households of Raichur district, we noted 17 out of 120 as illiterates (14.17 per cent) and the illiterates were mostly clustered in the small farm size groups (below 4 ha. See table 4.4). A larger number of educated farmers had education level between 8th and 10th class (32.6 per cent). PUC and Graduate farmers were located largely in Size groups III, IV & V leaving a few PUC educated farmers in Lower size groups of holdings.

A similar picture is seen, when we come to the analysis of the education level of the family members of the respondents (Table 4.5). In size classes I and II a large number of family members were with the education level between 8th and 10th class, while in size class III, there were seven family members educated up to PUC. In higher farm sizes (above 4 ha.), the education level of family members was above PUC.

Table 4.4: Distribution of Sample Households by Level of Education of Respondent Farmers in Raichur District

Farm Size Group	Illiterate	1 to 4 Class	5 to 7 Class	8 to 10 Class	PUC	Degree	Total
I (<1 Ha.)	8	8	13	14	3	0	46
II (1-2 Ha.)	7	9	11	15	1	0	43
III (2-4 Ha.)	2	4	3	10	4	1	24
IV (4-6 Ha.)	0	0	2	0	1	0	3
V (>6 Ha.)	0	0	2	0	2	0	4
Total (%)	17 (14.17)	21 (17.5)	31 (25.83)	39 (32.5)	11 (9.17)	1 (0.83)	120 (100)

Table 4.5: Distribution of Households by Highest Education Level of a Family Member in Raichur District

Farm Size Group	5 to 7	8 to 10	PUC	Graduate	Post-graduate	Others	Total
I (<1 Ha.)	6	22	9	9	0	0	46
II (1-2 Ha.)	5	15	12	11	0	0	43
III (2-4 Ha.)	1	6	7	6	2	2	24
IV (4-6 Ha.)	0	0	1	1	1	0	3
V (>6 Ha.)	0	0	2	2	0	0	4
Total (%)	12 (10)	43 (35.83)	31 (25.83)	29 (24.17)	3 (2.5)	2 (1.67)	120 (100)

4.2.4 Tennurial Status Average Size of Holdings and Distribution of Land

Land is the base for generating production and marketable surplus, but more than that land is also an icon of the social and economic power in the villages. The size of holding clearly dictates the access to the market not only due to the fact that they have the marketable surplus but also these farmers face little hindrance in negotiating in the market. We have presented the data on land distribution in Table 4.6. It is obvious that there is a consistent increase in the land owned and operated per farm with farm size. The average size of ownership holding worked out to be 3.90 ha. and operational holdings to 4.29 ha. (see Table 4.6). The difference between the two was due to the larger extent of leasing in (0.43) than leasing out (0.03). The leasing in of land was mainly in the smaller size groups, i.e., below 4ha, while there was no leased in land in higher size groups. Leased out land was very low and was mostly confined to Size-IV.

Table 4.6: Land Area Owned, Leased and Operated Per Farm by Size Groups in Raichur District
(in Hectares)

Farm Size Group	Land Owned	Land leased Out	Land leased in	Land Operated
I (<1 Ha.)	1.71	0.04	0.17	1.84
II (1-2 Ha.)	2.88	0.00	0.74	3.63
III (2-4 Ha.)	6.46	0.00	0.46	6.92
IV (4-6 Ha.)	12.57	0.67	0.00	11.90
V (>6 Ha.)	17.99	0.00	0.00	17.99
Average	3.90	0.03	0.43	4.29

Even though tenancy is legally banned in Karnataka, it is prevalent under cover. We saw concealed tenancy prevailing in Raichur district despite its predominant drought-prone characteristics. We can see from table 4.7 the extent of tenancy across the size classes. The share of owned, leased in and operated area were much lower for the first two size groups than the share of sample farmers in them.

Table 4.7: Percentage Distribution of Sample Farmers and Area by Tennurial Status and Farm Size Groups in Raichur District

Farm Size Group	Sample Farmers	(in percentage)			
		Area Owned	Area leased out	Area leased in	Area Operated
I (<1 Ha.)	38.33	16.85	50	15.69	16.48
II (1-2 Ha.)	35.83	26.51	0	62.75	30.32
III (2-4 Ha.)	20	33.18	0	21.57	32.28
IV (4-6 Ha.)	2.5	8.06	50	0	6.94
V (>6 Ha.)	3.33	15.39	0	0	13.99
Total	100	100	100	100	100

Distribution of leased in land was confined to small farm size groups-I to III (i.e., below 4 ha.). The area varied across farm sizes. It was 8 acres, 32 acres and 11 acres respectively in successive farm sizes. Almost the entire portion of the leased in land was irrigated.

Table 4.8: Distribution of Leased in Land by Size Groups in Raichur District

Farm Size Group	Area under Fixed Kind Rent (in Acres)			Average Amount of Produce Per Acre (in Qtls)		
	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total
I (<1 Ha.)	8	0	8	16.13	0	16.13
II (1-2 Ha.)	32	0	32	17.39	0	17.39
III (2-4 Ha.)	11	0	11	7.77	0	7.77
IV (4-6 Ha.)	0	0	0	0	0	0
V (>6 Ha.)	0	0	0	0	0	0
Total	51	0	51	16.97	0	16.97

4.2.5 Irrigation

Raichur district does not have large irrigation facilities, but in the sample we had about 89 percent of area under irrigation (Table 4.9). The irrigated area in all farm sizes ranged between 75 per cent and 98.4 per cent. We observed a decline in irrigated area with farm size. In farm size of less than 2 hectares, irrigated area was 97.37 per cent, on an average, whereas in farms above 2 hectares only about 81 per cent area was irrigated.

4.2.6 Distribution of Animals

Assets holdings indicate the economic stability of the household, as these serve as insurance against economic emergencies. Livestock holdings have been a traditional accompaniment of the farming business. Among the sample households we noticed about 12 animals per farm that included milch animals, draught animals and the young stock. Except for Size Class IV, we noticed a steady increase in the number of animals per farm with size group. Average number of animals per farm was 12.2, of which 5.21 were milch animals, 3.6 were draught animals and 3.38 young stock. Average number of draught animals did not show any trend with the farm size, but varied in a narrow range. Average draught animals per farm was 3.6 for all farm sizes, which indicates that many farmers owned more than a pair of bullocks, that indicates slim possibility of mechanisation.

Table 4.9: Irrigated and Unirrigated Operated Area Per Farm in Raichur District

(In Hectares)

Farm Size Group	Irrigated Area	Unirrigated Area	Total Area
I (<1 Ha.)	1.81	0.03	1.84
(%)	98.41	1.59	100.00
II (1-2 Ha.)	3.49	0.13	3.63
(%)	96.34	3.66	100.00
III (2-4 Ha.)	5.95	0.97	6.92
(%)	85.93	14.07	100.00
IV (4-6 Ha.)	9.00	2.90	11.90
(%)	75.63	24.37	100.00
V (>6 Ha.)	14.74	3.25	17.99
(%)	81.93	18.07	100.00
Average	3.85	0.43	4.29
(%)	89.88	10.13	100.0

Table 4.10: Number of Animals Per Farm by Size Groups in Raichur District

Farm Size Group	Milk animal	Draught animal	Young stock	Total
I (<1 Ha.)	3.89	3.12	2.93	9.94
II (1-2 Ha.)	5.43	3.9	3.13	12.45
III (2-4 Ha.)	6	4	4.2	14.2
IV (4-6 Ha.)	6	2	3.67	11.67
V (>6 Ha.)	7.33	4	4.33	15.66
Average	5.21	3.6	3.38	12.2

4.2.7 Distribution of Important Agricultural Assets

Among the other important assets included were tractors, tillers, bullock carts and pump sets. We have presented the asset holdings of the sample household in Table 4.11. Overall, only 12.5 per cent of the farmers owned tractors. The ownership of tractors was highest in farm size-III. But, when expressed in terms of share only 33 per cent of the farmers in this size group owned tractor, whereas, 66 per cent in Size class IV and 100 per cent in the highest size class of holding own tractors. The number of tillers owned by farmers was very low. Around 42 per cent of the total farmers owned Bullock Cart. Farmers in all categories except those with land holding less than 1-hectare owned bullock carts. Around 72 per cent of farmers in size class-II, 62 per cent in size class-III and 66 per cent

in size class-IV owned it. Farmers in all categories except the lowest size class of holding owned pump sets. The per cent of ownership increased with farm size.

Table 4.11: Distribution of Important Assets by Farm Size Groups and Their Value Per Unit in Raichur District

(Value in ,000 Rupees)

Farm Size Group	No. of Farmers	Tractor		Tiller		Bullock Cart		Pumpset	
		No.	Average Value/Unit	No.	Average Value /unit	No.	Average Value /Unit	No	Average Value /Unit
I (<1 Ha.)	46	1	280	0	0	0	0	0	0
II (1-2 Ha.)	43	0	0	0	0	31	313	2	40
III (2-4 Ha.)	24	8	326	2	100	15	317	7	44
IV (4-6 Ha.)	3	2	325	0	0	2	30	2	43
V (>6 Ha.)	4	4	308	0	0	2	50	5	40
Total	120	15	322	2	100	50	320	16	44

4.2.8 Storage Facilities Available with the Farmers

Among the other favourable assets come the storage facilities. The storage capacity increased with farm size except for farm size-IV. The number of storages was 74 out of 120 and the number of rooms used for storage was 45 for all size groups. Number of rooms for storage was higher in the smaller farm sizes whereas, in bigger farm sizes the capacity of the storages was quite high.

Table 4.12: Type of Storage Facility by Farm Size Groups in Raichur District

Farm Size Group	Room	Shed	No Storage	Total	Capacity (in Qntls)
I (<1 Ha.)	13	0	33	46	154
II (1-2 Ha.)	15	0	28	43	216
III (2-4 Ha.)	12	0	12	24	363
IV (4-6 Ha.)	2	0	1	3	275
V (>6 Ha.)	3	1	0	4	633
Total	45	1	74	120	315(weighted average)

The farmers were asked their opinion about the storage facilities. About 51 per cent of farmers expressed their willingness to create additional storage facility. The positive responses favouring creation of additional storage facilities ranged between 43.48 and 100 per cent across the size groups, and these responses were in a very narrow range. The

desired storage capacity to be created ranged from 6.02 qtls to 312.5 qtls, which increased along with size of the farm. Farmers in all size groups wished to retain their produce in large quantities to be sold later at higher prices.

Table 4.13: Number of Farmers Giving Opinion on Development of Better Storage Facilities, if Institutional Finance is Made Available in Raichur District

Farm Size Group	Stating			If yes, Total Capacity to be Created (in Qtls)	% of Sample Farmers stating Yes	Storage Capacity to be Created Per Farm (in Quintals)
	Yes	No	Total			
I (<1 Ha.)	20	26	46	277	43.48	6.02
II (1-2 Ha.)	24	19	43	411	55.81	9.56
III (2-4 Ha.)	12	12	24	609	50.00	25.38
IV (4-6 Ha.)	3	0	3	333	100.00	111
V (>6 Ha.)	3	1	4	1250	75.00	312.5
Total	62	58	120	474(weighted avg.)	51.67	3.95

4.2.9 Cropping Pattern

Cereals dominate cropping pattern in Raichur district with oilseeds as the major cash crop. The sample farmers also depicted the same trend. We have shown the cropping pattern of the sample farms in Raichur district in Table 4.14.

The total gross cropped area bears a direct relationship with the size of holding, where it ranges from 84.77 acres to 166.12 acres. In size groups-I and II, the entire cropped area was allocated to Paddy and Jowar and cultivation of commercial crops was not undertaken. In farm sizes of 2-4 ha., a slight reduction in the percentage of area under paddy and around 1.81 per cent area was allocated to Cotton and Sunflower each. In farms having 4-6 ha. of land, the area under Jowar and Sunflower increased, but no area was allocated to Cotton. Not surprisingly, in Size-V, around 81.93 per cent area was covered under Paddy and Jowar and a higher percentage of area was devoted to Cotton (4.17 per cent) and Sunflower (5.56 per cent). This was more than the other size groups of holding. On the whole, the major crop among the sample cultivators was paddy and the second important crop was Jowar. The per cent of area under Paddy was more in smaller size farms while per cent of area under Jowar was higher in bigger size.

Table 4.14: Area under Different Crops by Size Groups in Raichur District

(in Hectares)

Farm Size Group	Paddy	Jowar	Cotton	Sunflower	Total Cropped Area
I (<1 Ha.)	33.18	0.60	--	--	33.91
(%)	(97.84)	(1.77)	0	0	(100)
II (1-2 Ha.)	59.20	3.18	--	--	62.38
(%)	(94.90)	(5.10)	0	0	(100)
III (2-4 Ha.)	55.24	7.58	1.20	1.20	66.45
(%)	(83.13)	(11.41)	(1.81)	(1.81)	(1000)
IV (4-6 Ha.)	8.40	2.68	--	0.80	14.28
(%)	(58.82)	(18.77)	0	(5.60)	(100)
V (>6 Ha.)	20.80	2.78	1.20	1.60	28.78
(%)	(72.27)	(9.66)	(4.17)	(5.56)	(100)
Total	176.81	16.82	2.40	3.60	205.80
(%)	(85.92)	(8.17)	(1.17)	(1.75)	(100)

4.2.10 Productivity of Important Crops Among Sample Farmers

Table 4.15: Average Production of Important Crops in Raichur District

(in Qtls Per Hectare)

Farm Size Group	Paddy	Jowar	Cotton	Sunflower
I (<1 Ha.)	26.77	3.00	0	0
II (1-2 Ha.)	27.09	4.19	0	0
III (2-4 Ha.)	28.20	4.22	2	6.67
IV (4-6 Ha.)	28.93	2.54	0	7.50
V (>6 Ha.)	26.29	4.62	2.33	6.00
Total	27.63	4.28	2.17	6.56

We have presented the productivity of important crops among the sample farmers in Table 4.15. The average productivity per hectare was 27.63 quintals per acre. The productivity of Paddy increased along with the farm size except for size class-V. This was due to a shift in the cropping pattern towards Cotton and Sunflower.

4.3 Davangere District

Davangere was carved out of the earlier Chitradurga district. The new district of Davangere retained the characteristics of Chitradurga district, and a clear rain-fed cropping pattern. The city of Davangere is a commercial centre and, therefore, the agricultural economy of the district is caught between a full commercial exposure and severe climatic constraints. Among the constraints on the agricultural economy, small size of holding and the climatic variability are the major ones. Even then some marketable surplus is generated

for the purpose of cash requirement. Traditionally, Davangere region had cotton as a major cash crop, but our sample region had sugarcane and paddy as the major crops.

4.3.1 Distribution of Sample Farmers

(a) By Size Groups and Holdings

Sample farmers in Davangere were chosen using the sampling framework of the study. Therefore, we had a large number of sample farmers with size of holding below 4 hectares. Only about 5 percent of the selected farm households had size of holding above 4 hectares. This can be seen from table 4.16.

Table 4.16: Sample Farmers by Size Groups in Davangere District

Farm Size Group	Number	Percentage
I (<1 Ha.)	27	45.00
II (1-2 Ha.)	23	38.33
III (2-4 Ha.)	7	11.67
IV (4-6 Ha.)	2	3.33
V (>6 Ha.)	1	1.67
Total	60	100.00

(b) By Castes

Davangere is a region known for the concentration of Lingayat and Vakkaliga castes. This is clearly depicted in the sample. About 51.7 percent of the sample farmers belonged to Lingayat and Vakkaliga castes. About 95 per cent of the Lingayat cultivators were in the three smaller groups of holdings whereas, around 88 per cent of Vakkaliga farmers from the sample were in these size group of holdings. We had 17 farmers belonged to Scheduled Castes and Scheduled Tribes. In other castes, no farmer operates more than 4 hectares of land except one in ST.

Table 4.17: Number of Households by Castes and Farm Size Groups in Davangere District

Farm Size Group	Lingayath	Vakkaliga	ST	SC	Muslim	Others	Total
I (<1 Ha.)	13	1	1	7	3	2	27
II (1-2 Ha.)	4	5	3	4	1	6	23
III (2-4 Ha.)	4	2	1	0	0	0	7
IV (4-6 Ha.)	0	1	1	0	0	0	2
V (>6 Ha.)	1	0	0	0	0	0	1
Total	22	9	6	11	4	8	60
(%)	(36.67)	(15.00)	(10.00)	(18.33)	(6.67)	(13.33)	(100)

4.3.2 Composition of Family by Age and Sex

Table 4.18 includes the age distribution by farm sizes. Family size increased with bigger farms except for size group-V. It was 8.41 in farm size-I and 14.50 in farm size-IV, while in size class-V it was 13.00. The average size of family in the sample was 9.22.

Table 4.18: Distribution of Family Members Per Household By Age and Farm Size Groups in Davangere District

(in Numbers)

Farm Size Group	Adults			Children			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
I (<1 Ha.)	3.15	2.30	5.44	1.48	1.48	2.96	4.63	3.78	8.41
II (1-2 Ha.)	3.39	2.35	5.74	1.70	1.57	3.26	5.09	3.91	9.00
III (2-4 Ha.)	3.86	2.86	6.71	2.29	2.00	4.29	6.14	4.86	11.00
IV (4-6 Ha.)	6.00	4.00	10.00	2.50	2.00	4.50	8.50	6.00	14.50
V (>6 Ha.)	6.00	4.00	10.00	2.00	1.00	3.00	8.00	5.00	13.00
Average	3.47	2.47	5.93	1.70	1.58	3.28	5.17	4.05	9.22

4.3.3 Level of Education of Head of Farmers' Family

Table 4.19: Distribution of Sample Households by Level of Education of Respondent Farmers in Davangere District

Farm Size Group	Illiterate	1 to 4	5 to 7	8 to 10	PUC	Degree	Total
I (<1 Ha.)	4	5	8	10	0	0	27
II (1-2 Ha.)	1	7	7	7	1	0	23
III (2-4 Ha.)	1	2	1	3	0	0	7
IV (4-6 Ha.)	1	0	0	0	0	1	2
V (>6 Ha.)	0	0	0	1	0	0	1
Total	7	14	16	21	1	1	60
(%)	11.67	23.33	26.67	35.00	1.67	1.67	100.00

Only seven out of 60 (i.e., 11.67 per cent) farmers were illiterate and out of these 57 per cent were in small size group with less than 1 hectare. The remaining sample was evenly distributed between the other three size groups and no illiterates in Size class -V. Among literate farmers the highest number were in the education level 8 to 10 (21). Farmers in lower size groups were mostly at education levels 1 to 4, 5 to 7 and 8 to 10. In size class-IV, 50 per cent is illiterate and the rest were at a higher education level.

