MARKET INTERVENTIONS SCHEME IN KARNATAKA: AN ANALYSIS OF ITS USEFULNESS TO THE FARMERS

Thesis Submitted to the
UNIVERSITY OF AGRICULTURAL SCIENCES, DHARWAD
In partial fulfillment of the requirements
For the award of the
Degree of

Master of Business Administration (Agribusiness)

By

RAJKUMAR .P. KOUDAL

**DEPARTMENT OF AGRICULTURAL MARKETING,
CO-OPERATION AND AGRIBUSINESS MANAGEMENT
COLLEGE OF AGRICULTURE, DHARWAD
UNIVERSITY OF AGRICULTURAL SCIENCES,
DHARWAD-580 005**

SEPTEMBER, 2005

ADVISORY COMMITTEE

DHARWAD

September, 2005

(S.B. MAHAJANASHETTI)
MAJOR ADVISOR

Approved by:

Chairman_____
(S.B. MAHAJANASHETTI)

Members:

1._____
(H.S.S. KHAN)

2._____
(H. BASAVARAJ)

3._____
(Y.N. HAVALDAR)

CONTENTS

LIST OF TABLES

LIST OF FIGURES

I. INTRODUCTION

The primary objective of any developing country is to achieve rapid, balanced and sustained rate of economic growth. In Indian context, agriculture can play a major role in the achievement of economic growth and socio-political objectives as nearly ¾ th of her population live in rural life.

Agriculture has been rightly described the backbone of Indian economy. The use of high yielding and input responsive cultivars, sound research, development of infrastructure, financial allocations and appropriate and timely policies were the prime factors behind the achievement of green revolution in India, leading to self sufficiency in food grain production and near sufficiency in oilseeds and pulses.

The contribution of agricultural sector to the GDP was about 22 per cent in the 2004-05. Agriculture industry provides employment to around 59 per cent of the total workforce in the country.

Agriculture is the main source of supply of raw material to the leading industries, either directly or indirectly, which together account for 50 per cent of income generated in the manufacturing sector in India.

Agricultural sector is the basis for the economic planning in the country. The demand for the manufactured goods depends on the purchasing power of the farmers which in turn depends on their good incomes. Prosperity of the farmers is the prosperity of industries. Agriculture growth is also an important factor in containing inflation, raising agricultural wages and for employment generation. As such, failure of agricultural front can lead to the failure in economic planning.

A wide variety of crops are grown in India as the country has diverse agroclimatic conditions. The major crops grown in India are rice, wheat, coarse grain and pulses in food grain group, and oilseeds, sugar cane, cotton, potato in nonfood grain group. Total food grain production was around 174.19 million tonnes in 2002-03 i.e., after worst recurring drought in recent decades and was increased to 212.05 million tonnes in 2003-04.

The technology change in mid sixties was a step towards meeting the food crisis that threatened food security of the country during those years. At that time it was suggested that the technological change alone may not bring the required dynamism in the growth of agricultural sector and it needs to be supported with proper institutional backup. Therefore, a series of institutional reforms were undertaken in order to supplement and induce growth in agriculture sector. As first step, land reforms were revamped to herald its second phase in early seventies. Agricultural administration and extension formed the second step in the process of institutional change. This was accompanied by strengthening the system of agricultural education. As a crucial step banking sector underwent the metamorphosis through nationalization with a renewed thrust on priority sector lending. The other forms of government interventions to promote farm prosperity included creation of infrastructure like roads, godowns warehouses, market yards, communication facilities, processing facilities etc., the efforts also included promotion of grading and standardization of farm commodities facilitating co-operative marketing etc. The most important issue that was addressed with a government intervention related to a government policy to achieve the planned growth through price incentives.

Agricultural price policy is basically aimed at intervention in the agricultural produce market with a view to influencing the level of and fluctuations in prices and price spread from the farm gate to the retail level. As the policy is required to reconcile the objectives of growth and equity, it has always occupied an important place in the economic and political debates because the perceived conflicting objectives need to be assigned weights which are often determined subjectively. Like else where, in India also, agriculture price policy and its instruments have been debated continuously and remained under constant review. Since independence, its primary role had been to observe the central objective of making available food to the consumers at reasonable prices. Till mid sixties, when new seed-fertilizer technology became available, the price policy was assigned a positive role for augmenting the availability by increasing domestic production.

In 1965, the Government of India set up Agriculture Price Commission (APC) to advice the Government on a regular basis, for evolving a balanced and integrated price structure. While formulating the price policy, the commission was required to keep in view not only the need to provide incentive to the producer for adopting the new technology and maximizing the production, but also the likely effect of the thrust of the policy to achieve the twin objective of assuring remunerative prices to the farmers and providing food grains to the consumers at the reasonable prices. It was amply made clear that the concern for consumer interest should not be allowed to take away the farmers incentive to adopt improved technology and make necessary investment for the purpose (Dantwala, 1967).

The framework of the policy was modified by the Government in 1980 when the balance between the demand for and supply of food grains was in right. The emphasis of the policy, as reflected in the revised terms of references of APC, which was later renamed as Commission for Agricultural Cost and Prices (CACP) shifted from maximizing the production to developing a production pattern consistent with the overall needs of the economy. Further, the commission was also asked to monitor the movements in terms of trade for the agriculture sector, which reflected the emerging concern for fair sharing of gains of application of technology and public investment between the farmers and consumers. The policy was reviewed in 1986 when a long-term perspective for agricultural price policy was presented to the Parliament (Government of India, 1986). It was emphasized that the policy should seek to build into the system the major factors which in the long run influence the prices of agricultural commodities for making the farm sector more vibrant, productive, and cost effective.

The price policy was again subjected to a rigorous review after a process of economic reforms was launched in 1991 and India became a signatory to the new world trade arrangement, which, for the first time, included agriculture also. The primary objective of the policy reform is stated to be to put the economy on a high growth path. The reforms package is based on the premises that higher growth is essential even to deal with the problems of poverty and attain various social objectives in a short span of time and that the economy could have grown rapidly but for the lack of incentives for efficiency (Government of India, 1993).