Table 4.20: Distribution of Households by Highest Education Level of a Family Member in Davangere District

Farm Size Group	5 to 7	8 to 10	PUC	Graduate	Total
I (<1 Ha.)	7	12	5	3	27
II (1-2 Ha.)	2	13	3	5	23
III (2-4 Ha.)	0	2	5	0	7
IV (4-6 Ha.)	0	0	0	2	2
V (>6 Ha.)	0	0	0	1	1
Total	9	27	13	11	60
(%)	(15.00)	(45.00)	(21.67)	(18.33)	(100.00)

We noted 11 graduates and 13 persons having entered college education in the sample. Most of the highly educated persons seemed to be from the first two farm sizes. A majority of these persons fell in the category of having educated up to 8th or 10th standard.

4.3.4 Tennurial Status, Average Size of Holdings and Distribution of Land

Land is the basic productive asset of the sample farmers. The increasing demographic pressures as well as the trends in commercialization caused shrinkage in the size of holding as a general phenomenon. Davangere is not an exception to this rule. The average ownership size of holding among the sample farmers worked out to be 3.47, whereas, the average operated area came to 3.68 hectares.

Table: 4.21: Land Area Owned, Leased in and Operated per Farm by Size Groups in Davangere District

Farm Size Group	Land Owned	Land leased Out	Land leased In	Land Operated
I (<1 Ha.)	1.38	0.00	0.15	1.61
II (1-2 Ha.)	3.32	0.00	1.44	3.61
III (2-4 Ha.)	7.07	0.00	3.11	7.07
IV (4-6 Ha.)	14.75	0.00	5.00	12.75
V (>6 Ha.)	19.45	0.00	8.00	19.45
Average	3.47	0.00	1.28	3.68

A few observations come out of Table 4.21. The land owned, leased in and operated increased consistently with farm size. Despite the legal ban on tenancy, we noted the area leased in accounts to almost 30 per cent of the size of operated holdings. The land leased out was zero for all the farms sizes, but leased in land increased with size of farms. Of the total leased in land, 73.48 per cent was in the two bigger farm sizes.

Table 4.22: Distribution of Leased in land by Size of Holdings in Davangere District

Farm Size Group	Area under Fixed Cash Rent (in acres)			Average Cash Rent Per Acre (in Rs.)		
	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total
I (<1 Ha.)	0	6.25	6.25	0	1720	1720
(%)	0	100	100	0	100	100
II (1-2 Ha.)	2	4.5	6.5	2500	2000	2154
(%)	30.77	69.23	100			
III (2-4 Ha.)	0	0	0	0	0	0
(%)						
IV(4-6 Ha.)	0	0	0	0	0	0
(%)						
V (>6 Ha.)	0	0	0	0	0	0
(%)						
Total	2	10.75	12.75	2500	1837	1941
(%)	15.69	84.31	100			

The tenurial contracts involved only fixed cash rent and there was not a single case of contract involving 'share of produce'. Average cash rent worked out to be Rs 1,941, and that was higher for irrigated area (Rs 2,500). There was no evidence of cost sharing either and most of the lessees used cash as well as other components of cost from their own resources.

4.3.5 Irrigation

As mentioned earlier, Davangere is not a significantly irrigated region of the state. The prevalence of small share of irrigated area was, therefore, not surprising. The sample farms had about 35 per cent of their holdings under irrigation. On the whole, more than 60 per cent area remained unirrigated. The proportion of irrigated area was a bit higher in Size class II (33.78%) than Size Class-I (9.09%).

Table: 4.23: Irrigated and Unirrigated Operated Area Per Farm in Davangere District

Farm Size Group	Irrigated Area	Unirrigated Area	Total Area
I (<1 Ha.)	0.15	1.47	1.61
(%)	9.09	91.10	100.00
II (1-2 Ha.)	1.44	2.17	3.61
(%)	39.78	60.12	100.00
III (2-4 Ha.)	3.11	3.96	7.07
(%)	43.95	56.03	100.00
IV(4-6 Ha.)	5.00	7.75	12.75
(%)	39.22	60.78	100.00
V (>6 Ha.)	8.00	11.45	19.45
(%)	41.13	58.87	100.00
Average	1.28	2.40	3.68
(%)	34.75	65.31	100.00

4.3.6 Distribution of Animals

Asset holding in Davangere district is not comparable with that of Raichur district. The sample farmers did not maintain large livestock. As can be seen from Table 4.24, the average number of animals per farm was 5.82, of which 3.23 were milch animals, 1.43 draught animals and 2.07 were young stock. The livestock holding was directly proportional to the size of land holdings. Even though the livestock holdings show an increase in draught animal along with farm size, the average number of draught animals was 1.43, indicating that most of the farmers did not own a pair of bullocks.

Table 4.24: Distribution of Animals Per Farm by Size Groups in Davangere District

Farm Size Group	Milch Animal	Draught Animal	Young Stock	Total
I (<1 Ha.)	2.15	0.89	1.93	4.96
II (1-2 Ha.)	2.26	1.91	1.91	6.09
III (2-4 Ha.)	3	1.71	2.43	7.14
IV (4-6 Ha.)	3	2	2.5	7.5
V (>6 Ha.)	2	2	6	10
Average	2.32	1.43	2.07	5.82

4.3.7 Distribution of Important Agricultural Assets

As regards the other assets we found that only farmers in Size groups with above 2 hectares owned tractors. It is surprising that a large number of farmers from the size class II

owned tractors. Farmers in all groups owned bullock carts. The per cent of farmers owning carts was highest in Size-V and the second highest was in size-II (78%). Farmers in all size groups also owned Pump sets. The per cent of farmers owning pump set was higher in the size class of above 2 ha.

Table 4.25: Distribution of Important Assets by Farm Size Groups and their Value Per Unit in Davangere District

(Value in 000, Rupees)

Farm Size Group	No. of Farmers	Tractor		Bullock Cart		Pump-set	
		Number	Average Value/Unit	Number	Average Value/Unit	Number	Average Value/Unit
I (<1 Ha.)	27	0	0	2	20	1	40
II (1-2 Ha.)	23	0	0	18	29	6	44
III (2-4 Ha.)	7	4	308	4	29	5	48
IV (4-6 Ha.)	2	2	350	1	30	3	40
V (>6 Ha.)	1	0	0	1	40	1	50
Total	60	6	322	26	29	16	45

4.3.8 Storage Facilities Available with the Farmers

Facility for storage of grains provided the farmer flexibility to approach the market at their will. The number of storage among the sample farmers was only 54, leaving 6 farmers without the availability of storage. In large farms of size groups-IV and V, the number of storage was 2 and 1 respectively, but largely not in use. A few farmers used *Kanaja* (a traditional huge storage bin) for storage and these farmers belonged to the lower three size groups. The storage capacity increased with size of holding for the first three size groups. But it gives an impression that the facility was inadequate.

Table 4.26: Type of Storage Facility by Farm Size Groups in Davangere District

Farm Size Group	Kanaja (Storage Bin)	No. of Storage	Total	Capacity (in Ontls)
I (<1 Ha.)	1	26	27	10
II (1-2 Ha.)	2	21	23	15
III (2-4 Ha.)	3	4	7	22
IV (4-6 Ha.)	0	2	2	0
V (>6 Ha.)	0	1	1	0
Total	6	54	60	53

Table 4.27: Number of Farmers Giving Opinion on Development of Better Storage Facilities, If Institutional Finance Made Available in Davangere District

Farm Size Group	Stating			If Yes, Total Capacity to be Created (in Qtls)	% of Sample Farmers stating Yes	Storage Capacity to be Created per Farm (in Quintals)
	Yes	No	Total			
I (<1 Ha.)	7	20	27	64	25.93	2.37
II (1-2 Ha.)	15	8	23	107	65.22	4.65
III (2-4 Ha.)	7	0	7	171	100.00	24.43
IV (4-6 Ha.)	2	0	2	225	100.00	112.50
V (>6 Ha.)	1	0	1	100	100.00	100.00
Total	32	28	60	119	53.33	1.98

More than half of the farmers indicated inadequacy of storage facility and indicated to improve it. Almost all the farmers in three higher size groups had opted for improving the storage facilities. The average capacity needed was only for about two quintals. The requirement was highest in the larger size group of holding.

4.3.9 Cropping Pattern

The cropping pattern of the sample farms is presented in Table 4.28. It is quite clear that Paddy, Maize and Sugarcane acted as cash crops. The major crop among the sample farmers was Maize with 42 per cent share in total cropped area. The small farmers had higher share of area under Maize than big farmers. In the case of Paddy, it was the reverse. The small farmers had smaller share of the cropped area allocated to paddy.

Table 4.28: Area under Different Crops by Size Groups in Davangere District (in Hectares)

Farm Size Group	Paddy	Maize	Jowar	Ragi	Sugarcane	Total Cropped Area
I (<1 Ha.)	--	11.22	4.62	0.48	0.80	17.42
(%)	0	(64.39)	(26.54)	(2.76)	(4.59)	(100)
II (1-2 Ha.)	5.20	13.54	6.08	3.20	4.95	33.18
(%)	(15.67)	(40.82)	(18.34)	(9.64)	(14.92)	(100)
III (2-4 Ha.)	3.20	7.96	3.43	1.30	3.60	19.79
(%)	(16.17)	(40.22)	(17.34)	(6.57)	(18.19)	(100)
IV (4-6 Ha.)	1.60	2.80	1.40	--	2.40	10.20
(%)	(15.69)	(27.450)	(13.73)	0	(23.53)	(100)
V (>6 Ha.)	3.20	1.60	1.60	1.38	--	7.78
(%)	(41.13)	(20.57)	(20.57)	(17.74)	0	(100)
Total	13.20	37.12	17.14	6.36	11.75	88.37
(%)	(14.94)	(42.0)	(19.40)	(7.20)	(13.3)	(100)

Farmers with land size smaller than 1 hectare did not grow paddy. The area allocated to paddy increased from 15.67 per cent in size class II to 41.13 per cent in size class V. In the case of sugarcane as another cash crop, small farmers also had a little share while big farmers allocated more shares to sugarcane. The share of area under sugarcane increased from 4.59 in size class-I to 23.53 in size class-IV.

4.3.10 Productivity of Important Crops Among Sample Farmers

Table 4.29 includes the productivity of the crops among the sample farmers. Generally, there was a positive relationship between size and productivity, but the performance of the size-class III was far better than the other groups. Paddy had good productivity and so also sugarcane. Maize was used as a cash crop and its productivity was about 16 quintals

Table 4.29: Productivity of Important Crops in Davangere District
(in Qtls per Hectare)

Farm Size Group	Paddy	Maize	Jowar	Ragi	Sugarcane
I (<1 Ha.)	0	16.26	5.62	8.33	40
II (1-2 Ha.)	27.31	16.45	6.38	4.13	54.52
III (2-4 Ha.)	27.50	17.94	5.94	3.38	61.11
IV (4-6 Ha.)	30	19.29	5.71	0	46.67
V (>6 Ha.)	35	15.00	5	1.74	0
Total	29.55	16.86	5.9	3.77	53.95

4.4 Summary

The sample profiles of the two districts suggest quite a few interesting issues. First, the land size was shrinking and that left a smaller base for farm production activities. Even though tenancy is legally banned in Karnataka, the prevalence of leasing out operations was seen among the sample farmers. In order to overcome the land based constraint, the cultivators, leased in land. Second, oilseeds, sugarcane were the traditional cash crops. But with the increased market operations in paddy and wheat, these cereals have also assumed the role of cash crops. Maize is strongly emerging as a new cash crop. The processing units largely procure it. Third, the asset position of the sample farmers was not very promising. Some of the farmers owned tractors but these were largely used for transportation than tillage or farm based activities. Many owned irrigation pump sets. Lastly, even though the two sample regions have a commercial orientation, the production base did not allow for scaling up of this operation.

CHAPTER V

MARKETING IN RAICHUR DISTRICT

5.1. Introduction

Raichur district was chosen for the purpose of this study on the basis of the multifarious marketing activities. Unlike other parts of the country, the districts of Deccan Plateau do not specialize in marketing of single crop. In response to the frequent occurrence of droughts, the cropping pattern is developed under risk spreading. The commercialisation has been showing signs in the crop pattern changes. Oil-seeds had been traditional commercial crops but in the recent past the surplus production of paddy and other cereals has been entering the markets. The marketing activities are not at the peak as still the farmers in Raichur as well as the state have to come out of the subsistence orientation.

This chapter is based on data collected from the farmers and the other marketing intermediaries in the district. As the marketing infrastructure is not well developed in the state, the data from Commission agents is hardly of any use. The Commission agents operate at a very low key and mostly procure from the individual farmers at the farm itself. We have analysed here the production, quantity marketed and seasonality of quantity marketed. Transportation of the produce, expenditure on transportation and the marketing process formed part of our analysis. There was no direct sale to the millers and therefore, the intricacies of this sale could not be investigated. The rice mills are very few and most of the millers from different districts procure from the market directly. Similarly, the presence of commission agents is most illusive and no information was available on this aspect. Farmers' opinion about the marketing structure and bottlenecks forms an important part of this chapter.

5.2 Production and Marketing of Crops in Raichur

Paddy being one of the major food crops of the district we have taken the production and marketing of paddy here. Table 5.1 gives the production and marketed surplus of paddy across the size classes of holdings. For the sample as a whole, the per cent of marketed surplus of paddy worked out to 83.9 per cent. A steady and consistent increase was seen in the quantity marketed of paddy with the increase in the size of farm.

It ranged from 72.92 per cent in lowest farm size to 93.15 in the farm size above 6 hectares. Even though paddy is one of the major food consumption items, only a small per cent of the produce was retained for home consumption and for seeds. In the case of quantity retained for consumption it was 31 quintals per farm in aggregate. As the farm size increased the per cent of quantity retained for this purpose decreased, i.e., from 27.08 quintals in first size class to 6.37 per cent in the last. Of the total produce, only 1 quintal were set aside for seeds. Hence, on the whole, a major share of the produce of paddy was marketed; the percentage marketed by big farmers was higher.

Table 5.1: Production and Quantity Marketed Per Farm of Paddy in Raichur District

(in quintals)

Farm Size Group	Production	Home Consumption	Seed	Quantity Marketed	Percentage of Quantity Marketed to Production
I (<1Ha.)	96	26	0	70	72.98
II (1-2 Ha.)	174	32	1	141	81.25
III (2-4 Ha.)	307	37	1	269	87.62
IV (4-6 Ha.)	203	25	0	178	87.68
V (>6 Ha.)	628	40	3	585	93.15
Weighted Average	199	31	1	166	83.92

Jowar is another important food crop grown by the farmers of Raichur district. It was being grown largely for home consumption but recently some portion of the produce is marketed. Even though production per farm of Jowar increased with size, the first two smaller groups and farmers in size class of above 6 hectares did not have surplus for marketing. In these groups, Jowar production was completely utilised for home consumption and animal feed. The quantity consumed increased from 3 quintals in the lowest size class to 8 quintals in the next group, but a decrease in the quantity used as animal feed from 2 quintals to 1 quintal in size-III was seen. Only farmers in III & IV groups marketed their produce. In size group III, the per cent marketed was 7.69 per cent, while it was 45.5 per cent in size group IV. On an average only 1 quintal of Jowar was marketed. The amount utilised for consumption and for animal feed added up to 12 quintals per farm for the sample while the production being 13 quintals. Hence, the marketed quantity was only a meagre amount.

Table 5.2: Production and Quantity Marketed Per Farm of Jowar in Raichur District
(in Quintals)

Farm Size Group	Production	Home Consumption	Animal Feed	Quantity Marketed	Percentage of Quantity Marketed to Production
I (<1Ha.)	5	3	2	0	0
II (1-2 Ha.)	9	8	1	0	0
III (2-4 Ha.)	13	11	1	1	7.69
IV (4-6 Ha.)	11	5	1	5	45.45
V (>6 Ha.)	20	14	6	0	0
Weighted Average	13	11	1	1	7.69

Sunflower is an emerging commercial crop in the district. The entire quantity produced was marketed. Only the farmers with land size above 2 hectares undertook production of this crop. It increased with farm size and hence, the quantity marketed. The production and marketed quantity was 10 quintals in Size class of holding between 2 and 4 hectares and it increased to 24 quintals in the last size class.

Table 5.3: Production and Quantity Marketed Per Farm of Sunflower in Raichur District

Farm Size Group	Production	Quantity Marketed	Percentage of Quantity Marketed to Production
I (<1Ha.)	0	0	0
II (1-2 Ha.)	0	0	0
III (2-4 Ha.)	10	10	100.00
IV (4-6 Ha.)	15	15	100.00
V (>6 Ha.)	24	24	100.00
Weighted Average	15	15	

The disposal of the produce for various use including marketing in terms of quantity was noted above. The percent distribution is given below in Table 5.4. In the case of paddy, the share in output was higher than share in quantity marketed in the smallest size class of holding. In other groups, the latter was higher than the former. Farmers marketed relatively larger proportion of the produce in the land size above 1 hectare while farmers with land size below 1 hectare (small farmers) retained a relatively larger proportion of the produce. More than 90 per cent of the production of Jowar was from the first two lower size groups, but no quantity was marketed. In Size-classes of 2 to 6 hectares, the share of quantity marketed was much higher than the share in output. The combined share of output of these two groups was only 33.11 per cent while the entire

marketed quantity of Jowar was from these two groups. For sunflower, whatever was produced was marketed as it is a cash crop and hence the per cent share of both output and quantity marketed remained the same. Only farmers with farm sizes above 2 hectares, undertook the production and marketing of sunflower. In farm size-III, the per cent produced and marketed was 62.99 percent that is higher than in the successive size groups.

Table 5.4: Percentage Distribution of Total Output and Quantity Marketed of Paddy, Jowar and Sunflower by Farm Size Groups in Raichur District

(in Quintals)

Farm Size Group	2 Paddy		3 Jowar		Sunflower	
	Percentage of Output	Percentage of Quantity marketed	Percentage of Output	Percentage of Quantity marketed	Percentage of Output	Percentage of Quantity marketed
I (<1Ha.)	19.65	17.22	22.07	0.00	0.00	0.00
II (1-2 Ha.)	33.68	32.88	37.14	0.00	0.00	0.00
III (2-4 Ha.)	32.79	34.53	29.94	61.54	62.99	62.99
IV (4-6 Ha.)	2.71	2.86	3.17	38.46	11.81	11.81
V (>6 Ha.)	11.18	12.51	7.68	0.00	25.20	25.20
Total	100.00	100.00	100.00	100.00	100.00	100.00

5.3 Seasonality in Marketing

Crop production is a seasonal activity and therefore, the produce is expected to arrive in the market in the specific harvesting season. Second, the farmers as a group are not very strong in their economic base and therefore, rarely they speculate about the prices. It is only in sporadic cases that the farmer waits for the market price to reach his expectation and only then he releases the produce in the market. But it was observed that this phenomenon is increasing in the recent past. We have analysed here the marketing seasonality of various crops.

Table 5.5: Percentage Quantity Marketed Per Farm of Paddy in Different Months by Size groups in Raichur District

(in Quintals)

Farm Size Group	Kharif			Rabi			Total
	November	December	January	March	April	May	
I (<1Ha.)	16	23	0	5	19	7	70
(%)	22.86	32.86	0.00	7.14	27.14	10.00	100.00
II (1-2 Ha.)	26	39	6	5	49	16	141
(%)	18.44	27.66	4.26	3.55	34.75	11.35	100.00
III (2-4 Ha.)	37	103	21	9	58	41	269
(%)	13.75	38.29	7.81	3.35	21.56	15.24	100.00
IV (4-6Ha.)	0	0	0	0	35	143	178
(%)	0.00	0.00	0.00	0.00	19.66	80.34	100.00
V (>6 Ha.)	0	100	335	0	150	0	585
(%)	0.00	17.09	57.26	0.00	25.64	0.00	100.00
Average	24	53	24	5	38	22	166
(%)	14.46	31.93	14.46	3.01	22.89	13.25	100.00

We have presented in Table 5.5, the marketing calendar of paddy. It may be noted that dry paddy can be stored and marketed at an opportune time. The pressure of marketing was highest in the month of December (harvest season) with a quantity of 53 quintals on an average, followed by 38 quintals in April, 24 quintals each in November and January and 22 quintals in May. The pressure was lowest in March with the lowest marketed quantity of 5 quintals. In the months of December and April, the percentage of quantity marketed of paddy depicted a small range across the farm sizes. In December, it ranged from 27.66 quintals to 38.29 quintals and in April from 19.66 to 34.75 quintals. A declining trend was seen with the increase in farm sizes in the month of November. In November, the proportion of marketed surplus in the smallest size class was 22.86 per cent, which fell to 13.8 per cent in the third size class of holding. In January, the quantity marketed began only in the Size group of 1-2 hectares. In the month of March, a declining trend was noticed with the bigger size groups (7.14 percent in Size-class I to 3.35 in Size class –III). On the whole, during the months of November, December, March and April, it was the small farmers with less than 4 hectares of land, who undertook most of the paddy marketing. In January, May and to an extent in April the big farmers dominated.

Table 5.6: Percentage Quantity Marketed Per Farm of Jowar in Different months by Size Groups in Raichur District

Farm Size Group	May	Total
I (<1Ha.)	0	0
(%)	0.00	0.00
II (1-2 Ha.)	0	0
(%)	0.00	0.00
III (2-4 Ha.)	1	1
(%)	100.00	100.00
IV (4-6 Ha.)	5	5
(%)	100.00	100.00
V (>6 Ha.)	0	0
(%)	0.00	0.00
Weighted Average	1	1
(%)	100.00	100.00

We have seen above that not a large share of Jowar is marketed. The important month for marketing of Jowar is May. Farmers cultivating less than 2 hectares of land did not participate in the marketing of jowar and it was confined to farmers in Size groups-III and IV (farmers with land size 2-6 hectares). The quantity marketed by farmers in size group-III was 1 quintal while that marketed by farmers in Size group-IV was 5 quintals. The average quantity marketed per farm for the sample was 1 quintal.

Table 5.7: Percentage of Quantity Marketed Per Farm of Sunflower by Size Groups in Raichur District

(in Quintals)

Farm Size Group	April	May	Total
I (<1Ha.)	0	0	0
(%)	0.00	0.00	0.00
II (1-2 Ha.)	0	0	0
(%)	0.00	0.00	0.00
III (2-4 Ha.)	0	10	10
(%)	0.00	100.00	100.00
IV (4-6 Ha.)	15	0	15
(%)	100.00	0.00	100.00
V (>6 Ha.)	24	0	24
(%)	100.00	0.00	100.00
Total	39	10	49
(%)	79.6	20.4	100.00

Sunflower being a cash crop, the total produce is marketed. Two important months for marketing of Sunflower is April and May. In these two months, the pressure

of marketing is very high but especially so in the month of April. Around 79.6 per cent of the total marketed quantity was marketed in this month. In the month of April, the big farmers in size groups above 4 hectares of land undertook marketing, the marketed quantity in size group-IV being 15 quintals and that in size-V, 24 quintals per farm. The small farmers (only farmers in size group-III) sold their produce in the month of May, which amounts to 10 quintals.

5.4 Market Arrivals and Price Received in Raichur District

Raichur, being the largest rice-producing district in the State, the quantity marketed of rice and paddy in the regulated markets is also quite high. The steady increase in the market arrivals of paddy and rice with successive years is very clearly seen in Table 5.8. The quantity of Rice marketed increased from 99,872 quintals in 1999-2000 to 1,52,990 quintals in 2001-02 while that of paddy increased from 42,52,229 quintals to 63,82,222 quintals. The market arrivals of all commercial crops (Cotton, Groundnut & Sunflower) remained stagnant. The quantity marketed of Jowar also declined and no marketed quantity of Maize was reported.

Table 5.8: Market Arrivals of Different Crops in Raichur District

(in Quintals)

Crop	1999-00	2000-01	2001-02
Rice (Processed)	99,872	103,622	152,990
Paddy (Unprocessed)	42,52,229	61,66,128	63,82,222
Maize	812	242	
Jowar	90,934	137,570	80,526
Cotton (Bales)	3,18,989	1,80,845	2,02,522
Groundnut	2,92,411	2,66,962	2,22,528
Sunflower	2,31,976	2,34,576	2,59,099

The prices offered in the Regulated markets for the produce marketed by the farmers of the district was, by and large, similar for the farmers in different size groups (Table 5.9). Hence, small farmers are less prone to exploitation in selling their produce in these markets. But, wide disparities are seen in the prices offered by different agencies like wholesale market, retailers, consumers and the local traders who involve in the procurement of the produce. Table 5.10 indicates the variations in the prices

offered by these agencies in the year 2001-02. It is observed that the consumers offered maximum price in the case of Rice, Paddy and Maize while in the case of commercial crops like Cotton and Sunflower it was the Wholesale market that procured at maximum prices. The local traders and consumers purchased groundnut at similar prices.

Table 5.9: Price Received by Different size group Farmers in 2001-02: Raichur District

Farm Size Group	(in Rs/Quintal)						
	Rice	Paddy	Maize	Jowar	Cotton	Groundnut	Sunflower
I (<1 Ha.)	1,050	500	470	480	1,850	1,250	1,250
II (1-2 Ha.)	1,300	650	500	550	1,700	1,150	1,500
III (2-4 Ha.)	1,000	575	450	600	1,900	1,200	1,350
IV (4-6 Ha.)	1,400	600	550	590	1,800	1,010	1,200
V (>6 Ha.)	1,150	600	475	550	1,850	1,300	1,350

Table 5.10: Price given by Different Agency in 2001-02: Raichur District

Name	(Rs. Per Quintal)			
	Wholesale Market	Local Traders	Retailers	Consumers
Rice	1,400	1,450	1,600	1,600
Paddy	748	600	550	750
Maize	515	530	570	580
Jowar	645	600	470	500
Cotton (Bales)	1,664	1,500	1,400	-
Groundnut	1,260	1,300	1,200	1,300
Sunflower	1,456	1,100	1,200	-

Table 5.11: Price of Different Commodities in Various Years - Raichur District

Crop	(Rs. Per Quintal, Modal Rate)				
	1997-98	1998-99	1999-00	2000-01	2001-02
Rice	1,150	1,300	1,350	1,400	1,450
Paddy	520	600	569	515	748
Maize	430	420	612	515	-
Jowar	515	881	650	445	645
Cotton (Bales)	2,059	1,939	1,769	1,765	1,664
Groundnut	1,160	1,239	1,250	1,239	1,260
Sunflower	1,140	1,275	1,220	1,140	1,456

Table 5.12: Price in Different Months of sale in 2001-02: Raichur District

Crop	(Rs.Per Quintal, Modal Rate)											
	Nov 2001	Dec 2001	Jan 2002	Feb 2002	Mar 2002	April 2001	May 2001	June 2001	July 2001	Aug 2001	Sept 2001	Oct 2001
Rice	850	850	760	850	830	960	950	1,000	940	950	900	900
Paddy	627	720	786	792	693	590	612	675	601	766	681	695
Maize	515	530	-	-	-	-	-	-	-	-	-	-
Jowar	505	596	625	573	645	481	479	488	557	587	565	536
Cotton (Bales)	1,619	1,869	1,876	1,564	1,534	1,725	1,819	1,869	1,759	1,925	1,965	1,796
Groundnut	1,260	1,228	1,183	1,276	1,385	1,188	1,520	1,434	1,331	1,281	1,165	1,127
Sunflower	1,595	1,439	1,441	1,465	1,409	1,159	1,169	1,369	1,129	1,201	1,550	1,489

Note: Modal price for Rice – April-Oct 2001; Modal price for Paddy – Dec2001-Feb2002; Modal price for Jowar – Jan & Mar 2002; Modal price for Cotton – Aug-Sept 2001; Modal price for Groundnut – May & June 2001; Modal price for Sunflower – Sept-Nov 2001.

5.5 Transportation of Marketed Surplus

As mentioned earlier, a sizeable amount of marketable surplus is marketed in the village itself, but some portion reaches the market. Two major means of transport used by farmers to transport their produce of paddy to market yards are Lorry and Tractors. For the sample as a whole, the Lorries accounted for 88.3 per cent of the paddy transport and only 11.67 per cent was transported through tractor trolleys.

Table 5.13: Percentage Share of Paddy Transported by Different Modes of Transport in Raichur District

Farm Size Group	Mode of Transportation		
	Lorry	Tractor	Total
I (<1Ha.)	84.78	15.22	100.00
II (1-2 Ha.)	86.05	13.95	100.00
III (2-4 Ha.)	95.83	4.17	100.00
IV (4-6 Ha.)	100.00	0.00	100.00
V (>6 Ha.)	100.00	0.00	100.00
Weighted Average	88.33	11.67	100.00

It can be seen from the Table above that the use of Lorry for transportation of paddy increased with farm size. It can also be seen that farm sizes above 4 hectares transported almost their entire marketable produce through Lorries, whereas in smaller size farms around 89 per cent on an average was transported through Lorries. Thus, it is seen that the use of Lorries was predominant in all size groups. The transport of rest of the produce was done using tractor trolleys. Only small farmers used a tractor for transporting the produce to the market that was clearly visible with the decrease in the use of tractors with subsequent farm sizes (from 15.22 per cent in Size-I to 4.17 per cent in Size-III).

Table 5.14: Marketing Charges for Sale of Paddy to Private traders Borne by Farmers in Raichur District

(Rs. Per quintal of paddy)

Farm Size Group	Transport Charges	Loading & Unloading	Gunny bags	Total
I (<1Ha.)	0.52	0.11	0.64	1.27
II (1-2 Ha.)	0.58	0.12	0.79	1.43
III (2-4 Ha.)	0.41	0.05	0.46	0.92
IV (4-6 Ha.)	0.00	0.00	0.00	0.00
V (>6 Ha.)	0.00	0.00	0.00	0.00
Weighted Average	0.13	0.02	0.17	0.33

Marketing charges in Karnataka are fixed by the Agricultural Produce Market Committees for each of the commodities. The APMC Act provides only the upper limit and the Regulated Market Committees are given freedom to fix the marketing rates. The average expenses borne by the farmer in marketing per quintal of paddy is 33 paise, of which 13 paise is towards the transport charges, 2 paise for loading and unloading and 17 paise for the gunny bags. The farmers in the higher size groups reported none of these charges and the purchaser as a favour to the farmer usually met these. Only farmers in Size groups-I, II & III bore these marketing charges. The marketing charge in farm size-II was Rs.1.43, which was slightly higher than that for the other two groups (Rs.1.21 for size group-I and Rs.0.92 for size group-III).

Table 5.15: Mode of Transport and Marketing Charges for Sale of Jowar to Private Traders in Raichur District

Farm Size Group	Mode of Transport	Marketing Charges (Rs. Per Quintal of Jowar)			
	Tractor (No. of Qtls.)	Transport Charges	Loading & Unloading	Gunny bags	Total
I (<1Ha.)	0	0	0	0	0
II (1-2 Ha.)	0	0	0	0	0
III (2-4 Ha.)	1	3.33	0.83	6.25	10.42
IV (4-6Ha.)	1	17.33	4.27	32.00	53.60
V (>6 Ha.)	0	0.00	0.00	0.00	0.00
Weighted Average	2 (total)	4.36	1.08	8.10	13.54

Jowar being an inferior cereal in the hierarchy of the marketed crops, tractor trolleys were the only means used for transporting Jowar to the markets and the quantity transported through tractors was about 2 quintals per farm for the whole sample. This phenomenon was confined to farms with size 2-6 hectares. The average marketing charges borne by the farmers in the sample added up to Rs.13.54, the composition being Rs.4.36 for transport charges, Rs.1.08 for loading and unloading and Rs.8.10 for gunny bags. It is observed that the marketing charges borne by farmers in size class-IV were much higher than that in size class-III. In farm size-III the total charge was Rs.10.42 while in farm size-IV it was Rs.53.60, that is, five times of that in III. It is not surprising that Jowar had higher marketing charges compared to Paddy/rice. This was due to the very reason that usually the purchasers of jowar were largely the ultimate consumers, buying it in bulk. But, in the case of paddy, the purchasers were usually traders/ processors/ agents (not commission agents as defined in the APMC Act).

Table 5.16: Mode of Transport and Marketing Charges for Sale of Sunflower to Private Traders in Raichur District

Farm Size Group	Mode of Transport	4 Marketing Charges (Rs. Per Quintal of Sunflower)			
	Tractor (No. of Qtls.)	Transport Charges	Loading & Unloading	Gunny bags	Total
I (<1Ha.)	0	0	0	0	0
II (1-2 Ha.)	0	0	0	0	0
III (2-4 Ha.)	1	0.83	0.17	1.00	2.00
IV (4-6Ha.)	1	10.67	2.22	16.00	28.89
V (>6 Ha.)	1	2.71	0.67	4.69	8.06
Weighted Average	3 (total)	0.82	0.18	1.23	2.24

Most of the Sunflower produced goes to market yard for the purpose of sale. Always tractor trolleys are used to transport sunflower to market yard. The amount taken to the markets through tractors is 3 quintals, the three big farm sizes equally contributing to it. The average transport charges are 82 paise, 18 paise for landing and unloading. The cost of gunny bags is Rs.1.23 and thus the average cost of marketing for all farm sizes comes to Rs.2.24. Among the three bigger farm sizes farmers with 4-6 hectares (ie., in size group-IV) incurred a cost much higher than the farmers in other two size groups. The total cost in size class- IV is Rs.28.89 while it was only Rs.2 in Size Class-III and Rs.8 in size class-V.

5.6 Farmers' Responses about Marketing

We obtained the responses of the farmers about various constraints and the present status of marketing in the state. The responses included their difficulties in marketing, weighments, and market charges. We also obtained information about the channels through which they obtained the price and marketing information. The relationship of the farmers with the commission agents and other market functionaries formed part of this analysis.