At present 24 commodities are covered under minimum price support programme. These include paddy, wheat, jowar, bajra, maize, ragi, barley, gram, tur, moong, urad, groundnut, rapeseed/mustard, toria, soyabean, sunflower, sesamum, niger seed, copra, cotton, jute, mesta, Virginia flue cured (VFC) tobacco and sugarcane which together accounts for 82 per cent of the gross cropped area and 75 per cent of the total value of crop output in the country. Apart from Minimum Support Price (MSP), there is a scheme called Market Intervention Scheme (MIS) for several commodities, which have not been included under the minimum price support policy as they occupy small proportion of the gross cropped area in the country. At the regional level, however, these crops are of considerable importance. For these crops, the need for price support does not arise every year in all the regions. However, once in two or three years owing to a good harvest, the prices crash and as a consequence, the tempo of increasing their production gets thwarted. The Market Intervention Scheme (MIS) of the Government of India is intended to provide price support in such cases. However, this instrument has not been used at a required scale. The crops for which this type of support is best suited include onion, potato, chillies, cumin, coriander, isabgol, fenugreek, saunf, azwain, turmeric, garlic, moth and guar. Keeping in view the flexibility in MIS as compared to that in the policy of MSP, there is a need for effective use of this instrument so long as the inter-year fluctuations in output continue to be wide. The distinguishing features of MSP and MIS are mentioned in the following table.

Table: The distinguishing features of MSP and MIS

Particulars	Minimum support policy	Market intervention scheme
Commodities	Fixed (24 commodities)	Not fixed
Regularity	Regular every year	Not regular. ad hoc
Support prices	Decided by union Government on the recommendation of CACP	Decided jointly by union and individual state government
Quantum of support purchases	All which is offered by the farmers	Pre decided limited quantities.
Applicability	Throughout the country	Specified limited markets
Time of operation	Throughout the year	Specified period
Incidence of losses, if any	Union government	Equally shared between state and union government
Infrastructure required for implementation	Large scale	Limited scale.

Initial emphasis of the Agricultural Prices Commission (APC) was on reducing the fluctuations in food grain prices in order to insulate the consumers against the price increase, providing price incentive to the producers and inducing the producers to adopt new technology. As seen earlier, during mid eighties, the emphasis of the price policy however, transformed substantially due to the subsequent changes in the agricultural economy. These changes brought forth modification in the objectives of price policy as well as its emphasis. Consequently, the focus of analytical issues also changed during this period. MSP is now viewed as a form of market intervention on the part of state and also as one of the supportive measures (safety nets) to the agricultural producers. Even though it is perfectly World Trade Organization (WTO) compatible, eyebrows are raised about its continuance and effectiveness to deal with the objectives set by its architects. The issue that dominates the current debate includes reasons for continuation of the price support scheme; its effectiveness in terms of the objectives set forth in the 1986 document and support price *vis-a-vis* remunerative price approach.

In view of the above considerations, MIS for agricultural commodities is considered one of the important tool for the farmers to combat instability in prices of agricultural produce during the time of price crash, protect the farmers from the distress sale of produce and thereby encourage them to continue with agricultural activities.

Karnataka state has a total geographical area of about 191791 sq. km. The total land area of the state accounts for 5.83 per cent of the total area of the country (32.82 lakh sq km) and ranks eighth among major states of the country in terms of size.

Karnataka has a population of about 54.74 million with the density of 275 persons per sq. km. (2001 census). During the period of 1991 to 2001 the population grew at a rate of 17.25 per cent with sex ratio of 964 females per 1000 males, the literacy rate was reported to be 67.04 per cent were by the male and female literacy rates were respectively 76.29 and 57.45 per cent respectively.

The fact that Karnataka is situated in the tropical zone made its climate warm throughout the year. The average temperature being 24^0 C comparing within state climatic

variation, northern part of the state is hotter than the southern part. The annual rainfall ranges from 466.5 mm to 4694.9 mm, the average being 1354.7 mm. Regarding soil types, most part of the state is covered by red soil, laterite soils are found in the hilly regions of the Western Ghats. The northern part of the state is covered with black soils which can retain moisture well and it is excellent for growing cotton so are often called black cotton soils.

Maize, onion, jowar, tur, potato, chilly, oilseeds, sugarcane and cotton are among the major crops grown in the northern part of state. Agriculture provides food for growing population and fodder for vast cattle stock. It is the main source of livelihood of nearly 65 per cent of population out of the total reporting area in the state 61.4 per cent was gross cropped area (2000-01 provisional report, Directorate of Economics and Statistics).

Karnataka is one of the five states with a large number of suicides among people of all professions. In the late 1990s farmers suicide rocked the state especially in the Northern Karnataka region.

Though farmers suicides have been recurring in Karnataka since 1998, what is alarming this time is the scale and spread of such incidents. Over 276 farmers have committed suicide in Karnataka within a span of five and half months from April 1st 2003. The suicides were intense between August 1st and September 12th, with an average of five suicides for every two days and are still going on unabated. The figure then rose to reach 478 on November, 10th 2003. Not only are the individual farmer committing suicide, the entire family is getting wiped out in some cases.

Successive droughts and untimely rains have seriously affected farmers for past three to four years. Crop failure due to drought, untimely rains, crop diseases, spurious seeds, substandard fertilizers and pesticides have hit at their bottoms. Price crashes have been causing further damages. Institutional credits are not reaching out to the needy as the repayment prospects are ambiguous. Input prices have been soaring; fertilizer and power subsidies are squarely scissored.

While price crashes in the market the price support policy of government will help some farmers in their states. At present 24 commodities are covered under the minimum support programme which together contributes for 82 per cent of the gross cropped area and 75 per cent of the total value of crop output in the country.

Apart from these other commodities like onion, potato, ginger, chillies, black pepper, caster red and some fruits are included under the Market Intervention Scheme. The MIS is much more flexible in terms of period of support operations, coverage of area and level of support prices, the support to the farmers under MIS is provided at a prices mutually agreed by the centre and the state in the specific area during the predefined period. The centre and the state share the losses if any equally.

The state of Karnataka has evolved a scheme called the Floor Price Scheme (FPS) through which a revolving fund of Rs.100 crores has been mobilized by equal contributions from the state government and market committee. The money available in the revolving fund is not only utilized to supplement the MSP operation of the Government of India, but also to procure commodities that are not covered under the MSP scheme.

In the year 2004-05 commodities like onion and maize have been procured in the state under FPS with worth of 6.58 and 48 crores respectively.

The Agricultural policy Resolution of the Government of Karnataka stresses to bring in “Price and Market reforms” in the Agricultural sector of the state. Para 36 of the policy resolution reads as follows.

“On pricing of produce, the broad policy of the state would be to go by the overall demand and supply conditions. This would be combined with the policy of providing a minimum support price, which would act as an insurance against any sudden and precipitous fall in price level”.

Objective of the scheme is to protect the farmers against distress sale of agricultural/ horticultural commodities by calling a minimum support price.

The scheme shall be known as “Floor price scheme for Agricultural /Horticultural commodities in Karnataka”.

Applicability of the scheme

1. The scheme shall be applicable in the whole state of Karnataka for agricultural and horticultural produce.
2. To start with, the scheme shall be applicable to onion and potato grown in Karnataka and may be extended at and when considered necessary by Government notification to cover other agricultural and horticultural commodities which are not covered under MSP scheme of Government of India.
3. The floor price scheme shall be operated in co-ordination with the MSP scheme for such commodities, which are covered under MSP of Government of India.

The following agencies will enter the market and purchase agricultural and horticultural commodities whenever they are asked to do so by the state level committee.

i. Karnataka state co-operative marketing federation Bangalore
ii. Horticultural producer's co-operative marketing society ltd. Bangalore
iii. Karnataka Horticultural producers co-operative marketing and export society ltd. Hubli.
iv. Karnataka Agro Industries corporation Ltd Bangalore
v. Karnataka Food and Civil supplies corporation Ltd. Bangalore
vi. Taluk Agricultural produce co-operative marketing societies.
vii. Karnataka co-operative consumers federation Ltd. Bangalore
viii. Karnataka co-operative Agricultural produce export co-operative Bangalore.
ix. Karnataka Co-operative oil seeds growers Federation Ltd. Bangalore
x. Karnataka state Agro corn products limited Bangalore.

After the initiation of market intervention scheme in Karnataka its performance study has not been done, hence this study has been undertaken

The present study focuses on the effectiveness of the market intervention scheme and analysis of its usefulness to the farmers on various parameters of the agricultural marketing. These parameters include coverage of farmers, extent of production procured, socio-economic factors of farmers choice, and constraints faced by the farmers. The study is expected to highlight the factors responsible for the success of MIS as a tool of price policy, as well as the parameters responsible for its failure.

This study also helps the policy makers to ascertain the future requirements. In this context, the present study was taken up with the following specific objectives.

1. To analyze the extent of coverage of farmers under MIS for the selected crops.
2. To examine the socio economic factors influencing farmers choice between the sale under MIS and open market sales.
3. To assess the extent of production procured under MIS and examine the constraints faced by the farmers in availing the MIS benefits.
4. To compare the net price received by the farmers from MIS and open market sales.
5. To suggest the policy measures to improve the operations of MIS.

II. REVIEW OF LITERATURE

In this chapter the research work done in the past that has relevance to the present work has been reviewed and presented under the following sub-headings.

2.1 Studies related to procurement of agricultural produce by the government agencies

2.2 Costs and returns for agricultural produce associated with alternative marketing channels

2.3 Use of discriminant function as an analytical tool

2.1 STUDIES RELATED TO PROCUREMENT OF AGRICULTURAL PRODUCE BY THE GOVERNMENT AGENCIES

Reddy and Sharfuddin (1984) examined the performance of co-operative milk societies in relation to milk procurement in Karnataka. The study reported that milk procurement is more in flush season (Oct- Mar) compared to lean season (April – Sept). It was found to be true and flush to lean ratio was 3.28, which was significant at 5% level. In addition to this, to analyse the supply of milk trend, a regression model was adopted. The reported value for intercepts a and b were 91.8 and 6.80 respectively which represented a decreasing trend.

Radhakrishna and Indrakant (1988) showed that in Andhra Pradesh, a rice surplus state, the procurement prices varied from 62 per cent to 90 per cent of the wholesale prices of rice. The procurement price as a percentage of the all India wholesale open market price averaged 41 per cent for rice and 79 per cent for wheat during 1966/67-1986/87 period.

Singh *et al*. (1993) studied potato prices during post harvest period in Jalandar district of Punjab and their role in determining farm income. On account of wide fluctuations in the prices, he pleaded for the announcement of support prices, among other things, to help the farmers.

Ajit Mohan Kumar Singh (1998), reported that the study of HOPCOMS, showed that, the optimum procurement pattern of tomato and onion in southern Karnataka showed little variations from month to month and relatively higher prices were observed during the month of September through December, the purchases were found to be lower in the subsequent months.

Jagadish Alse (1998) studied the management appraisal of agri-business unit : A case study of central arecanut and cocoa marketing and processing co-operative ltd (CAMPCO), and concluded that the quality arecanut procured by the CAMPCO through different channels were as follows

Channel I : Growers – CAMPCO

Channel II : Growers - Grower societies – CAMPCO

Channel III : Commission agent – CAMPCO

Among the three channels of procurement of arecanut, channel I formed the major proportion (63.6%) of total procurement followed by channel II (19.87) and channel III (16.6%) over the study period (1992-93 to 1996-97).

Praduman Kumar *et al*., (1998) in their study on management of export marketing of horticultural products, present status, constraints and future strategies concluded that the NAFED procures onion from mandies in the major growing states of Maharashtra, Gujarat, Andhra Pradesh and Tamil Nadu through open auctions. It does not enter into contractual arrangements with the farmers for the supply commitments through open market purchase.