Table 5.17 summarises the farmers' responses regarding difficulties faced by them in marketing their produce to different traders-private traders, village traders, local market and the wholesale market. It is important to note that the small farmers, in general, were very much prone to most of the difficulties compared to large farmers. Mostly the farmers preferred the sale at the village and, the distance of the market was a problem. Regarding the problems faced in selling their produce to private traders, it is noted that 76 out of 120 farmers stated that the price paid for their produce was lower. Among them, an overwhelming majority of 72 belonged to the size groups operating with less than 4 hectares of land. About 115 out of 120 farmers reported delayed payment for their produce marketed to private traders. Farmers in almost all the categories faced this problem alike. Seventy-two out of 120 farmers told that they were paid lower prices for the produce they sold to village traders. Again, a majority who faced this problem belonged to the groups with farm size lower than 4 hectares of land except for 2 in the higher size groups. Eleven reported of a difference in the weights. Except one in the larger size groups, all the farmers who faced this problem came from the first three size-groups having land holdings below 4 hectares. The farmers who were not interested to sell their

Table 5.17: Farmers' Responses on the Difficulties in Marketing Their Produce to Private & Village traders, Local Market and Wholesale Market in Raichur District

(No. of Farmers)

Particulars	Farm Size Groups					Total
	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	
1.No. of Sample Farmers	46	43	24	3	4	120
2.Difficulties Faced from Private traders						
a) Low Price	31	24	17	2	2	76
b) Payment Delayed	45	39	24	3	4	115
3.Difficulties Faced from Village Traders						
a) Low Price	31	27	12	-	2	72
b) Difference in Weighment	4	3	3	-	1	11
c) Not Interested	3	8	3	2	1	17
d) Delay in Payment	5	2	4	-	-	8
e) Low Price/Delay in Payment	-	1	1	1	-	3
f) Low Price & Difference in Weighment	-	-	1	-	-	1
g) No Village Trader	3	2	-	-	-	5
4.Difficulties Faced in Local Markets						
a) Not Interested	2	2	4	-	1	9
b) No Local Market	44	41	20	3	3	111
5.Difficulties in Wholesale Market						
a) Long Distance	19	15	5	2	1	42
b) High Transport Cost	14	19	13	1	2	49
c) Market Fee	1	-	-	-	-	1
d) Not Interested	1	2	2	-	-	5
e) Transport Cost & Market Fee	2	1	-	-	-	3
f) Transport Cost/ Loading/Unloading Charges	1	1	1	-	1	4
g) Delay in Payment	5	3	3	-	-	11
h) Low Price	1	1	-	-	-	2
i) No Proper Weighment	2	1	-	-	-	3

produce to village traders were only 17 in number. That indicates the predominance of sale within the village. These farmers were spread over all size groups. Eight farmers faced delay in the payment by village traders, and these were located among the smaller size groups. The number of farmers who were not interested to sell in local markets were 9 and the rest 111 farmers said there were no local (regulated) markets. As regards marketing in the wholesale market were concerned, 42 out of 120 farmers said that the

markets were at long distances. About 46 farmers belonging to smaller size groups stated that the transport costs were high. These may be those farmers who hired vehicles for transport of their produce. Only 1 farmer operating less than 1 hectare of land said that the market fee was high in the wholesale market. Three farmers reported high transport cost and market fees. On the whole, it was the small farmers, operating less than 4 hectares of land, and did not own the necessary infrastructure needed for marketing their produce, who faced most of the problems.

Farmers stating problems with the marketing of their produce were largely confined to the smaller groups operating less than 4 hectares of land (Table 5.18(a)). Three farmers complained of high rate of transport. Only nine farmers reported that transport was easily available and there was timely loading and unloading. The rest 111 expressed difficulties in availing transport and were dissatisfied with the loading and unloading facilities. Small farmers who had to resort to hiring basically related all these problems to the lack of ownership of resources. Regarding problems about the facilities in the market yards, only 7 farmers reported that there was enough space for exhibiting their produce and parking their carts. These farmers mostly belonged to the smaller size groups and

Table 5.18 (a): Farmers' Responses regarding Problems in Marketing, Market Yard, Weighment and Payment in Raichur District
(No. of Farmers)

Particulars	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	Total
1.No. of Sample Farmers	46	43	24	3	4	120
2.Problems with Marketing						
a)High Rate of Transport	2	1	0	0	0	3
b)Easy Availability of Transport	3	5	1	0	0	9
c)Timely Loading/Unloading	3	5	1	0	0	9
3.Problems with Market yard						
a)Enough Space	3	3	1	0	0	7
b)Enough Parking Place	3	3	1	0	0	7
c)Enough Staying Arrangements	0	0	0	0	0	0

Table 5.18 (b): Farmers' Responses regarding Problems in Weight and Payment in Raichur District

(No. of Farmers)

Particulars	Farm Size Groups					Total
	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	
1. Weighment Problems						
a) Timely Weighment	43	42	24	3	4	116
b) Arbitrary Reduction from Weight for Lower Quality	5	7	4	0	0	16
c) Reduction in Price due to Lower Quality	13	7	2	0	0	22
2. Payment Problems						
a) Immediately after Weighment	1	5	0	0	0	6
b) After one Week	9	7	7	1	1	25
c) After Two Weeks	19	19	9	2	2	51
d) After Three Weeks	2	3	3	0	0	8
e) After a Month	15	9	5	0	1	30

farmers in larger size groups were not satisfied with these arrangements. While no farmers conveyed that adequate staying arrangements have been made for over-night stay and sell their produce the next day. Hence, the facilities in market yards were the major constraints. On the issue of weights of the produce, out of the total sample of 120, 116 stated of a timely weighment of their produce (table 5.18(b)). While 16 farmers (all in lower size groups) indicated of an arbitrary reduction from weight for lower quality of their produce the others either did not follow the process or did not face such difficulty. Small farmers owing to lower quality of their produce mostly experienced reduction in weight and price. In the context of payment, only six farmers confirmed that payment was made immediately after weighing and these farmers were from the small size group. Twenty-five farmers grumbled about the payment after a week's time, 51 after two weeks, 8 after three weeks and 30 farmers received the payments after a month.

Table 5.19: Number of Farmers Replying about Collusion between Purchaser and Commission Agent in Raichur District

(No. of Farmers)

Collusion on	Farm Size Group					Total
	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	
1. Price Fixation	36	33	19	3	2	93
2. Grading/Quality of produce	40	37	20	3	0	100
3. Weighment	35	34	20	3	3	95
4. Payment	13	14	8	2	0	37
5. Bidding	9	7	5	2	0	23

Farmers in all size groups were very well aware of the collusion between their Commission agents and the purchaser, which could greatly harm their interests. From the sample group 93 out of 120 farmers thought that commission agents colluded in price fixation. Most of the sample farmers (100) thought that collusion took place in grading of their produce for quality variations. 95 farmers doubted complicity in weightment and 37 thought of the involvement in the payment made to them. 23 of the farmers were aware of collusion on bidding of their produce. All these stood in the way of the farmer receiving a justified price for his produce. Therefore, the farmers largely preferred to sell at the village itself.

The price expectations were formed on the basis of the information received by the farmers. These expectations also affected the area allocation, adoption of technology and the intensity of input use. It is seen that a farmer received information about prices from more than one source. Commission agents were the first source of information to 118 farmers. Apart from that they also received information from other sources, out of them, 99 farmers received information from their personal visit to the market place, 78 from the neighbour and 9 from Radio/ T.V./Newspaper. This information was then transmitted into decision-making criteria. The allocation of area, adoption of technology and input use were

Table 5.20: Number of Farmers Responding on the Channels of Price Signals and its Effect on Cropping Pattern, Production and Marketing in Raichur District
(No. of Farmers)

Particulars	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	Total
1.No. of Sample Farmers	46	43	24	3	4	120
2.Channels of Price Signals						
a)Message Given by C.A.	45	43	23	3	4	118
b)Personal Visit	32	37	23	3	4	99
c)Radio/TV/Newspaper	6	1	1	1	0	9
d)Information from Neighbour	31	29	12	3	3	78
e)Local Trader	22	23	11	3	3	62
3.Effect of Price Signals						
a)Change in Area	11	20	11	3	3	48
b)Adoption of Improved Technology	23	20	17	2	2	64
c)Intensive Input Use	34	35	22	3	2	96
d)Sale of Produce	17	11	8	1	3	40

taken based on this. Regarding the effect of price signals on the decision-making, only 48 of the farmers confirmed the impact on their cropping pattern, whereas 96 farmers corroborated that price signals influenced their use of intensive inputs. Sixty-four farmers substantiated the impact of price signals on the adoption of new technology and 40 attributed changes in marketing of their produce to these expectations.

Table 5.21: Channels of Receiving Information about Technical Change in Raichur District

(No. of Farmers)

Channels	Farm Size Groups					Total
	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	
1.Block Authorities	32	27	15	1	3	78
2.Village President	0	1	0	0	0	1
3.Neighbour	28	31	15	3	1	78
4.Input Marketing Agencies	40	39	23	3	4	109

Farmers had good access to the information on technical change as it was seen in the sample that a farmer received information from multiple sources. The most important source of information about technical change was provided by the Input Marketing agencies. About 109 of the sample farmers received information from this source. Neighbours and Block Development Authorities informed seventy-eight farmers about the components of technical changes.

Table 5.22: Farmers' Knowledge of Future Markets in Raichur District

(No. of farmers)

Particulars	Farm Size Groups					Total
	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	
1.No. of Sample Farmers	46	43	24	3	4	120
2.Farmers Having Knowledge of Future Markets						
Yes	6	3	9	0	2	20
No	40	40	15	3	2	100
3.Is it Helpful						
Not Helpful	5	3	8	0	1	17
No Such Practice	1	0	1	0	1	3

Future markets have not emerged in the sample region. A majority of the farmers in the sample region did not have any knowledge of the future market. Only 20 farmers stated that they knew the future markets. Among the farmers who had knowledge, 17 farmers said that it was not helpful to them in any way and 3 stated that they had no practice of using this knowledge in their marketing decisions.

Table 5.23: Farmers' Reply on Taking Recourse to Distress Sale in Raichur district

(No. of Farmers)

	Farm Size Groups					Total
	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	
1.No. of Sample Farmers	46	43	24	3	4	120
2.Farmers Taking Recourse to Distress Sale						
Yes	4	2	1	0	0	7
No	42	41	23	3	4	113
3.Reasons for Taking Recourse to Distress Sale						
a) Financial Problem	3	2	1	0	0	6
b) Low Quality	1	0	0	0	0	1

Any climatically constrained region has distress sale as a mechanism operating to alleviate the cash crunch. Raichur is not an exception. Out of the sample farmers seven farmers replied in affirmative, on taking recourse to distress sale and these farmers had been mostly in the smaller three size groups. The sole reason for distress sale of their produce had been the urgent need for money except for one case who resorted to sale due to low quality.

Table 5.24: Farmers' Opinion on Institutional Credit and Pledge Financing in Raichur District

(No. of farmers)

Particulars	Farm Size Groups					Total
	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	
1.No. of Sample Farmers	46	43	24	3	4	120
2.Has the Sale been Delayed with the Availability of Institutional Credit						
Yes	24	26	13	2	0	65
No	22	17	11	1	4	55
3.If yes, by How Many Months						
a)Two Months	2	0	1	0	0	3
b)Three Months	9	6	2	1	0	18
c)Four Months	6	5	2	0	0	13
d)Above Four Months	5	6	6	1	0	18
4.Desire to Avail Pledge Financing						
Yes	19	18	9	2	0	48
No	27	25	15	1	4	72
5.If yes, What Would be the Reasonable Rate of Interest						
a)2%	9	9	5	2	0	25
b)3%	10	9	4	0	0	23

Institutional credit is one of the major determinants of the marketing behaviour of the farmers. We have noted that 65 out of 120 farmers delaying the sales of their produce due to the non-availability of institutional credit (Table 5.24). These farmers were spread across the size groups I to IV. Of these 65, 35 farmers replied that the delay had been between 2-4 months, while 18 farmers replied a delay of above four months. On the question of availing the facility of pledge financing, 48 of the sample farmers favoured the suggestion and 72 rejected it. Among farmers willing to avail this facility, 37 were in farm sizes less than 2 hectares. Hence, it is the relatively smaller size group of farmers who may opt to go in for pledge financing.

Regarding influence of price increase on area allocation and input use, 61 farmers in all size classes replied an increase in area allocation (See Tables 5.25 and 5.26) and 76 farmers stated an increase in input use. The share of farmers stating an increase in area allocation and input use had been higher in higher farm size groups. In the case of area allocation the per cent of farmers stating an increase in area rose from 44.65 per cent in the smallest size class to 62.50 per cent in the Size class-III and 75 per cent in size class-V. Among the large farm category, all the farmers said that the price increase led to an increase in area allocation. The per cent of farmers stating an increase in input use also increased with farm size from 58.70 per cent in size group-I to 100 per cent in size groups-IV and V. Concerning the influence of technical changes on area allocation and input use, 59 farmers felt the effect of an increase in area allocation and 73 farmers of an increase in input use. The per cent of farmers in each size group stating an increase in area allocation fluctuated widely with the size groups. It ranged between 41.9 per cent and 100 per cent among the size groups, while the per cent of farmers stating an increase in input use showed a direct increase from 54.35 per cent in size group-I to 100 per cent in size groups IV and V.

5.6 Conclusions

Raichur is a typical drought - prone district of Deccan Plateau falling in Karnataka. The climatic constraints and frequent visitation of droughts, made the farmers risk averse. In the recent past and specifically in the decades of eighties and nineties, the cropping pattern of the district was leaning towards commercialisation. But, here, the commercialisation is of a different kind with a clear preference towards cash crops. There is a clear emergence of marketable surplus in the food-grains sector but largely marketing

takes place in the village. The Commission Agent here usually visits the village to buy the commodities, and therefore, only some portion of the produce reaches the regulated market. Only one channel of marketing functions for the food-grain crops whereas, there are a few channels for commercial crops like oil-seeds. Added to this, the marketing infrastructure is not well developed which also acts as a strong repellent for the surplus to reach the market. The farmers indicated the significant inadequacies in the marketing structure. The questions of 'J' form (no such forms are given under APMC Act of Karnataka) or the marketing charges do not arise at all as the market participation is quite inadequate. There is no procurement under MSP both due to the administrative inadequacies and the infrastructure. Even though the price expectations influence the cropping pattern, adoption of technology and input use, this largely happens in the cash crop sector. As it is, the farmers do not cultivate more than one variety of rice, and that is the one used locally for consumption. Therefore, the differential markets have not developed for the varieties of crops. Rather the markets are developing initially in a generalised manner and may further mature for any specific varieties that will be adopted by the farmers. This has happened in the case of arecanut, sericulture, horticultural crops and some of the oil-seeds. In conclusion, we must mention here that the markets in Raichur district are still in the phase of development and will require some time to come up to the level of markets in the states like Punjab, Haryana, Andhra Pradesh and Tamil Nadu

Table 5.25: Farmers' Responses about the Influence of Price Increase on Area Allocation and Input Use in Raichur District

Farm Size Group	Price increase								% of Farmers stating an Increase in Area Allocation	% of Farmers stating an Increase in Input Use
	Area Allocation				Input Use					
	Increase	% to Total	Remaining Same	% to Total	Increase	% to Total	Remaining Same	% to Total		
I (<1Ha.)	21	34.43	25	42.37	27	35.53	19	43.18	45.65	58.70
II (1-2 Ha.)	19	31.15	24	40.68	24	31.58	19	43.18	44.19	55.81
III (2-4 Ha.)	15	24.59	9	15.25	18	23.68	6	13.64	62.50	75.00
IV (4-6 Ha.)	3	4.92	0	0.00	3	3.95	0	0.00	100.00	100.00
V (>6 Ha.)	3	4.92	1	1.69	4	5.26	0	0.00	75.00	100.00
Total	61	100.0	59	100.0	76	100.0	44	100.0	50.83	63.33

Table 5.26: Farmers' Responses about the Influence of Technical Change on Area Allocation and Input Use in Raichur District

Farm Size Group	Technical Change								% of Farmers stating an Increase in Area Allocation	% of Farmers stating an Increase in Input Use
	Area Allocation				Input Use					
	Increase	% to Total	Remaining Same	% to Total	Increase	% to Total	Remaining Same	% to Total		
I (<1Ha.)	21	35.59	25	40.98	25	34.25	21	44.68	45.65	54.35
II (1-2 Ha.)	18	30.51	25	40.98	24	32.88	19	40.43	41.86	55.81
III (2-4 Ha.)	14	23.73	10	16.39	17	23.29	7	14.89	58.33	70.83
IV (4-6 Ha.)	3	5.08	0	0.00	3	4.11	0	0.00	100.00	100.00
V (>6 Ha.)	3	5.08	1	1.64	4	5.48	0	0.00	75.00	100.00
Total	59	100.0	61	100.0	73	100.00	47	100.0	49.17	60.83

CHAPTER VI

MARKETING IN DAVANGERE DISTRICT

6.1 Introduction

The district of Davangere was a part of Chitradurga district till recently. It was carved out of Chitradurga but mostly retained the basic economic characteristics of the mother district. Davangere is called Manchester of Karnataka, with its large textile-manufacturing sector. Over the years the textile sector has vanished to give way to other commercial activities. A good number of commercial crops are grown in the district beginning with food-grains like paddy, wheat, and jowar to oil-seeds, sugarcane and sericulture. Largely, the emphasis is on cash crops like sugarcane, sericulture and coconut. Marketing activities have developed accordingly favouring markets for these crops. The constraints on the agricultural economy are quite strong in terms of unfavourable climate and underdeveloped infrastructure. The marketing activity is still concentrated on informal channels and organised marketing is not preferred.

This chapter is based on the micro level data of the households and the other marketing functionaries. As the marketing infrastructure is not well developed in the state, the data from the Commission agents were not of any use. The connotation of the 'Commission Agent' itself is different in Karnataka. The person representing the trader 'Adtya' comes to the village and purchases the grain, which has to be delivered at a specified place. This person receives his wages from the trader and also some money from the farmer. The Commission agents operate at a very low key and mostly procure from the individual farmers at the farm itself. We have analysed here the production, quantity marketed and seasonality of quantity marketed. Transportation of the produce, expenditure on transportation and the marketing process also form part of our analysis. There was no direct sale to the millers and therefore, the intricacies of this sale could not be investigated. The rice mills are very few and most of the millers from different districts procure from the market directly. Similarly, the presence of commission agents is most illusive and no information was available on this aspect. Farmers' opinion about the marketing structure and bottlenecks forms an important part of this chapter.