Mishra *et al*., (2002) studied the procurement trend of cotton by different agencies in Kalahandi district of Orissa and found that the Cotton Corporation of India (CCI) had procured a share of 23.03 per cent of the total produce in 1995-96 and Cotton Co-operative Marketing Federation of Orissa procured less than 15 per cent in subsequent years. The remaining 85 per cent was procured by private traders.

Tomar and Arjun Singh (2002) in their study on marketing of wheat and rice in Haryana suggested that to minimize the food subsidy, in addition to announcing MSP for procurement of food grains, the government should invest on creating marketing infrastructure in the states producing surplus food grains and farmers should be encouraged to store their produce in public and private godowns.

2.2 COSTS AND RETURNS FOR AGRICULTURAL PRODUCE ALTERNATIVE MARKETING CHANNELS

Thakur and Singh (1971) in their study on market supply and prices of onion in important markets of Punjab, identified the following channels.

Producer – village merchants/wholesaler – retailer – consumer;

Producer – commission agent – wholesaler – retailer – consumer and producer – consumer.

Raghubansi *et al*., (1975) studied important channels for marketing fresh ginger and dry ginger. They found that the sales through different agencies namely, primary wholesaler, commission agent, retailer and direct to consumer formed 72.81, 20.93, 6.02 and 0.24 per cent of the total sales, in that order.

Ravi (1975) examined the marketing of coconut and copra in Arasikere and Tipture regulated markets of Karnataka. He reported that 66.20 per cent of the producers disposed their produce through village merchants, 16.20 per cent through commission agents, 6.8 per cent directly to wholesalers in village mandies and remaining 10.8 per cent of the produce sold through more than one channel.

Goverdhan (1978) found that in Karnataka 41.67 per cent of the chilli growers disposed their produce through commission agents and 26.67 per cent through co-operative societies. Among the rest 23.33 per cent used both commission agent and co-operative society and only 8.33 per cent were used cooperative society as well as to traders.

Anonymous (1980) while studying marketing of onion in Coimbatore identified two marketing channels as follows

Producer – village trader – commission agent – wholesale trader – retailer

Producer – commission agent

Hugar (1980) in a study conducted on marketing of vegetables in Belgaum city, identified the following marketing channels for vegetables.

1. Producer – Wholesaler – Retailer – Consumer
2. Producer – Co-operative Society – Retailer – Consumer

He observed that out of the total quantity marketed, share of commission agents was 42.80, 83.99 and 100.00 per cent in the case of cabbage, brinjal and tomato respectively, and the share of co-operative society was 57.20, 16.01 and 0.00 per cent in that order. This showed the dominance of commission agent in the sale of total vegetables in the market over co-operative society.

Karisomangoudar (1990) found that producer's share of the consumer rupee in the marketing of onion varied from channel to channel. In channel I (Producer - village level trader – wholesaler – retailer - consumer) and channel II (Producer – wholesaler - cart vendor - consumer) and channel III (producer - commission agent – wholesaler – retailer - consumer) producers net share was 43.26, 61.85 and 64.36 per cent respectively in Gadag market. Farmers in channel I got the lowest net price when compared to second and third channel of Gadag.

Krishnaiah (1998) conducted a study on an empirical analysis of cotton marketing in Warangal district of Andhra Pradesh. He found that net price received by the producers under different market intermediaries were as follows.

1. Net price received by the producer from commission agent was Rs.710/qtl.
2. Net price received by the producer from village market was Rs.700/qtl.

3. Net price received by the producer from trader was Rs.705/qtl.

4. Net price received by the producer from CCI was Rs.792.83/qtl.

5. Net price received by the producer from miller was Rs.785.40/qtl.

Soni and Ahmed (1992) studied production and marketing of tomato in tribal area of district Sidhi (M.P.) and observed that the overall average total cost worked out to be Rs.19.00/qtl in tomato the net price received by the producers was Rs.187.50 /qtl.

Singh (1992) in his study on marketing of maize in Intermediate zone of Jammu and Kashmir found that the most common existing marketing channel was "producer – processor – retailer – consumer" and concluded that the net price received by the producer was Rs.198.00 per quintal and the total marketing cost was Rs.5.99 per quintal.

Shyamsunder *et al*., (1995) identified four important marketing channels of onion in Chikkballapur market viz.,

Channel I - Producer – village level trader – wholesalers – retailer – consumers ;

Channel II - Producer – wholesaler – retailer – consumer and

Channel III - Producer – commission agent – trader – trader cum retailer – consumer

The results indicated that producers got the highest net price per quintal in channel II (Rs.163.57) and lowest in channel I.

Marothia *et al*., (1996) conducted a study on vegetables marketing: A case study of two markets in Chattisgarh region of Madhya Pradesh. The study was conducted at Shastri market of Raipur district and Subhash Market of Durg district. The two marketing channels identified in the study area were

Channel I - Producer - seller– commission agent – retailer - consumer

Channel II - Producer – seller – consumer

In case of tomato in Shastri market Raipur the net price received by the producer was high in channel II (Rs.169.54) compared to channel I (Rs.100.59) and total marketing cost was high in channel II (Rs. 23.89) compared to channel I (Rs.20.78). Also in case of Subhash market of Durg district for tomato, the net price received by the producer was more in channel II (Rs.161.87) as compared to channel I (Rs.100.69) and total marketing cost in channel II (Rs.26.55) was high as compared to channel I (Rs.17.22).

Awadesh Kumar *et al*., (1997) in their study on marketing efficiency of potato : A case study of Allahabad district Uttar Pradesh, identified the major marketing channels of potato as follows :

Channel I - Producer – consumer –

Channel II - Producer – village traders – wholesaler – retailer – consumer

Channel III - Producer – wholesaler – retailer – consumer

The net price received by producer was high in channel III (Rs.122.10) followed by channel I (Rs.108.00) and channel II (Rs.106.00).

Mali, *et al*., (1997) studied the marketing of ber in Maharashtra and concluded that there were five marketing channels of ber and the net price received by the producer was more in channel I (producer – co -operatives-commission agent – retailer consumer) compared to channel II (Producer – commission agent – retailer consumer). The per quintal price realized was Rs.757 and Rs.744 from channel I and channel II and the expenses incurred by the producer were to the extent of 19 and 18 per cent of price realized respectively.

Kerur *et al*., (1998) studied the efficiency of sunflower marketing channels in North Karnataka. They identified the three important marketing channels were as follows

Channel I - Producer – seller – village merchant – commission agent – wholesaler – oil miller

Channel II - Producer – seller – commission agent – wholesaler – oil miller

Channel III - Producer – seller – oil miller

They also observed that producers got the highest net price per quintal in channel III (Rs.1338.24) and lowest in channel I (Rs.1176.00).

Gupta and Singh (1998) in their study on price spread in marketing of Groundnut, Rapeseed and mustard in Punjab, identified the four important marketing channels of groundnut in Ahmedgarh market :

1. Producer – wholesaler – consumer
2. Producer – wholesaler – roaster – retailer – consumer
3. Producer – roaster – retailer – consumer
4. Producer – miller

They concluded that the net price received by the producer was same in all the four channels that is Rs.1227.50 per quintal and also the total marketing cost was Rs.24.56 per quintal in all the four marketing channels.

Singh *et al*. (1999) studied the marketing of tomatoes in Hoshiarpur district of Punjab and observed that the net price received by the farmers was higher (Rs.172.50) when sold in local market as compared to the processing units. Similarly, the per acre net returns obtained by farmers was also higher when the produce was sold through local market (Rs.24,150 /acre) than those sold to Pepsi foods (Rs.20,8081/acre) and Nijjar agro foods, even though the marketing costs were higher in local market.

Mahesh Chidri (1999) studied the management of agro processing industries in Karnataka : A case study of tur dal industry and observed that the total cost incurred by the tur processing units was Rs.2808.60. It was found that the overall average cost was more in small processing units, (Rs.2810.67) compared to large processing units (Rs.2794.52). The overall average net returns worked out to be Rs.53.66 and it was more in large units (Rs.67.97) than in small processing units (Rs.39.40).

Balappa (2000) studied the economic performance of production, marketing and export of vegetables in north Karnataka. He observed that the overall average total cost worked out to be Rs.202.45 per quintal in onion, of which cultivation cost (Rs.147.00/qtl) was higher than its marketing cost (Rs.55.45/qtls). The per quintal gross returns for the study area worked out to be Rs.420.68 resulting in a net returns of Rs.286.34/qtl.

Pant and Shyoraj (2004) in their study on marketing of maize in Rajasthan, identified nine marketing channels; They were farmers to consumer; Farmer – village trader - consumer; farmer-village-trader-retailer - consumer; farmer - village trader - commission agent cum wholesaler – retailer - consumer; farmer - commission agent cum wholesaler - govt. agency; farmer – commission agent cum wholesaler - flour mill - retailer – consumer; farmer – flour mill – retailer – consumer; farmer - commission agent cum wholesaler – consumers in other mandies of Rajasthan; farmer – retailer – consumer; and concluded that the net price received by the farmers were more if farmers sold under channel V compare to other channels.

2.3 USE OF DISCRIMINANT FUNCTION AS AN ANALYTICAL TOOL

The present study seeks to employ discriminant analysis to analyse socio economic characteristics that influence farmers choice between open market sale and MIS sale. Thus, a few studies that used this technique are reviewed here under

Sarup and Pandey (1982) examined the socio-economic characteristics discriminating the fertilizer users from non-users in Cuttack district of Orissa with the help of discriminant function technique. The sample size of the fertilizer users and non-users was 74 and 36, respectively.

Ramesh Chand and Sidhu (1985) used Linear discriminant function to classify farmers into defaulters and non defaulters in Punjab. The defaulters with higher size of

operations holding, higher capital expenditure, lower levels of education, higher ratio of dependents in the family, high consumption expenditure and net cash income were more prone to be willful defaulters and reverse was true for non-willful defaulters.

Eshwarprasad (1987) employed linear discriminant function while assessing the impact of integrated rural development programme in Anantpur district, Andhra Pradesh for the period from 1981-82 to 1984-85 to discriminate the respondents from the above the poverty line and vice versa based on certain attributes. The study indicated that of all respondents groups. The per capita income emerged as a major discriminating factor which discriminates the respondents economic status.

Kalyankar and Rajmane (1987) used linear discriminant function to predict whether a crop loan defaulter was likely to be a willful or non-willful defaulter for District Central Co-operative Bank in Parabhani district of Maharashtra. The variables considered were operational size of holding, proportion of cash crop, family consumption expenditure, gross income from agriculture and initial amount of loan. They concluded that the 'Z' value is more than critical mean value, then the defaulter will be predicted as willful defaulter and if it is less, then he is likely to be non-willful defaulter.

Singh (1992) pointed that, out of a random selection of 100 borrowers of dairy loans from the Bhokpur – Rohtas Grameen Bank in Bihar State, India, 73 borrowers were found to be defaulters. Of the total defaulters, 39 were classified as willful and 34 non-willful defaulters using discriminant function of analysis incorporating socio-economic characteristics. The results indicated that per capita expenditure on milk and milk products were the most important factor discriminating the non-willful defaulters from the willful defaulters. This was followed by expenditure as a proportion of total income, educational status and number of dairy animals.

Reddy (1993) discriminant analysis using variables which constituted different dimensions of the performance of co-operative agricultural and rural development banks (PCARDDBs) to classify the districts of Karnataka into relatively high and low performance districts were characterized with higher mean value (average of 15.63) with respect to all indicators compared with low performing districts (average of 7.41), it was also seen that the contribution of these indicators to the distance between the two groups was high with respect to the distance between the two groups was high with respect to working capital (49.69 %), deposits (32.85 %) and loan overdue (26.49%).

Hosamani (1995) employed discriminant function to discriminate between willful and non-willful defaulters for Malaprabha Grameen Bank, in Dharwad district Karnataka. The variables considered were education, family size, income level, family expenses and amount of over dues. Among these, education and income levels were the two important characteristics, which explained the major proportion of the variation in discriminating the willful and non-willful defaulters.