6.2 Production and Marketing of Crops in Davangere

Paddy is also an important crop in Davangere district. Largely 'Sona Masoori' or 'Jaya' variety of paddy is grown and the preference is for those used largely for home consumption. The data on marketed surplus and utilisation of paddy output per farm for different purposes by farm size groups are presented in Table 6.1. A perusal of the table indicates that leaving a minimum amount of 22 per cent, on an average, for consumption purposes the rest of the paddy was completely marketed. The marketed surplus as well as the quantity retained for consumption shows an increasing trend with increase in the farm size with an exception of the farmers holding land below 1 hectare. These sample farmers did not cultivate paddy and hence there was no production. The quantity consumed increased from 9.11 quintals in Size-group-II to 20 quintals in Size-group-V, whereas the increase in quantity marketed showed a wider range, starting from 27 quintals in Size-group-II to 40 quintals in Size-group-IV and 260 quintals in Size-group-V. The percentage of quantity marketed to production also shows an increasing trend with the increase in farm sizes, but in the size-group-IV where a decrease was noticed. It increased from 72.22 per cent in Size group-II to 90 per cent in Size group-III and went down to 66.67 per cent in Size-IV. In Size-V the percentage was again as high as 92.86 percent. Overall the major proportion of the quantity produced of paddy was marketed.

Table 6.1: Production and Quantity Marketed Per Farm of Paddy in Davangere District
(in Quintals)

Farm Size Group	Production	Home Consumption	Quantity Marketed	Percentage of Quantity Marketed to Production
I (<1Ha.)	0.00	0.00	0.00	0.00
II (1-2 Ha.)	36.11	9.11	27	72.22
III (2-4 Ha.)	40	4	36	90.00
IV (4-6 Ha.)	60	20	40	66.67
V (>6 Ha.)	280	20	260	92.86
Weighted Average	54.0	1.20	43.20	77.78

Table 6.2: Production and Quantity Marketed Per Farm of Maize in Davangere District
(In quintals)

Farm Size Group	Production	Home Consumption	Animal Feed	Quantity Marketed	Percentage of Quantity Marketed to Production
I (<1Ha.)	17.31	0	1.08	16.23	62.96
II (1-2 Ha.)	24.38	0	2.99	21.39	87.50
III (2-4 Ha.)	51.03	0	4.18	46.85	92.16
IV (4-6 Ha.)	68	0	7.5	60.5	89.17
V (>6 Ha.)	60	0	0.00	60	100.00
Weighted Average	25.80	0	1.80	23.98	92.31

The district of Davangere is known for its production and marketing of maize. Table 6.2 shows the production of Maize and its utilisation patterns. A direct indication from the table is that no part of the produce of Maize was retained for home consumption or seeds by any of the size groups. An average amount of 1.80 quintals was used as feed, which was 6.97 per cent of the total produce. The quantity used as feed increased from 1.08 quintals in Size-group I to 7.5 quintals in Size-group IV. In Size-group V, the entire quantity produced was marketed. The quantities marketed also show a consistent increase with farm sizes. It was 16.23 quintals in Size-group I and increased to 21.39 quintals in Size-group II, 46.85 quintals in Size-group III, 60.5 quintals in Size-group IV and 60 quintals in Size-group V. But, the marketed quantity when viewed in relative terms, that is, as per cent of the total quantity produced a decline was observed in Size-group IV. The per cent increased from 62.96 per cent in Size-group I to 92.16 percent in Size-group III; whereas in Size-group IV it declines to 89.71 per cent and in Size-group V the share increased to 100 per cent of the produce being marketed. On an average, the share of marketed surplus was 92.31 of the total quantity produced for the sample as a whole.

The production, utilisation patterns and the per cent of quantity marketed of Jowar in Davangere district is shown in Table 6.3. The marketed surpluses here arise after making provisions for both home consumption and animal feed. It is very clearly seen from the table that a major portion of the produce of Jowar was used for home consumption, while the quantity marketed was only a small portion.

Table 6.3: Production and Quantity Marketed Per Farm of Jowar in Davangere District

Farm Size Group	Production	Home Consumption	Animal Feed	Quantity Marketed	(In Quintals)
					Percentage of Quantity Marketed to Production
I (<1Ha.)	4.05	4.05	0	0	0.00
II (1-2 Ha.)	6.9	5.9	0	1	14.29
III (2-4 Ha.)	9.03	6.02	0.98	2.03	22.22
IV (4-6 Ha.)	10	9	1	0	0.00
V (>6 Ha.)	20	5	0	15	75.00
Weighted Average	6	4.80	0	1.20	16.67

About 80 per cent of the produce of all the farmers in the sample was utilised for home consumption. It increased steadily with farm sizes and ranged from 4.05 quintals in Size-group I to 10 quintals in Size-group V. In Size-group I, the entire produce was retained for home consumption. Only farmers in Size-group III and IV retained their produce to be

used as animal feed and the quantities 0.98 quintal and 1 quintal respectively. The quantity marketed is only 20 per cent of the produce. While farmers in Size-group V market their entire produce, farmers in Sizes- I and IV did not find any surplus for marketing. Leaving Sizes-I and IV the marketed quantity increased with farm size. It is 1 quintal in Size-group II, 2.03 quintals in Size-group III and 15 quintals in Size-group V.

Table 6.4: Production and Quantity Marketed Per Farm of Ragi in Davangere District
(in Quintals)

Farm Size Group	Production	Home Consumption	Quantity Marketed	Percentage of Quantity Marketed to Production
I (<1Ha.)	2.97	2.97	0	0.00
II (1-2 Ha.)	3.91	2.99	0.92	25.00
III (2-4 Ha.)	3.99	3.99	0	0.00
IV (4-6 Ha.)	0	0	0	0.00
V (>6 Ha.)	6	2	4	66.67
Weighted Average	4.20	3.00	1.20	25.00

Ragi is also grown largely for home consumption. The production and utilisation of Ragi per farm in Davangere district is shown in Table 6.4. The produce was mainly consumed and the little surplus marketed. In Size groups-I and III the entire produce was retained for consumption. Except for Size-group IV where no farmers produced Ragi, the quantity consumed shows an increasing trend with the size of farm. The surplus for marketing arose only in farm size groups-II and V.

Table 6.5: Production and Quantity Marketed Per Farm of Sugarcane in Davangere District

(in Quintals)

Farm Size Group	Production	Quantity Marketed	Percentage of Quantity Marketed to Production
I (<1Ha.)	39.96	3.96	100.00
II (1-2 Ha.)	95.91	95.91	100.00
III (2-4 Ha.)	140	140	100.00
IV (4-6 Ha.)	240	240	100.00
V (>6 Ha.)	0.00	0.00	0.00
Weighted Average	112.80	112.80	100.00

Sugarcane has been strongly emerging as a cash crop in Davangere and taken up for cultivation by farmers of all sizes of holdings. It is replacing paddy and maize at a very fast rate. Table 6.5 shows the quantity marketed of sugarcane. As sugarcane is a cash crop the marketed surplus is the same as the quantity produced. The quantity marketed increased with farm size except for Size-group V where the farmers did not engage in the

production of sugarcane. In Size-group I the quantity produced and marketed was 39.96 quintals, which increased to 95.91 quintals in Size-group II, 140 quintals in Size-group III and 240 quintals in Size-group IV.

6.3 Seasonality in Marketing

Davangere is a business centre and one can expect prudent marketing strategies in the district. But probably crop husbandry is an exception and the farmers face resource, cash and infrastructure as major constraints. That squeezes their marketing activities around the harvest season. Lack of storage and development of market yards also act as strong constraints. We are analyzing here the seasonality in marketing of crops in Davangere district.

Table 6.6: Proportion of Quantity Marketed Per Farm of Paddy in Different Months by Size Groups in Davangere District

				(in Quintals)
Farm Size Group	November	December	January	Total
I (<1Ha.)	0	0	0	0
(per cent)	0.00	0.00	0.00	0.00
II (1-2 Ha.)	8	17	2	27
(per cent)	30.00	63.00	7.00	100.00
III (2-4 Ha.)	26	10	0	36
(per cent)	72.41	27.59	0.00	100.00
IV (4-6 Ha.)	15	25	0	40
(per cent)	37.50	62.50	0.00	100.00
V (>6 Ha.)	0	260	0	260
(per cent)	0.00	100.00	0.00	100.00
Weighted Average	12.00	30.00	1.20	43.20
(per cent)	27.91	69.77	2.32	100.00

The quantity of paddy marketed in different months in Davangere district is shown in Table 6.6. The concentration of marketing was highest in the month of December with 69.77 per cent of the total marketed quantity being marketed in this month. The share of various farm sizes in the produce marketed in this month indicated a wide range as farmers in Size-group II marketed 63 per cent share while farmers in Size-group III contributed only 27.59 per cent. In Size-group IV, 62.50 per cent of the output was marketed in December and in Size-group V, the entire produce was marketed in this month. The second important month for paddy marketing in Davangere was November. About 28 per cent of the total marketing of paddy was undertaken in this month. Only farmers in size groups-II, III and IV marketed their produce in this month. In the month of January, the marketing activity in paddy was very low compared to other two months.

In this month 2.32 per cent of paddy was marketed and it was seen that only farmers in smaller size groups opted for marketing in this month.

Table 6.7: Proportion of Quantity Marketed Per Farm of Maize in Different Months by Size Groups in Davangere District
(in Quintals)

Farm Size Group	November	December	January	February	Total
I (<1Ha.)	0.3	2.19	7.96	5.78	16.23
(Percent)	1.85	13.49	49.04	35.62	100
II (1-2 Ha.)	0	0.65	9.13	11.61	21.39
(Percent)	0	3.04	42.68	54.28	100
III (2-4 Ha.)	0	7.14	19.57	20.14	46.85
(Percent)	0	15.24	41.77	42.99	100
IV (4-6 Ha.)	0	0	15.5	45	60.5
(Percent)	0	0	25.62	74.38	100
V (>6 Ha.)	0	60	0	0	60
(Percent)	0	100	0	0	100
Weighted Average	0.13	3.07	9.88	10.9	23.98
(Percent)	0.54	12.8	41.21	45.45	100

Maize requires some time after the harvest to get ready for marketing. It is dried for a few weeks and then sold. Therefore, maize marketing does not coincide with the harvesting season. Table 6.7 shows the percentage share of different months in the total quantity marketed of Maize. The important months for marketing of Maize in Davangere district are January and February. The pressure of maize marketing was highest in the month of February when farmers in all categories, except Size-group V, actively participated in selling their produce. The farmers in Size-group I marketed 35.62 per cent of their produce in this month, farmers in Size-group II sold 54.28 per cent of their produce. About 43 per cent of the produce of the farmers in Size-group III and 74 per cent in Size-group IV were sold in this month. In the month of January, the marketing activity was relatively at low key. About 41 per cent of the average marketed quantity of all farms was marketed in this month. The farmers in lower size groups sold their produce even immediately after harvesting which is very clearly evident from the table. In December, only 12.8 per cent of the total marketing was done. In this month, the farmers in Size-group V marketed their entire produce along with smaller quantities marketed by the small farmers.

Table 6.8: Proportion of Quantity Marketed Per Farm of Jowar in Different Months by Size Groups in Davangere District

(in Quintals)			
Farm Size Group	November	December	Total
I (<1Ha.)	0	0	0
(Per cent)	0	0	0
II (1-2 Ha.)	0	1	1
(Per cent)	0	100	100
III (2-4 Ha.)	2.03	0	2.03
(Per cent)	100	0	100
IV (4-6 Ha.)	0	0	0
(Per cent)	0	0	0
V (>6 Ha.)	15	0	15
(Per cent)	100	0	100
Total	17.03	1	18.03
(Per cent)	94.45	5.54	100

November and December are the two important months for Jowar marketing. The share of quantity marketed of Jowar in these two months is shown in Table 6.8. In November the quantity marketed of jowar was 94.45 per cent of the total. In this month it was the big farmers in Sizes-III and V who undertook marketing of their produce. While in the month of December, only farmers in Size-group II, market their produce and their share in the total quantity marketed in the sample as a whole was 5.54 per cent.

The marketing of Ragi in Davangere district sample was confined only to the farmers from size groups-II and V and November and December were the two important months for its marketing. The percentage share of these two months in the total quantity marketed of Ragi is seen in Table 6.9. The small farmers marketed their produce in the month of November and the per cent share of quantity marketed in this month was around 19 per cent. In December, the farmers in Size-group V marketed their produce and it amounted to 81 per cent of the total marketed quantity.

Table 6.9: Proportion of Quantity Marketed Per Farm of Ragi in Different Months by Size Groups in Davangere District

(in Quintals)			
Farm Size Group	November	December	Total
I (<1Ha.)	0	0	0
(Per cent)	0	0	0
II (1-2 Ha.)	0.92	0	0.92
(Per cent)	100	0	100
III (2-4 Ha.)	0	0	0
(Per cent)	0	0	0
IV (4-6 Ha.)	0	0	0
(Per cent)	0	0	0
V (>6 Ha.)	0	4	4
(Percent)	0	100	100
Total	0.92	4	4.92
(Percent)	19.08	81.3	100

6.4 Market Arrivals and Prices Received in Davangere District

Davangere District has the highest quantity of Maize marketed in regulated markets among all the districts in the State. Rice, Paddy and Groundnut are some of the other important crops that are marketed in large quantities in these markets. Table 6.10 shows the market arrivals of different agricultural commodities in the district. The quantity marketed of Rice and Paddy has been increasing steadily from 1999 to 2002, whereas, in the case of Maize it stagnated in 2001-02 after an increase in the previous year. The market arrival of Jowar continuously declined from a marketed quantity of 81,624 quintals in 1999-00 to 59,615 quintals in 2001-02. Market arrivals of cash crops like Groundnut and Sunflower decreased and remained stagnant.

Table 6.10: Market Arrivals of Different Crops in Davangere District
(In Quintals)

Crop	1999-00	2000-01	2001-02
Rice (Processed)	255,611	335,697	452,029
Paddy (Paddy)	11,78,588	12,44,953	13,72,374
Maize	10,59,955	14,74,371	10,25,692
Jowar	81,624	69,495	59,615
Cotton (Bales)	22,388	8,183	23,218
Groundnut	208,521	1,11,626	1,05,290
Sunflower	5,455	9,390	4,300

The prices received by farmers in different categories for their marketed surplus showed slight variations (Table 6.11). Big farmers received higher prices only for a few commodities like Rice, Cotton and Groundnut. For other commodities on the whole, the farmers in all categories received more or less the same price. Hence, the degree of exploitation of small farmers was not intense in Regulated markets.

In selling their produce to different agencies, the farmers received maximum price in the wholesale market for most of the commodities. Still, the consumers who purchased directly from the producers paid higher prices for Rice and Groundnut than that received in the wholesale market. A perusal of Table 6.12 also shows that the Local traders pay higher prices per quintal for the quantities of Maize and Jowar sold to them.

**Table 6.11: Price Received by Different size groups Farmers in 2001-02:
Davangere District**

(in Rs/Quintal)

Farm Size Group	Rice	Paddy	Maize	Jowar	Cotton	Ground nut	Sunflower
I (<1 Ha.)	1,200	650	450	500	1,800	900	1,100
II (1-2 Ha.)	1,100	500	500	550	1,150	1,200	1,150
III (2-4 Ha.)	1,400	600	500	400	1,850	1,100	1,200
IV (4-6 Ha.)	1,500	650	400	500	2,200	990	1,100
V (>6 Ha.)	1,300	600	550	450	1,800	1,300	1,300

Table 6.12: Price given by Different Agency in 2001-02: Davangere District

(Rs. Per Quintal)

Crop	Wholesale Market	Local Traders	Retailers	Consumers
Rice	1300	1200	1100	1700
Paddy	625	575	600	575
Maize	450	500	400	460
Jowar	390	450	400	390
Cotton (Bale)	1529	1300	1200	-
Groundnut	1109	1100	950	1200
Sunflower	1369	1200	1100	-

Table 6.13: Price of Different Crops in Various Years - Davangere District

(Rs. Per Quintal Modal Rate)

Crop	1997-98	1998-99	1999-2000	2000-01	2001-02
Rice	1,100	1,205	1,151	1,063	1,300
Paddy	600	690	672	571	625
Maize	480	422	472	365	450
Jowar	500	470	565	408	390
Cotton (Bales)	2,400	1,952	2,105	2,205	1,529
Groundnut	1,343	1,210	1,090	1,050	1,109
Sunflower	1,287	1,952	1,140	1,058	1,369

Table 6.14: Modal Price in Different Months of sale in Davangere District – 2001 - 02

(Rs. Per Quintal, Modal Rate)

Crop	Nov 2001	Dec 2001	Jan 2002	Feb 2002	Mar 2002	April 2001	May 2001	June 2001	July 2001	Aug 2001	Sept 2001	Oct 2001
Rice	1,400	1,400	1,400	1,400	1,350	1,000	1,150	1,250	1,300	1,450	1,450	1,400
Paddy	625	625	680	765	765	520	615	615	610	745	750	765
Maize	415	450	455	480	520	340	361	440	415	475	422	405
Jowar	400	410	415	420	425	290	315	325	370	390	365	375
Cotton (Bales)	1,741	1,659	1,529	1,365	1,109	1,551	1,716	1,952	2,389	2,089	2,069	1,890
Groundnut	1,129	1,198	1,255	1,286	965	795	1,109	1,119	1,225	1,208	851	1,029
Sunflower	1,490	1,212	1,390	1,421	1,390	1,080	1,301	1,421	1,262	1,241	1,441	1,369

Note: Modal price for Rice – August-December 2001; Modal Price for Paddy – Aug-Sept 2001 & Feb-Mar 2002; Modal Price for Maize – Feb-Mar 2002; Modal Price for Jowar – Nov2001 to Jan 2002; Modal Price for Cotton – July-Sept 2001; Modal Price for Groundnut – July-Aug 2001 & Jan-Feb 2002; Modal Price for Sunflower – Sept – Nov 2001

6.5 Transportation of Marketed Surplus

A sizeable amount of marketable surplus is marketed in the village itself, but some portion reaches the market. The farmers, to transport their produce of paddy to the market yards use two major means of transport. These are Lorry and Tractor trolleys. But unlike Raichur, tractor trolleys are the major mode of transport. For the sample as a whole, the Lorries accounted for 29.4 per cent of the paddy transport and the bulk of the produce 70.59 per cent was transported through tractor trolleys.