Pandey and Muralidharan (1997) in their study, used discriminant function to develop a criterion for classifying borrowers according to their willingness to repay the loans on the basis of differences in their socio-economic characteristics in Banda district of Uttar Pradesh Literacy, percentage of income from sources other than the crop production, total income, operational size of holding and percentage of cash expenditure were the major characteristics which classified defaulters into willful and non-willful groups.

The variables considered were area of owned land, leased in land, area under HYV, quantity of plant protection measures, quantity of organic manure, member of persons dependent wholly on farm, amount of loan borrowed previous loan outstanding etc. He concluded that innovative attitude of farmers in terms of adoption of high yielding variety, plant protection measures and availability of short-term credit during the crop season were the important discriminating factors between fertilizer users and non-users.

Lekshmi *et al*. (1998) attempted to identify the characteristics responsible for default with particular reference to crop loans in Alappusha district of Kerala, for this, a two stage random sampling method was employed for sample selection with branches of the lead bank as primary units and borrowers as secondary units. Linear discriminant function was the analytical tool employed for the study and concluded that market surplus, time of sowing and

credit gap were the major characteristics which discriminated the borrowers of crop loan into defaulters and non defaulters.

Krishna (2000) used discriminant function to discriminate the good and lower performing banks, based on their characteristics namely, employee per branch, income to expenditure ratio, credit deposit ratio and borrowings and their discriminating power were 55.16, 12.70, 14.12 and 17.96 per cent respectively towards the total discrimination.

Patil (2000) used discriminant function to discriminate the defaulters into willful and non-willful defaulters based on four characteristics namely, education, size of the farm, income and family expenditure. Among these four important characteristics discriminating the two groups, expenditure and income were found to be contributing to the extent of 36.56 per cent and 31.06 per cent, respectively towards the total discrimination.

Ramappa (2003) used discriminant function to discriminate between loose milk buyer and packed milk buyer based on their characteristics namely, expenditure on milk and milk products, expenditure on non-food products and income group, which were found to have discriminating powers were 40.14, 39.84 and 20.02 per cent, respectively towards the total discrimination.

III. METHODOLOGY

This chapter deals with the description of the study area, sampling procedure adopted, method of survey, nature and sources of data and various tools and techniques employed for analyzing the data.

3.1 STUDY CROPS AND STUDY AREA

3.1.1 Selection of crops

For the present study two prominent crops (one cereal crop and one vegetable crop) covered under MIS in the state *viz*., maize and onion were considered. Over years maize has ranked first among the cereals in terms of the quantity procured under MIS. As for onion it was covered under the scheme only in 2004-05, and it ranked next only to maize in terms of procured quantity

3.1.1.1 Importance of maize crop

Maize is one of the important coarse cereal crops grown in different agro-climatic conditions of India. Maize ranks third next to wheat and rice in the world with respect to area, while its productivity surpasses all other cereal crops. Maize is grown in 70 countries of the world. The major maize growing countries are USA, China, Brazil, Mexico, France, India, Argentina and Indonesia.

In Karnataka, Maize crop, grown in a total area of 6.6 lakh hectares (3.2 lakh hectares is irrigated and 3.4 lakh hectares of dry land), is the largest cereal crop next to the paddy (13.74 lakh ha) and sorghum (20.85 lakh ha) in Karnataka. However, as regards production, maize ranks third among the cereals with an annual production of 16.9 lakh tonnes. In terms of yield, Karnataka ranks first in India with 2.79 t/ha. The major maize growing districts during 2003-04 in Karnataka were Davanagere, Dharwad, Belgaum, Haveri, Bagalkot, Bellary and Chitradurga.

In Dharwad district area under Maize was 18,971ha and production was 53,129 tonnes during 2002-03.

3.1.1.2 Importance of Onion Crop

Onion is an important crop in all continents and is commercially cultivated in a little over hundred countries of the world. However about three-fourth of global production is accounted by 18 countries, important of which were china, India, Russia, Japan, Spain, turkey, Brazil, Egypt etc.

India is the second largest producer of onion in the World, next to china, accounting for 16 percent of the world area (2.69 million ha) and 10 percent of the world production (46.06 million tons) (Anonymous, 2002).

Karnataka occupies an area of 1.75 lakh ha. with a production of 7.2 lakh tonnes and the average productivity is 6.0 tonnes per ha.

In Gadag district area under onion was 23877 ha with the production of 133567 tonnes and the average productivity was 5.6 t/ha.

3.1.2 Location and General Description of the Study Area

The study was conducted with respect to two northern districts of Karnataka namely Dharwad and Gadag. Specifically, Dharwad district was considered for maize crop, while Gadag district was considered for onion crop, as these districts are the important producers of the study crops, where major procurement operations took place. Dharwad district is bound by Belgaum, Haveri, Gadag and Uttar Kannada district in north, south, east and west respectively.

Dharwad district comprises 14 hobalis. These hobalis fall in 5 taluks of the district. The total area of the district accounts for 2.2 per cent of the total area of the state. The district consists of 372 villages of which 362 are inhabited.

Gadag district is also situated in the northern part of Karnataka State. This district is one of the three new districts of Karnataka that were carved out the erstwhile Dharwad district in November 1998. It is surrounded in the east by Koppal district, in the northwest by

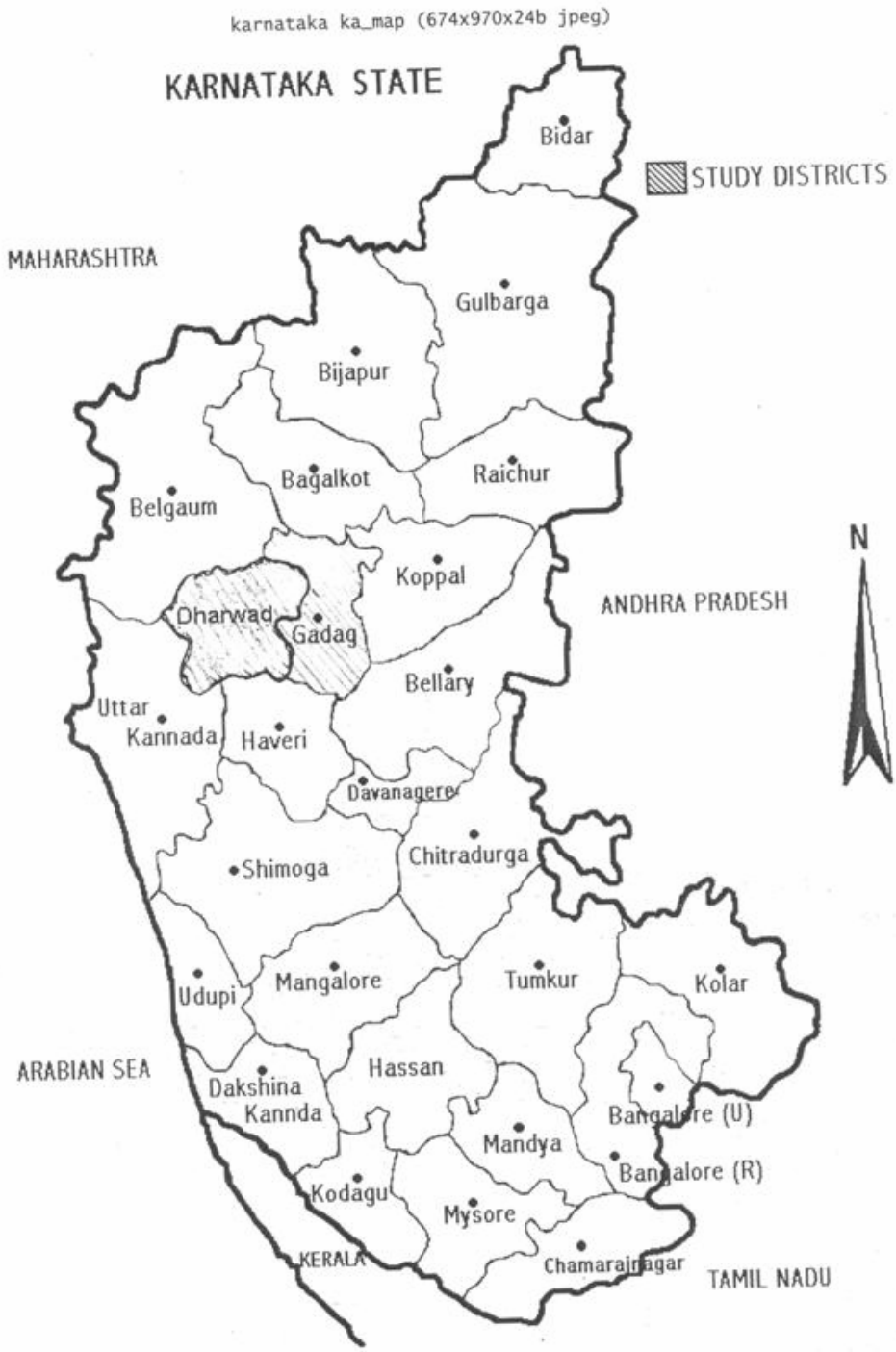

Fig. 3.1 MAP OF KARNATAKA STATE SHOWING STUDY AREA

Fig.3.1: MAP OF KARNATAKA STATE SHOWING STUDY AREA

Table 3.1 Demographic features of the study area

Sl. No.	Particulars	Dharwad district	Gadag district
1	Geographical area (Ha)	426300	465715
2	Number of inhabited villages (No)	375	330
3	Total population in (00's)	16037.94	9720
4	Rural population (00's)	7220.68 (45.02)	6300 (64.81)
5	Urban Population (00's)	8817.26 (54.98)	3420 (35.18)
6	Male population (00's)	8234.15 (51.34)	4937.95 (50.80)
7	Female population (00's)	7803.79 (48.66)	4781.60 (49.19)
8	Population density (Persons/sq.km)	322	184
9	Male literates (%)	70.53	71.6
10	Female literates (%)	54.17	39.7
11	Normal rainfall (mm)	772	612.7
12	Area under forest (Ha)	35235 (8.24)	32614 (7.00)
13	Net sown area (Ha)	331066 (77.47)	392790 (84.34)
14	Area sown more than once (Ha)	170970 (40.00)	49643 (10.65)

Figures in Parenthesis indicate percentage to the respective particulars

Source : District at glance (2002-03) of the study districts

Belgaum district, in the west by Dharwad district, in the north by Bagalkot district, in the Southwest by Haveri district, and in the south by Bellary district.

There are 5 taluks in the district comprising 330 villages, 2 Hobali and 7 towns.

3.1.3 Population and literacy

Some basic statistics of Dharwad and Gadag district as per 2001 census are provided in Table 3.1. The total Population of the Dharwad district is 1603794 of which 823415 (51.34%) are males, 780379 (48.66%) are female as per census. Out of these 722068 (45.02%) people live in rural areas and 881726 (54.98%) in urban areas. Of the total population 62.57% are literate. Among the literates, male population accounts for 70.53 per cent, while the female population accounts for 54.17 per cent.

The total population of Gadag district as per 2001 census is 972000 of which 493795 (50.80%) are males, and 478160 (49.19%) are females. Out of these, 629994 (64.81%) people live in rural areas and 341961 (35.18%) in urban areas. Of the total population 62.27% are literate. Male population accounts for 71.6 per cent of literates.

3.1.4 Climate, rainfall and soil types

Moderate rainfall occurs during the months of June, July and August in the study area. April and May are the hottest months. Southwest monsoon sets at the beginning of June every year and extends till the month of September. The average rainfall in Gadag district is 612.7 mm while it 772 mm in Dharwad.

The soils are classified as black, medium black and red soil. The black soil that covers most of the districts is best suited for the cultivation of cotton, groundnut, wheat, maize and onion.

3.1.5 Land utilization pattern

Table 3.1 presents some important aspects of the agricultural economy of the study districts.

Total geographical area of Dharwad district is 427000 ha of which net sown area occupied 77.47 per cent followed by area sown more than once 40 per cent while area under forest is 8.24 per cent.