Table 6.15: Proportion Share of Paddy Transported by Different Modes of Transport in Davangere District

(Per cent)

Farm Size Group	Mode of Transportation		
	Lorry	Tractor	Total
I (<1Ha.)	0.00	0.00	0.00
II (1-2 Ha.)	20.00	80.00	100.00
III (2-4 Ha.)	50.00	50.00	100.00
IV (4-6 Ha.)	50.00	50.00	100.00
V (>6 Ha.)	0.00	100.00	100.00
Average	29.41	70.59	100.00

The sample farmers in Davangere district used two means of transport to transport their produce of paddy to the market yards. These were lorry and tractor. The percentage

share of these two modes of transport in transporting paddy is seen in Table 6.15. More than 70 percent of the paddy was transported by tractors and around 29 per cent through Lorries. It is necessary to caution here that all this produce was not sent to the market but represented transportation out of the village. This wide variation in the percentage was because it was observed that the farmers in higher size groups use tractors on a large scale for transportation. In Size-group V, the entire produce was transported through tractors. In Size-group III and IV, half of the marketed quantity was transported through tractors whereas, in Size-group II, 80 per cent were transported using tractors. Hence, tractors remained the major means for transporting paddy to the markets in Davangere.

The Karnataka Agricultural Produce Marketing Committee fixes different rates for different commodities, which enter the market, based on the rates inscribed in the Karnataka Agricultural Produce Marketing Act. The Act states, "The market committee shall levy and collect market fee from every buyer in respect of agricultural produce brought by such buyer in the market area, at such rate as may be specified in the bye-laws (it shall not be more than two rupees per one hundred rupees of the value of such produce bought except in case of livestock where the market fee shall not be more than five rupees per head of cattle other than sheep or goat, and in the case of sheep or goat, such fee shall not be more than one rupee per head) in such a manner and at such times as may be specified in the bye-laws."

Table 6.16: Marketing Charges for Sale of Paddy Borne by Farmers in Davangere District

(Rs. Per Quintal of Paddy)

Farm Size Group	Transport Charges	Loading & Unloading	Gunny bags	Total
I (<1Ha.)	0	0	0	0
II (1-2 Ha.)	2.04	0.59	2.63	5.26
III (2-4 Ha.)	1.80	0.83	4.88	7.51
IV (4-6 Ha.)	4.00	1.00	12.50	17.50
V (>6 Ha.)	20.00	3.90	0	23.90
Average	3.66	0.94	3.61	8.21

The transportation and marketing expenses are borne by the farmers in marketing paddy are presented in Table 6.16. The average total expense per quintal of paddy was Rs.8.21 for the whole sample. Of this, Rs. 3.66 was towards transport charges, Rs.94 paise loading and unloading charges and Rs. 3.61 for the cost of gunny bags. A perusal of the table indicates a narrow range followed in all the charges with farm sizes, making an exception of Size-group V where all these charges were the lowest.

Similarly, lorries and tractors are used to transport Maize. From Table 6.17 it is seen that tractors were the main source of transport as 73.33 per cent of the total quantity was transported using them. This high percentage share was due to the higher usage by farmers in bigger size groups apart from a higher usage by the small farmers.

Table 6.17: Proportion Share of Maize Transported by Different Modes of Transport in Davangere District
(Per cent)

Farm Size Group	Mode of Transportation		
	Lorry	Tractor	Total
I (<1Ha.)	22.22	77.78	100.00
II (1-2 Ha.)	21.74	78.26	100.00
III (2-4 Ha.)	57.14	42.86	100.00
IV (4-6 Ha.)	50.00	50.00	100.00
V (>6 Ha.)	0.00	100.00	100.00
Average	26.67	73.33	100.00

Table 6.18: Marketing Charges for Sale of Maize Borne by Farmers in Davangere District

(Rs. Per Quintal of Maize)

Farm Size Group	Transport Charges	Loading & Unloading	Gunny Bags	Total
I (<1Ha.)	1.73	0.44	2.10	4.27
II (1-2 Ha.)	2.26	0.61	3.62	6.49
III (2-4 Ha.)	5.53	1.71	14.03	21.27
IV (4-6 Ha.)	7.20	2.70	14	23.90
V (>6 Ha.)	4.80	1.80	10	16.60
Average	2.40	0.68	3.99	7.07

The average transport charges and market expenses borne by farmers in transporting per quintal of maize was Rs.7.07. Table 6.18 shows the various charges that includes Rs. 2.40 for transportation, Rs. 0.68 for loading and unloading and Rs. 3.99 for the cost of gunny bags. Except for the transport charges, a little variation can be observed in the costs of loading and unloading and for gunny bags across the farm sizes. The transport charges indicate an increasing trend with the increase in farm sizes that means the transport costs were higher in the higher farm sizes with Size group-V an exception.

Table 6.19: Mode of Transport and Marketing Charges for Sale of Jowar in Davangere District

Farm Size Group	Mode of Transport	Marketing Charges (Rs. Per Quintal)			
	Tractor (No. of Qtls.)	Transport Charges	Loading & Unloading	Gunny bags	Total
I (<1Ha.)	0	0	0	0	0
II (1-2 Ha.)	1	0.80	0.24	2.25	3.29
III (2-4 Ha.)	1	1.00	0.20	1.20	2.40
IV (4-6 Ha.)	0	0	0	0	0
V (>6 Ha.)	1	1.50	0.30	1.50	3.30
Average	3(total)	1.10	0.25	1.65	3

Tractors are the only means of transport used to transport Jowar in Davangere. The transport and marketing charges of Jowar are Rs.3 per quintal in the district.

Table 6.20: Mode of Transport and Marketing Charges for Sale of Ragi in Davangere District

Farm Size Group	Mode of Transport	Marketing Charges (Rs. Per Quintal)			
	Tractor (No. of Qtls.)	Transport Charges	Loading & Unloading	Gunny bags	Total
I (<1Ha.)	0	0	0	0	0
II (1-2 Ha.)	1	0.60	0.20	3.00	3.80
III (2-4 Ha.)	0	0	0	0	0
IV (4-6 Ha.)	0	0	0	0	0
V (>6 Ha.)	1	0.40	0.15	0	55
Average	2(total)	0.50	0.18	1.50	2.18

Ragi was transported largely through bullock carts and tractor trolleys. The transport charge per quintal was 50 paise, 18 paise for loading and unloading and Rs.1.50 for gunny bags that add up to Rs.2.18 per quintal of Ragi (Table 6.20). Only farmers in Size-group II and Size-group V were engaged in the marketing of the crop and it is seen that the expenses borne by the farmers in Size-group V was far lower than that borne by farmers in Size-group II.

6.6 Farmers' Responses about Marketing

We have ascertained the responses from the selected households about the problems confronted during marketing. A large number of them appear to have formed opinions about the market functioning but rather remain with the traditional marketing channels.

Table 6.21: Farmers' Responses on the Issue of Marketing Their Produce to Procurement Agencies in Davangere District

(No. of Farmers)

Particulars	Farm Size Groups					Total
	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	
1.No. of Sample Farmers	27	23	7	2	1	60
2.Reasons for Preferring to Sell to Public Agencies						
a) Better Price	25	22	7	2	1	57
b) Quick Disposal	2	3	0	0	1	6
c) Honest Weighing	7	9	3	2	0	21
d) Immediate Payment	1	0	0	0	0	1
e) Help in Inputs	2	0	0	0	0	2

Farmers' responses on their preference to sell their produce to public agencies are presented in Table 6.21. Around 95 per cent (that is 57 out of 60) of the farmers preferred to sell their produce to public agencies because of the better prices they offered. About one-third farmers stated honest weighing as the main reason for preferring public agencies. Hence, farmers had multiple reasons for opting to sell through public agencies. But they also indicated the problems faced by them during the actual operations. In other words, the answers above were of normative nature but the practical difficulties came up subsequently.

Table 6.22(a): Farmers' Responses on the Difficulties in Marketing their Produce to Private and Village traders, Local Market in Davangere District.

(No. of Farmers)

Particulars	Farm Size Groups					Total
	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	
1.No. of Sample Farmers	27	23	7	2	1	60
2.Difficulties faced from Private Traders						
a)Low Price	18	17	5	2	0	42
b)Payment Delayed	27	22	7	2	1	59
3.Difficulties Faced from Village Traders						
a)Low Price	9	16	1	0	0	26
b)Difference in Weighment	4	1	2	0	0	7
c)Not Interested	3	1	2	1	0	7
d)No Village Trader	11	5	2	1	1	20
4.Difficulties Faced in Local Markets						
a)Not interested	4	1	0	1	0	6
b)No local market	23	22	7	1	1	54

Tables 6.22(a) and 6.22(b) presents the number of farmers who faced various kinds of problems in marketing their produce to private and village traders and also in the local and wholesale markets. In the case of selling to private traders almost all the sample farmers faced the problem of delayed payment. Out of 60, 42 farmers faced the problem of low prices. These 42 were spread out across size groups-I to IV. Hence, it is visible that selling to private traders was not satisfying to the farmers in all size groups. But the very fact that they had strong opinion of the operations confirmed their sale to these private traders. The farmers referring to the difficulties faced with village traders were mostly small farmers while the big farmers responded that there were no village traders. Twenty-six out of 60 farmers reported that they were paid low prices and 7 farmers complained of the difference in weighing. The victims of both these problems were confined to the first three size groups, which meant that the small farmers were largely at a disadvantageous position, and got exploited by the village traders.

Table 6.22(b): Farmers' Responses on the Difficulties in Marketing Their Produce in Wholesale Market and Public Agencies in Davangere District.

Particulars	(No. of Farmers)					Total
	Farm Size Groups	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	
Difficulties in Wholesale Market						
a) Long Distance	8	5	1	0	0	14
b) Transport Cost	16	14	5	2	1	38
c) Market Fee	0	1	0	0	0	1
d) Not Interested	1	0	0	0	0	1
e) Delay in Payment	0	1	0	0	0	1
f) Low Price	2	2	1	0	0	5
Difficulties faced in Marketing to Public Agency						
a) Delay in Payment	7	5	2	0	0	14
b) Delay in Disposal	0	3	1	0	0	4
c) No Procurement	17	13	4	1	1	36
d) Delay in Payment & Disposal	3	2	0	1	0	6

Regarding formal local markets, the farmers' conveyed that they were not interested in selling their produce in these markets. Six farmers replied that they were not interested and 54 out of the 60 farmers stated that there were no formal markets in their locality. In selling their goods in the wholesale market, a maximum number of farmers faced high transport costs. Their numbers were 38 and were spread over all the size groups. All the farmers in Size-group IV and V replied of facing the problem of high transport cost. The

other difficulties like long distance, high market fee, delay in payment and low prices were faced only by farmers in the smaller size groups. Out of 60, 14 farmers complained of longer distances to the wholesale market and 1 each reported of a higher market fee and delay in payment. A few farmers also reported low payment for their produce in the wholesale market and they were confined to the smaller three size groups. In the case of marketing their goods to the public agencies, a maximum number (36) of farmers complained that there was no procurement by these agencies in their locality.

Table 6.23: Farmers Responses Regarding Problems in Marketing, Market Yard, Weighment and Payment in Davangere District.

(No. of Farmers)

Particulars	Farm Size Groups					Total
	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6Ha.)	V (>6 Ha.)	
1.No. of Sample Farmers	27	23	7	2	1	60
2.Problems with Marketing						
a) High Rate of Transport	13	9	2	1	0	25
b) Easy Availability of Transport	21	18	3	1	1	44
c) Timely Loading/Unloading	20	15	3	1	1	40
3.Problems with Market yard						
a) Enough Space	17	15	3	1	1	37
b) Enough Parking Place	17	15	3	1	1	37
c) Enough Staying Arrangements	8	7	1	0	0	16
4.Weighment problems						
a) Timely Weighment	23	18	6	1	1	49
b) Arbitrary Reduction from Weight for Lower Quality	2	1	1	0	0	4
c) Reduction in Price due to Lower Quality	5	5	0	0	0	10
5.Payment problems						
a) Immediately after Weighment	0	1	0	0	0	1
b) After One Week	4	5	1	1	0	11
c) After Two Weeks	9	11	4	0	0	24
d) After Three Weeks	3	0	0	0	1	4
e) After a Month	11	6	2	1	0	20

The details of the existence of various problems related to Marketing, Market yards, Weighment and Payment faced by the sample farmers are also shown in Table 6.23. These were the responses of the farmers to the directed question. Regarding problems related to marketing, a maximum number of farmers said that transport was easily available and also there was timely loading and unloading of their produce. High rates of transport cost was reported by 25 out of the 60 farmers, while 44 farmers conveyed that there was easy availability of transport facilities. Forty out-of 60 farmers revealed that there was timely loading and unloading facilities for their produce. In troubles related to

facilities in the market yards, 37 farmers maintained that there was enough space to exhibit their produce and enough parking place available to park their bullock carts. Around 40 per cent of the farmers were not satisfied with these facilities available in the market yards. Only 16 farmers reported the adequacy of the staying arrangements made available to them in the market yards. Hence, the facilities in the market yards needed to be improved. In the context of weighing of their produce only a few farmers faced problems because 49 out of the 60 farmers recounted that there was timely weighing of their produce and only 4 farmers stated arbitrary reduction in weight for lower quality of their produce. Ten farmers faced a reduction in price due to lower quality of their produce. Almost all farmers faced delay in payment after they marketed their produce. Only one farmer informed of immediate payment and 11 farmers expressed that they were paid after a week's time, while 24 said of delay of two weeks, 4 pronounced a delay of three weeks and 20 testified that payment was delayed by a month.

Table 6.24: Number of Farmers Responding about Collusion between Purchaser and Commission Agent in Davangere District

Collusion on	Farm Size Group					Total
	I (<1Ha.)	II (1-2Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6Ha.)	
1.Price Fixation	26	23	7	2	1	59
2.Grading/Quality of Produce	25	18	7	2	1	53
3.Weighment	26	23	7	2	1	59
4.Payment	10	6	3	1	1	21
5.Bidding	7	3	2	0	0	12

The replies given by farmers regarding their impressions about collusion between their purchaser and commission agents is summarized in Table 6.24. A perusal of the table indicates that farmers did not trust the agents fully, as they had knowledge of the collusion of their agents with their purchaser in certain matters relating to price fixation, grading, weighing, payment and auctioning or bidding their produce. Almost all farmers conveyed that they had knowledge of the collusion in price fixation and weighing. Fifty-three farmers were aware of collusion in grading and 23 were aware of collusion in payment and 12 of that in bidding their produce.

The channels through which the farmers' receive price signals and farmers responses on the effects of these price signals on the cropping pattern, adoption of improved technology, the input use and their marketing activities are covered in Table

6.25. It is very clearly indicated in the table that the farmers accessed multiple sources of information regarding price changes. All the farmers in the sample received information from their Commission agents. Apart from this, they received information from the personal visit to their neighbouring villages and block centres. Ten out of 60 farmers received information through Radio/TV/newspapers, 36 from neighbours and 30 from local traders.

Table 6.25: Number of Farmers Responding on the Channels of Price Signals and its Effect on Cropping Pattern, Production and Marketing in Davangere District

Particulars	Farm Size Groups					Total
	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	
1.No. of Sample Farmers	27	23	7	2	1	60
2.Channels of Price Signals						
a) Message given by C.A.	27	23	7	2	1	60
b) Personal Visit	25	22	7	2	1	57
c) Radio/TV/Newspaper	4	2	2	1	1	10
d) Information from neighbour	14	16	4	1	1	36
e) Local trader	16	9	3	1	1	30
3.Effect of Price Signals						
a) Change in area	9	15	4	2	1	31
b) Adoption of Improved technology	9	12	4	1	0	26
c) Intensive input use	19	21	6	2	1	49
d) Sale of produce	7	10	1	1	0	19

In looking into the views of farmers on the effect of price signals on their decisions, the highest number of farmers (49) replied that the price signals had an effect on the input use. More than half of the farmers reported of influence on the cropping pattern, twenty-six connected adoption of improved technology and 19 farmers of an effect in the sale of their produce.

Table 6.26: Channels of receiving Information about Technical Change in Davangere District

Channels	Farm Size Groups					Total
	I (<1Ha.)	II (1-2Ha.)	III (2-4Ha.)	IV (4-6Ha.)	V (>6 Ha.)	
1.Block Authorities	13	11	5	2	1	32
2.Village President	1	1	0	0	0	2
3.Neighbour	20	14	4	1	0	39
4.Input Marketing Agencies	26	22	7	2	1	58

Among the sample farmers indicating the sources of information about technical change, 58 farmers stated to have received information from input marketing agencies, 39 got it from neighbours, 32 with the help of block authorities and 2 from the Village president. On the whole, farmers were well informed of the present technological requirements in crop production and it is also noted that they had access to multiple sources of information.

Only 11 farmers stated that they had the knowledge of future markets while 49 stated no knowledge of such phenomenon (Table 6.27). Of these 11, 3 farmers said that it was not helpful in any of their decision-making process and 8 farmers affirmed that they had no practice of using the knowledge of future markets in their decision-making.

Table 6.27: Farmers' Knowledge of Future Markets in Davangere District

(No. of Farmers)

Particulars	Farm Size Groups					Total
	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	
1.No. of Sample Farmers	27	23	7	2	1	60
2.Farmers having knowledge of Future Markets						
Yes	2	5	3	1	0	11
No	25	18	4	1	1	49
3.Is it Helpful						
Not helpful	0	3	0	0	0	3
No such practice	2	2	3	1	0	8

The number of farmers who had taken recourse to distress sale was quite small (Table 6.28). Of the total 8 farmers, 6 stated that there was urgent need for cash and that was the main reason for resorting to distress sale. Only two farmers confirmed advance

Table 6.28: Farmers' Responses on Taking Recourse to Distress Sale in Davangere District

(No. of Farmers)

Particulars	Farm Size Groups					Total
	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	
1.No. of Sample Farmers	27	23	7	2	1	60
2.Farmers taking Recourse to Distress Sale						
Yes	6	2	0	0	0	8
No	21	21	7	2	1	52
3.Reasons for taking recourse to Distress Sale						
a) Financial problem	4	2	0	0	0	6
b) Advance from Agent	2	0	0	0	0	2

payment received from the Commission agents. However, we located that this phenomenon was quite prevalent in the region and farmers were reluctant to tell, as all these agents were non-licensed moneylenders. Cumbersome procedures and timely non-availability of institutional credit allowed proliferation of this phenomenon.

Table 6.29: Farmers' Opinion on Institutional Credit and Pledge Financing in Davangere District

Particulars	(No. of Farmers)					Total
	Farm Size Groups					
	I (<1Ha.)	II (1-2 Ha.)	III (2-4 Ha.)	IV (4-6 Ha.)	V (>6 Ha.)	
1.No. of Sample Farmers	27	23	7	2	1	60
2.Has the Sale Delayed with the Non-availability of Institutional Credit						
Yes	16	17	4	1	1	39
No	11	6	3	1	0	21
3.If yes, by how many months						
a) Two Months	1	4	0	0	0	5
b) Three Months	6	1	1	0	0	8
c) Four Months	3	5	0	0	0	8
d) Above Four Months	6	7	3	1	1	18
4.Desire to Avail Pledge Financing						
Yes	12	13	4	1	1	31
No	15	10	3	1	0	29
5.If yes, What Would be the Reasonable Rate of Interest						
a) 2 per cent per Month	4	9	1	1	1	16
b) 3 per cent per Month	8	4	3	0	0	15

The farmers' reactions on the availability and usefulness of institutional credit and their views on Pledge financing are presented in Table 6.29. It can be seen that 39 out of 60 farmers blamed that their sale had been delayed due to timely non-availability of the institutional credit. These farmers were from all size groups of holdings. Most of these farmers stated that the sale of their produce had been delayed between 2-4 months, while 18 farmers said it had been delayed for more than four months. On the suggestion to the farmers to avail of the facility of pledge financing, 31 of the farmers preferred the idea and 29 did not opt for it. Among the farmers who were willing to avail of pledge financing, 16 indicated a 2 per cent rate of interest, while 15 of them indicated 3 per cent rate for the finance to be made available through pledge financing.

When asked on how they weighed the influence of price change and technical change on their decision on area allocation and input use, the number stating an increase in area allocation and input use owing to the two variables- price change and technical

change had been similar (Tables 6.30 and 6.31). Thirty-five farmers stated an increase in area allocation and 44 an increase in input use. When analyzed in percentage terms, the per cent of farmers replying an increase in both the variables increased with farm sizes and 100 per cent of the farmers in bigger farms had opined of an increase in both area allocation and input use.

6.7 Conclusions

Davangere is a commercially-oriented district in Central Karnataka. But the process of commercialisation emerged under the shadow of frequent visitation of droughts coupled with other infrastructure bottlenecks. Even now not all marketable surplus reaches the market and the regulated markets are far from perfect. Largely the process of commercialisation is directed more towards the non-food crops but in the recent past a sizeable portion of the marketable surplus of foodgrains was sold in the markets. Two marketing channels are prevalent. First, the marketing takes place at the village itself and the purchaser is usually an agent of some wholesaler in the town. A large portion of the commodities is sold through this agent and therefore, the farmers have confusion about the usual Commission Agent in the market yard and the agent who visits the village. It is also interesting that the same person is frequently present in the Regulated market. Second channel is the marketing by groups. The grains are taken to the market by a few farmers together and sold together. The proceeds are shared in proportion to the quantity of the produce. Maize is usually marketed in this manner.

Table 6.30: Number of Farmers Responding about the Influence of Price Increase on Area Allocation and Input Use in Davangere District

Farm Size Group	Price Increase								Percent of Farmers stating an Increase in Area Allocation	Percent of Farmers stating an Increase in Input Use
	Area Allocation				Input Use					
	Increase	Percent to Total	Remain-ing Same	Percent to total	Increase	Percent to Total	Remain-ing Same	Percent to Total		
I (<1 Ha.)	10	28.57	17	68.00	16	36.36	11	68.75	37.04	59.26
II (1-2 Ha.)	16	45.71	7	28.00	18	40.91	5	31.25	69.57	78.26
III (2-4 Ha.)	6	17.14	1	4.00	7	15.91	0	0.00	85.71	100.00
IV (4-6 Ha.)	2	5.71	0	0.00	2	4.545	0	0.00	100.00	100.00
V (>6 Ha.)	1	2.86	0	0.00	1	2.273	0	0.00	100.00	100.00
Total	35	100	25	100	44	100	16	100	58.33	73.33

Table 6.31: Number of Farmers Responding about Influence of Technical Change on Area allocation and Input Use in Davangere District

Farm Size Group	Technical Change								Percent of Farmers stating an Increase in Area Allocation	Percent of Farmers stating an Increase in Input Use
	Area allocation				Input use					
	Increase	Percent to Total	Remaining Same	Percent to Total	Increase	Percent to Total	Remaining Same	Percent to Total		
I (<1 Ha.)	10	28.57	17	68.0	16	36.36	11	68.75	37.04	59.26
II (1-2 Ha.)	16	45.71	7	28.0	18	40.91	5	31.25	69.57	78.26
III (2-4 Ha.)	6	17.14	1	4.00	7	15.91	0	0.00	85.71	100.0
IV (4-6 Ha.)	2	5.71	0	0.00	2	4.54	0	0.00	100.00	100.0
V (>6 Ha.)	1	2.86	0	0.00	1	2.27	0	0.00	100.00	100.0
Total	35	100	25	100	44	100	16	100	58.33	73.33

CHAPTER VII

SUMMARY AND CONCLUSIONS

7.1 Introduction

Domestic market reforms are high on the agenda of the present economic restructuring. It has acquired two different connotations in the academic discussions. First, it stems out of the intended compliance to the requirement of the WTO and therefore, largely focuses on the trade distorting measures, whereas the second is more fundamental dealing with the domestic market infrastructure. The issues pertaining to the second aspect have been discussed at various forums and specifically focus on the working of the product market. The Agricultural Produce Market Acts passed by various states attempted to deal with the inadequacies present during the sixties. At that time it had focussed on dealing with the scarcity situation and distribution of grains. Naturally, the Act as well as the policies were tuned to the situation prevalent then. Even though the act is being modified concurrently, the basic structure remained the same. More than that the market shortcomings remained unattended. Agricultural marketing also remained at the second level on the research agenda of academics and found only an incidental place in the policy debates. The current issue, therefore, is of an urgent nature and focuses on four components for discussion. First, the adequacy of the rural grain market as a component infrastructure and as a supporting institution is under discussion. It is claimed that the shortcomings during the sixties continued to dog the sector even in the nineties. Second, the question is raised about the incentives created by the price intervention scheme as well as the prices received by the producers. In this context, the role of the State *vis-a-vis* the role of the market came under discussion. Third, with the increased pressure of commercialisation various currents are visible in the markets across regions. These have emerged under different situations, and therefore, call for a systematic documentation. Lastly, we have a very devious situation wherein the organised market structures are performing much less than the expectations, the market intervention schemes are performing only in a few selected regions, the intermediaries are usurping significant margins, and at the same time, the

economic forces require the farmer to participate in the market albeit pro-actively. This called for a thorough study of the marketing environment of the farmer. Rightly, the study was initiated and the design covered all these issues.

Karnataka is a state with a slow emergence of commercialisation on the scene. Unlike some other States, the process of commercialisation here did not tread the path through foodgrain marketing. It is well known that the marketable surplus of foodgrains is sold in the market, but largely the farmers prefer to take other non-food crop as the supporting cash crop. The State has distinct product markets developed for cash crops over the years. The coastal region of Karnataka has the markets and market channels developed for Arecanut, Coconut, Cashew and Spices. The south interior Karnataka is known for plantation crop marketing, sericulture and horticultural crops. Northern Karnataka is directed towards sugarcane, cotton, pulses and oilseeds. It is in this region that the foodgrains also come under commercial production. This is also true about the districts on the Deccan Plateau and some of the southern Karnataka district. Rice is on the rise as a cash crop and so also maize. We have chosen two districts of Central Karnataka to analyse the marketing systems in these districts, under the constraint that the results are solely confined to these crops and districts. The generalisation for the State will be difficult due to the extreme regional specificity and crop features.

7.2 The Canvass

The study made use of the secondary and primary data from the districts of Chitradurga and Raichur. It is interesting that these two districts were reorganised recently and the districts of Koppal and Davangere were carved out. Both the districts do not have adequately developed marketing infrastructure. The primary data were collected from the following villages.

- Waddarhatti, Kesarhatti and Hosakere of Gangavathi Block, Raichur District.
- Pagadadinni, Jawalgera and Jilihal of Sindhanur Block
- Hebbala, Chinnasamudra and Hulikere of Davangere Block
- Kurlahalli, Bilasnur and Vaderhatti of Harihara Block

We selected 120 farm households from Raichur district for covering cultivation of Paddy in two seasons and 60 farm households from Davangere (earlier, part of Chitradurga) district. These were selected in relation to the probability proportion to their size class of holdings. The reference year for the primary data was agricultural year 2001-02. It may be noted that the State interventions was extremely sporadic and not consistent in any of the districts of Karnataka. Rice is procured from the mills and there was one instance of procurement of maize in Dharwad district. The procurement thus took place as an exception and not as any routine operation. Raichur is a paddy growing area and recently the procurement of rice from the millers was more from Raichur district, and that was not in response to the price collapse, but more due to a political decision. The concept of Commission Agent is quite different in Karnataka. Commission Agent is a person who acts as an agent of the trader, and he is usually an employee of the trader with the responsibility to purchase grains from the village or market on behalf of the traders. He visits the village quite often for advancing loans during sowing and growing seasons when the cultivators are under economic stress. He functions as agent and moneylender which are overlapping.

As indicated earlier, two different districts were chosen for the purpose of primary survey, viz., Raichur and Chitradurga districts. The districts are situated in central Karnataka region largely falling in the rainfed zone of Karnataka but in the region with good potential for development of markets and commercial crops. The district of Raichur is known for its agricultural predominance and despite adversely placed under climatic constraints, the district has done well in stepping up the growth of its agricultural economy. Among the constraints, small and marginal farmers predominate the district's agrarian structure and this is further aggravated by the persistent drought situation in the district. Raichur has some area under irrigation but a large part of the district falls in the rain shadow zone. Markets for agricultural commodities are well developed in the district. Chitradurga district is also a drought-prone area of Central Karnataka having persistent history of drought. The district has recorded moderate growth in the crop economy. Food grains dominate its cropping pattern. Oil-seeds and cotton are the major cash crops of the district. Agricultural markets are well developed in Chitradurga district and the economy of the district is

supported by cash crops especially from oil-seed processing sector. We have taken these two districts for the purpose of our study based on the criteria indicated by the coordinating centre. We are mapping out here the basic characteristics of the selected districts.

Raichur and Chitradurga are the districts with emerging commercial orientation in their agricultural economy. Both districts are predominantly food grain growing districts, but the commercial crops have made their presence felt in the region. Oil-seeds happen to be major commercial crop but slowly and steadily cereals are also reaching the regulated markets in a sizeable quantity. Among cereals, rice and jowar are the predominant crops getting into regulated markets. Among the two districts, Raichur is yet to realise full potential of its marketing operations and the regulated markets in the district have a good amount of arrivals from neighbouring regions. Chitradurga, on the other hand, has a well-developed oil-seed market economy. Infrastructural bottlenecks are the major hurdle for both districts and they are in disadvantageous position due to the low proportion of irrigation.

The sample profiles of the two districts suggest quite a few interesting issues. First, the land size has been shrinking and that leaves a smaller base for farm production activities. Even though tenancy is legally banned in Karnataka, the prevalence of leasing out operations is seen among the sample farmers. In order to overcome the land based constraint, the cultivators lease in land. Second, oilseeds, sugarcane are the traditional cash crops. But with the increased market operations in paddy and wheat, these cereals have also assumed the role of cash crops. Maize is strongly emerging as a new cash crop. The processing units largely procure it. Third, the asset position of the sample farmers was not very promising. Some of the farmers owned tractors but these were largely used for transportation than tillage or farm based activities. Many owned irrigation pump sets. Lastly, even though the two sample regions had a commercial-orientation, the production base did not allow for scaling up of this operation.

7.3 Market Regulations and Institutions

Market Regulations can be grouped into two broad groups viz., regulations governing functioning of primary agricultural produce markets, including a series of legal instruments and the Market Committees functioning as intermediaries. Regulation and development of primary markets was taken up as an institutional innovation and construction of well laid-out market yards. These regulations provided a design for the conduct of the agricultural market produce committee. The Directorate of Marketing and Inspection (DMI) of Government of India and state level Directorate of Marketing play an important role in the functioning of these institutions. In order to remove the components causing market imperfections and to bring the functions of agricultural marketing under a proper legal framework, the State governments passed the Agricultural Produce Marketing Acts. The Acts were passed in most of the states around mid-sixties and revised subsequently. The Acts incorporated seven major components dealing with the establishment, function and conduct of the business.

The important general features of regulated markets include: Monitoring of marketing practices by Regulated Market Committees; Licensing of functionaries; Open auction or close-tender system; Issue of sale slips showing quantity and price to the farmers; Well-publicised time and days of sale; Correct weighment of the produce by licensed weighman; Prescription of rational market charges; Provision of payment to farmers within stipulated period; Mechanism of dispute settlement; Dissemination of market related information; Provision of amenities to the farmers in market yards and Reduction of physical losses during buying and selling.

Five decades of continuous policy intervention has not made significant changes and a lot needs to be done. Even a cursory visit to any regulated market yards suggests that we still have to achieve a lot on this count. Certain practices like late payment to farmers, under-pricing, arbitrary grading, speed money and non-issue of sale slips by the traders continue to dog the performance of markets. There is a considerable congestion and delays in several markets resulting in long waiting periods for the farmers to receive their payments. The traders have organised into informal cartels and these cartels squeeze the farmers. There is also lack of understanding about the market

regulations particularly those relating to the sale of produce outside the market yards. Funds collected as cess and market fees are not properly utilised. In the process, APMCs are emerging as some sort of monopolistic centres of sale and purchase with the reins in the hands of a few.

Agricultural marketing system at primary level in Karnataka involves four broad marketing channels, viz., (i) direct to consumers; (ii) through private wholesalers and retailers; (iii) through public agencies (regulated markets) or cooperatives; and (iv) through processors. The share of these channels in total marketed surplus varies from commodity to commodity and across regions. Marketing structure of the agricultural produce differs according to products. Among these channels large quantity of produce is transacted through the regulated market channel. It is necessary to understand the basic functioning of the regulated markets at lower level before one gets into analysing the reforms in marketing. Foodgrains are mostly marketed at the primary village market or in the regulated market yard. The procurement of grains takes place only in the case of rice and through the processing mills. Oil-seeds are largely sold through the regulated markets and directly to the processors. But other commercial crops like banana, arecanut, coconut, sugarcane and cotton have developed specific marketing channels.

Due to the creation of marketing institutions and infrastructure a few changes though sporadic have occurred in the agricultural marketing sector. These include: i. Increase in the market arrivals as per cent to total output; ii. Reduction in the market inefficiencies in terms of unauthorised charges and irrational grading; iii. Dissemination of market information at the regulated market yard; iv. Better storage facilities and place to stay was created for the farmers; marketing charges payable by farmers were either dropped, standardized or liability shifted to the buyers; and v. Villagers are not selling major portion of their produce in the village and the proportion of distress sale reduced significantly.

7.4 Marketing Paddy in Raichur District

7.4.1 Process of Marketing

Paddy being one of the major food crops of Raichur district we have taken the production and marketing of paddy here for analysis. Even though paddy is one of the major food consumption items, only a small percent of the produce is retained for home consumption and for seeds. There is a steady and consistent increase in the quantity marketed of paddy with the increase in the size of farm. A major share of the produce of paddy is marketed and the proportion of marketed surplus by the big farmers is higher. The marketing infrastructure is not well developed in Raichur district. Therefore, the data obtained from the Commission agents were hardly of any use. The Commission agents operate at a very low key and mostly procure from the individual farmers at the farm itself. The presence of Commission agents is most illusive and no information was available on this aspect. There was no direct sale to the millers and therefore, the intricacies of this sale could not be investigated. The rice mills are very few and most of the millers from different districts procure from the market directly. The mills are also operating at lower than their capacity as there is tough competition from the millers of the neighbouring districts. In the case of paddy, surprisingly, the share in output is higher than the share in quantity marketed in the smallest size class of holding. This is due to the wages in kind received by many of them. In other groups the latter is higher than the former. Farmers market relatively larger proportion of the produce in the land size above 1 hectare while farmers with land size below 1 hectare (small farmers) retain a relatively larger proportion of the produce.

Jowar is another important food crops grown by the farmers of Raichur district. It was being grown largely for home consumption but recently some portion of the produce is marketed. Even though production per farm of Jowar increased with size, the first two smaller groups and farmers in size class of above 6 hectares does not have surplus for marketing. Only farmers in III & IV groups marketed their produce. Hence, the marketed quantity was only a meagre amount. More than 90 per cent of the production of Jowar was from the first two lower size groups, but no quantity was

marketed. In Size-classes of 2 to 6 hectares, the share of quantity marketed was much higher than the share in output. The combined share of output of these two groups was only 33.11 per cent while the entire marketed quantity of Jowar was from these two groups. More than 90 per cent of the production of Jowar was from the first two lower size groups, but no quantity was marketed. Sunflower is an emerging commercial crop in the district. Only the farmers with land size above 2 hectares undertook production of this crop. It increased with farm size and hence, the quantity marketed. For sunflower, whatever was produced was marketed as it is a cash crop and hence, the per cent share of both output and quantity marketed remained the same.

7.4.2 Seasonality in Marketing

It was observed that the phenomenon of 'the farmer waiting for the market price to reach their expectation and then releasing their produce in the market' has been increasing in the recent past. It may be noted that dry paddy can be stored and marketed at an opportune time and therefore, the sale of paddy is spread over a longer period. The pressure of marketing had been highest in the month of December (harvest season), followed by April and January. Farmers also sold paddy as late as in May. The pressure has been lowest in March with the lowest marketed quantity. The small farmers with less than 4 hectares of land undertook most of the paddy marketing during the months of November, December, March and April, whereas, farmers from higher size group also sold in January, April and even up to May. We observed that not a large share of Jowar was marketed. The important month for marketing of Jowar was May. Farmers cultivating less than 2 hectares of land did not participate in marketing of jowar. Sunflower being a cash crop the total produce was marketed. Two important months for marketing Sunflower were April and May. In these two months the pressure of marketing was very high but especially so in the month of April. In the month of April, the big farmers in size groups above 4 hectares of land undertook marketing whilst, the small farmers preferred to sell their produce in the month of May.

7.4.3 Transportation and Marketing Charges

Two major means of transport used by farmers to transport their produce are lorry and tractor trolleys. It is seen that the use of lorries is predominant in all size groups. Farm sizes above 4 hectares transported almost their entire marketable produce through Lorries. Only small farmers used a tractor for transporting the produce to the market. The average expenses borne by the farmer in marketing per quintal of paddy was Rs. 0.33 per quintal. The farmers in the higher size groups had not reported some of these charges and probably the purchaser as a favour to the farmer usually met these. Only farmers in Size groups-I, II & III bore the marketing charges. Tractor trolleys were the only means used for transporting Maize and Jowar. The average marketing charges per quintal borne by the farmers in the sample added up to Rs.13.54. Jowar had higher marketing charges compared to Paddy/rice. This is due to the very reason that usually the purchasers of jowar were largely by the ultimate consumers. But, in the case of maize and paddy, the purchasers were usually the traders/processors/ agents (not commission agents as defined in APMC Act).

7.4.4 Constraints in Marketing

It is important to note that small farmers, in general, are very much prone to most of the difficulties compared to large farmers. Farmers stating problems with the marketing of their produce were largely confined to the smaller groups operating less than 4 hectares of land. Mostly the farmers preferred the sale at the village and distance of the market was often quoted as the main constraint. As regards marketing in the wholesale market, farmers belonging to smaller size groups stated that the transport costs were high. These might be for those farmers who hired vehicles for transport of their produce. A majority of the farmers face difficulties in availing transport and were dissatisfied with the loading and unloading facilities. Small farmers who had to resort to hiring attributed all these problems to the lack of ownership of resources. About the facilities in the market yards, farmers in larger size groups were not satisfied with the arrangements for exhibiting their produce and parking their carts. No farmer conveyed that adequate staying arrangements had been made for over-night stay when they sold their produce the next day. Hence, the facilities in market yards

were the major constraints. Small farmers owing to lower quality of their produce mostly experienced reduction in weight and price. A majority grumbled about delayed payment. Farmers in all size groups, were very well aware of the collusion between their Agents and the purchaser in price fixation, grading, weighing their produce and bidding, which stood in the way of the farmer receiving a justified price for the produce. Therefore, the farmers largely preferred to sell at the village itself.

7.4.5 Farmers Responses

A farmer receives information about prices from more than one source, the Agents being the first important source followed by the personal visit of the farmer to the market places, which had a considerable but, moderate influence on their decisions related to cropping pattern, their use of intensive inputs, adoption of new technology and changes in marketing of their produce. Farmers had good access to the information on technical change as it is seen in the sample that a farmer received information from multiple sources. The most important source of information about technical change was provided by the Input Marketing agencies. Share of farmers stating an increase in area allocation and input use as a result of price increase and technical change had been higher in higher farm size groups (almost all farmers stating an increase). Future markets had not emerged in the sample region. A majority of the farmers in the sample region did not have any knowledge of the future markets. Farmers who had knowledge also had no practice of using these in their marketing decisions. Farmers replied in affirmative, on taking recourse to distress sale and these farmers had been mostly in the smaller three size groups. The sole reason for distress sale of their produce had been the urgent need for money except for one case that resorted to sale due to low quality.

7.5 Marketing in Davangere District

7.5.1 Process of Marketing

The constraints on the agricultural economy of Davangere district are quite strong in terms of unfavourable climate and underdeveloped infrastructure. The marketing activity is still concentrated through the informal channels and the organised marketing is not so much preferred. The district of Davangere is known for its

production and marketing of Maize. No part of the produce of Maize is retained for home consumption or seeds by any of the size groups, but for a small amount is reserved for animal feed. The marketed quantity when viewed in relative terms, that is, as percent of the total quantity produced a decline is observed in Size-group IV. On an average, 92.31 per cent share of the produce was sold in the market. Sugarcane has been strongly emerging as a cash crop in Davangere and taken up for cultivation by farmers of all sizes of holdings except farmers in the highest size group. It is replacing paddy and maize at a very fast rate. The Commission agents operate at a very low key and mostly procure from the individual farmers at the farm itself. There was no direct sale to the millers and therefore, the intricacies of this sale could not be investigated. The rice mills are very few and most of the millers from different districts procure from the market directly.

7.5.2 Seasonality in Marketing

Davangere is a business centre and one can expect prudent marketing strategies in the district. But probably crop husbandry is an exception and the farmers face resource, cash and infrastructure as major constraints. Lack of storage and development of market yards also act as strong constraints. The concentration of marketing of Maize is highest in the months of January and February. The pressure of maize marketing is highest in the month of February when farmers in all categories, except those with higher size of holdings, actively participate in selling their produce. In the month of January, the marketing activity is relatively at low key while in December.

7.5.3 Transportation and Marketing Charges

Farmers transport their produce of paddy to market yards using two major means of transport- lorry and tractor trolleys. But unlike Raichur, tractor trolleys are the major mode of transport for Maize. It is observed that the farmers in higher size groups use tractors on a large scale for transportation. The average transport charges and market expenses borne by farmers per quintal of maize is Rs.7.07. The transport charges indicate an increasing trend with the increase in farm sizes that means the transport costs are higher in the higher farm sizes with Size group-V an exception.

Around 95 per cent (that is 57 out of 60) of the farmers preferred to sell their produce to public agencies because of the better prices they offered. But not many of them did due to poor infrastructure. About one-third of the farmers stated that honest weighment was the main reason for preferring public agencies. Hence, farmers had multiple reasons for opting to sell through public agencies. But they also indicated the problems faced by them during the actual operations.

7.5.4 Constraints in Marketing

In the case of selling to private traders almost all the sample farmers faced the problems of delayed payment and quite a lot complained of low prices. It was visible that selling to private traders was not satisfying to the farmers in all size groups. Regarding formal local markets the farmers' conveyed that they were not interested in selling their produce in these markets and many highlighted the absence of local markets in their locality.

In selling their goods in the wholesale market, a number of farmers conveyed high transport costs. The farmers in all the size groups faced other difficulties like long distance, high market fee, and delay in payment and low prices. In the case of marketing their products to the public agencies, a maximum number of farmers complained that there was no procurement by these agencies in their locality.

7.5.5. Farmers Responses

Almost all farmers are aware of the collusion between their agents and the purchasers of their produce. It is very clearly indicated that the farmers have access to multiple sources of information regarding the price changes. All the farmers in the sample received information from their Commission agents. Most of the farmers experienced an effect of it on their decisions on the input use and a few others experienced an influence on their cropping pattern. The most important source of information regarding technical change was the input marketing agencies. Only a few farmers showed some knowledge of future markets and they had no practice of using it in their decision-making. The number of farmers who had taken recourse to distress sale

was quite small. Only two farmers confirmed the advance payment received from the Commission agents. However, we observed that this phenomenon was quite prevalent in the region and farmers were reluctant to reveal, as all these agents were non-licensed moneylenders. Cumbersome procedures and timely non-availability of institutional credit allowed proliferation of this phenomenon. Thus, farmers blamed that their sale had been delayed due to timely non-availability of the institutional credit and those who were willing to avail of pledge financing belonged to all size groups of holdings and not especially small farmers.

7.6 Towards an Efficient Marketing System

Historically agricultural marketing structure in the country began specifically for the commercial commodities. The commercial culture has always been in the background of these institutions. The real boost in the development of marketing infrastructure came after the advent of 'Green Revolution'. It was during the seventies and eighties that a sizeable quantum of marketable surplus was generated and this required the facilities for marketing. It was under this supply pressure that the establishment of Regulated Market Yards was undertaken. At the same time there was also the pressure from the farm lobby, protesting against the exploitation by the market intermediaries like *Adatya* or middlemen. Primitive exploitative systems like *Hattha* system were in operation. In this context the step towards establishment of formal marketing institutions in the form of Regulated Market Yards was a welcome step. It was envisioned that this facility would wipe out the inadequacies. Keeping in tune with the economic philosophy of those years, the Market structure was placed under the control of a cooperative body called Agricultural Produce Market Committee, with proper assistance from an official, acquainted with the intricacies. The market intermediaries in the form of *Adatyas* were formalized and named as Commission Agents. It did not take much time or efforts for the erstwhile *Adtyas* to don the clothes of the newly created nomenclature of Commission Agent. In the initial euphoria the regulated markets were established almost at each taluk level and also at the big towns below the taluka level. But the density of Regulated markets was far short of the requirements and even now the farmers of Karnataka have to travel an average distance of 50 kms to reach a

Regulated Market. In the absence of the adequate density of markets and the infrastructure to reach the market, it is quite expected that a large portion of the marketable surplus generated be sold locally to the Agents in the village. In consequence, the low density kept alive the inefficiencies in the marketing and enhanced the lack of access to market.

7.6.1 Long-term Measures

The Agricultural Produce Marketing Act made provisions for the regulation, establishment and administration of markets for agricultural produce. It constituted the Market Committees in these regulated markets and entrusted it with the formulation of rules in the market yards and monitor the functioning and conduct of business. But, in the process, the APMCs are emerging as monopolistic centres and the market system is left with major inadequacies like lack of proper infrastructure (including density) to satisfactorily provide clear access to markets for all the farmers, difficulties in the mode of payment as well as storage and transport facilities in the market yards, domination of 'under-cover' Commission Agents in the operations inside the market yard and inadequate dissemination of market information to the farmers. Hence, measures have to be taken for proper monitoring of the implementation process of the provisions of the Act.

Market intervention in Karnataka through the State agencies has been at a very low key. It is taken up sporadically and at times under pressure from the farm lobby. Market Intervention Scheme, thus, requires arrangements for a permanent institution. But, the time lag between the signals originating from the distress caused due to price and the initiative of action, defeats the very purpose of the action. More than the financial constraints the MIS operations require adequate autonomy to the agencies and a business culture like that of NAFED.

Sufficient funds has to be placed with the agencies designated for administering the Market Intervention Scheme so that it can carry on its operations (procurement) as

and when the need arises without delay. It should also be ensured that these agencies are located in the market yards and APMC yards.

There has been asymmetry in the dissemination of knowledge about prices, the market and various other schemes, among the farmers. Awareness has to be created about the latest market developments among the farmers to sell their produce such that they reap the maximum benefits out of their sale. Market information has to be provided at the market itself and these information centres should be linked to the Raitha Samparka Kendras (RSKs), making the farmers well-informed of the day to day fluctuations and movements in the market.

Market imperfection is an important factor that obstructs the path to a developed marketing system. Farmers have to be encouraged by providing the necessary shield against these imperfections and safeguard their interests. Establishment of separate Commodity Boards for specific agricultural commodities can effectively circumvent the market imperfections.

7.6.2 Conclusions

Market as the invisible hand to correct the mismatch between demand and supply and act as price fixing institution depends heavily on the assumption of a well-organised institution. Unfortunately, the present day institutions in domestic market are far from efficient. The first problem crops up in terms of the infrastructure within the markets. The farmers in the sample study voiced their views about the insufficiency of the facilities provided and the operational problems in the access to these facilities. The police firing on the agitating farmers at Sira Regulated Market Yard (in which a few farmers died) in Tumkur district in the state is a case emanated from such inadequacy. The imperfection exists in weighing, grading, providing gunny bags, market cartels, interlocking of the product and the credit market and above all the elected representatives of the farmers siding the traders in the event of the disputes. The Agricultural Produce Market Committee is a politically connected organization and hence, discrimination against a group exists by design than by chance. Therefore, the inefficiencies in the functioning of the market is the main reason distancing the farmer

from the market and allowing a free hand to the middleman. This was attempted to be corrected through the Agricultural Produce Marketing Act.

The Agricultural Produce Marketing Act was created during the late sixties on the lines of the model act circulated to the State governments. Agricultural Marketing is a subject in the State list and therefore, the Act was passed by each of the State governments differently. The Act provided for better regulation of marketing of agricultural produce and the establishment and administration of markets for agricultural produce. It was amended from time to time to make it more effective. In practice, however, the law is being circumvented to accommodate the imperfections. In the letter it exists but not in spirit and this fact was reported by many of the respondents in the survey. The APMCs are more absorbed in managing the funds and their disposal. The members are rarely aware of the problems and even when they are, it is always beneficial for them to side the trader or the Commission Agent. The Commission Agent is a licensed functionary of the APMCs but in the Markets that we visited the licensed functional Commission Agents were rarely to be seen and others transacted most of the business. As a result the farmers did not get the price that they should have received legitimately. There is hardly any protection for this loss to the farmer in terms of insurance or other schemes.

Market intervention scheme was introduced way back in the late sixties in the State. But the scheme was never in its full operation in the state. Initially when the compulsory procurement was undertaken through the Rice Mills there was significant procurement in the State. After the closure of the compulsory procurement scheme the quantity procured came down gradually. In the State, the Food Corporation of India undertakes the procurement. Similarly, the scheme of Minimum Support prices is in operation in the State but there is hardly any significant procurement under the scheme. The procurement of paddy during the year of reference was less than .05 percent of the produce and that of maize was about 20 per cent of the produce. In a recent study it was clearly brought out that the market intervention schemes through MSP was ineffective in Karnataka. The sample farmers also revealed no awareness of

the MSP scheme. But in the wake of farmers unrest the State government has undertaken various steps to alleviate the situation.

Institutional innovations in the State of Karnataka include the setting up of Agricultural Commission to look into the problems of low productivity. Another important step taken was the establishment of the State Agricultural Prices Commission under the Chairmanship of an eminent agricultural economist. The APC has been assigned the tasks of advising the state government on issues pertaining to price policy, to recommend MSP for crops not covered by CACP and to analyse the agricultural price policy in the context of the state. The APC has submitted its reports to the State government. One of the important steps taken by the State government is the setting up of a special fund to finance market intervention schemes at the shortest notice. An amount of Rs 100 crores has been set-aside for this purpose. In addition to these steps, the State government has also taken steps to begin the direct farmers' markets (*Raithara Santhe*). In these markets, the farmers can directly come and sell their produce to the purchaser eliminating the role of the Commission Agent. But these markets are largely confined to vegetables and fruits and have not yet covered the grains.

REFERENCES

Acharya, S.S. (2000). Domestic Agricultural Marketing Policies , Incentives and Integration. In S.S. Acharya & D.P. Chaudhuri (eds.). Indian Agricultural Policy at the Crossroadss. New Delhi: Rawat Publications.

Bardhan, Pranab (1990). Symposium on the State and Economic Development, *Journal of Economic Perspectives*, 4 (3): 3-7.

Boeninger, Edardo (1991). Governance and Development: Issues and Constraints, *Proceedings of the World Bank Annual Conference on Development Economics*, Washington D. C.: The World Bank.

Byres, Terence J. (1997). *The State Development and Liberalisation in India*. New Delhi: Oxford University Press.

Chenery, Hollis and T.N. Srinivasan (eds.) (1989). *Handbook of Development Economics*. New York: Elsevier Science Publishers.

Datta-Chaudhuri, Mrinal (1990). Market failure and Government Failure, *Journal of Economic Perspectives*, 4 (3): 25-39.

Deshpande, R. S. (1996). Demand and Supply of Agricultural Commodities – A Review. *Indian Journal of Agricultural Economics*, 15(1 and 2): 270.

Government of Karnataka (2000). *The Karnataka Agricultural Produce and Marketing (Regulation) Act*. Bangalore: Karnataka Law Journal Publications.

Government of Karnataka (various years). *Economic Survey of Karnataka*, Bangalore: Department of Planning and Statistics, Directorate of Economics and Statistics.

Government of Karnataka (various years). *Karnataka at a Glance*, Bangalore: Department of Planning and Statistics, Directorate of Economics and Statistics.

Krueger, Anne O. (1990). Government Failures in Development". *Journal of Economic Perspectives*, 4 (3): 9-23.

Mueller, Dennis C. (1996). *Perspective on Public Choice: A Handbook*, New York: Cambridge University Press.

Satyan, B. N. (ed.) (1967). Mysore State – Chitradurga District, *Gazetteer of India*, Govt. of Karnataka.

Shleifer, Andrei. (1998). State versus Private Ownership, *Journal of Economic Perspectives*, 12 (4): 133-150.

Stiglitz, Joseph (2002). *Globalisation and its Discontents*, London: Allen Lane-Penguin Books.

Venkatachalam, L. (2003). Infrastructure and Agricultural Development in Karnataka State. Bangalore: ADRT Unit, Institute for Social and Economic Change.

World Bank (1991). *Proceedings of the World Bank Annual Conference on Development Economics*, Washington D. C. : The World Bank.