The total geographical area of Gadag district is 465715 ha of which net sown area occupied 84.34 per cent followed by area sown more than once 10.65 percent, while area under forest is 7 per cent.

3.2 SAMPLING PROCEDURE

3.2.1 Selection of the study area

Dharwad and Gadag are the major maize and onion growing district respectively in Karnataka. Due to severe fall in the market prices of these two crops, considerable procurement operations were taken up under MIS in these districts. Thus, these two districts were considered for the present study specifically Dharwad district was selected for maize and Gadag for onion.

3.2.2 Selection of the sample taluks

The taluka wise information relating to the procurement of maize and onion during 2004-05 was obtained from the offices of the Assistant Director of Agricultural Marketing in Dharwad and Gadag districts. Based on the magnitude of taluka wise procurement of crops in the respective districts during 2004-05. Dharwad and Navalgund taluks were selected in Dharwad district for maize, and Gadag and Mundargi taluks were selected in Gadag district for onion. These details are presented in table 3.2.

3.2.3 Selection of the sample villages

From each taluk in each district top two villages accounting for maximum procurement were selected in the next stage, based on the information provided by the office of the Karnataka state food and civil supplies corporation, Dharwad and the office of the Karnataka state Agricultural Co-operative Marketing Federation, Gadag. Thus, a total of eight villages were selected for the study, four each from Dharwad district and Gadag district.

Table 3.2 Distribution of Sample Farmers

District	Sample taluks	Sample villages	Number of respondents who sold the produce		Total number of respondents
			Under MIS market	In open market	
DHARWAD	DHARWAD	Narendra	30	30	60
		Navalur	30	30	60
		Sub total	60	60	120
	NAVALGUND	Arekuratti	30	30	60
		Yamnur	30	30	60
		Sub total	60	60	120
	Total sample size in Dharwad district		120	120	240
GADAG	GADAG	Hulkoti	30	30	60
		Mulgund	30	30	60
		Sub total	60	60	120
	MUNDARGI	Doni	30	30	60
		Dambal	30	30	60
		Sub total	60	60	120
	Total sample size in Gadag district		120	120	240
Grand total			240	240	480

3.2.4 Selection of the sample farmers

With the help of village accountant the total number of farmers in each village growing the study crop in 2004-05 was ascertained. The village accountant also furnished information on the total number of small farmers, who grew the study crops. In addition, the village accountants provided the lists of all the maize and onion growers who availed MIS benefits. This list also distinctly showed small farmers among the total number of beneficiaries. With this information, a random sample of 30 farmers who availed MIS benefit and another 30 farmers who did not avail MIS benefits was selected to analyse the socioeconomic characteristics responsible for such distinctions. Thus, at the rate of 60 farmers per village, as many as 240 farmers were selected from each district. For the two districts together the sample included 480 farmers.

3.2.5 Collection of data

The primary data were collected from the head of the each selected household by personally interviewing them with well structured comprehensive questionnaire. The respondents were fully convinced about the purpose of the research study and the practical utility of the findings. Each one of them was interviewed leisurely and informally, and the necessary information was collected for the agricultural year 2004-05.

The data elicited covered the issues like, educational level of the respondents, size of the family, level of production, total income of the family, distance from procurement center, size of the holding, cropping pattern, marketing information and constraints faced by the farmers in availing the MIS benefits. The secondary data were also collected from the offices of assistant director of agricultural marketing, district statistical office, different procurement agencies (TAPCMS, KSFCS, Marketing federation and Gadag cotton sales society) and concerned village accounts, regarding the selection of the area, farmer respondents, total production and description of the study area *etc*.

3.3 TOOLS AND TECHNIQUES EMPLOYED IN THE STUDY

For the purpose of accomplishing the objectives of the study, data were analysed using the following techniques.

3.3.1 Tabular presentation

Cost of production, procurement price and market price were worked out and presented in the tabular form using averages, percentages and the ratios.

Further, the constraints faced by the farmers in availing the MIS benefits, and the problems in production, storage, transportation and marketing were documented using tabular analysis.

3.3.2 Discriminant function analysis

Discriminant function analysis is used to discriminate between two or more classes of persons or objects on the basis of characteristics, which are thought to be relevant. The analysis helps to identify the socio-economic factors that would help discriminate between the group of the farmers that sold the produce to the procurement center and the group that did not avail MIS benefits. This analysis also helps to assess the relative importance of different variables with regards to their power to discriminate between the groups.

The discriminant functions was mathematically represented as;

$$Z=L_1X_1+L_2X_2+----------+L_nX_n$$

where

Z= total discriminant score of a farmer

X_1 ----------X_n= Characteristics of the respondents

L_1 ---------- L_n = linear discriminant coefficients.

The socio economic characteristics hypothesized to influence the choice between procurement sale and open market sale included age, education, income, level of production and distance from procurement center.

In the present study stepwise discriminant analysis was used to retain the model that included significant variables based on the 'F' value. A separate discriminant function was estimated for onion and maize to examine if the nature of the crop would indicate different sets of socioeconomic characteristics as the determinants of the choice between two types of sale. The overall significance of the estimated discriminant function was tested with the help of Fisher's 'F' statistics, where 'F' is calculated as

$$F = \frac{R^2 (n-p-1)}{(1-R^2) (p)}$$

where

$$R^2 = \alpha\, \theta\, \frac{(n_1\, n_2)}{(n_1+n_2)}$$

$$\alpha = S^{-1}\,\theta$$

$$S = \begin{pmatrix} \sum X_1 & \sum X_1 X_2 \\ \sum X_1 X_2 & \sum X_2 \end{pmatrix}$$

$$\theta = \begin{pmatrix} X_{11} - X_{12} \\ X_{21} - X_{22} \end{pmatrix}$$

Where,

p = Number of variables considered in the function

n_1 = Number of farmers procurement centre sale

n_2 = Number of farmers open market sale

The value of 'F' is tested at p and $(n_1 + n_2 - p-1)$ degree of freedom.

DEFINITIONS

1. Support price: The government give a guarantee that they will purchase the commodities offered by the farmers at the announced support price in case the market price tend to fall below support price due to the bumper production. These prices are in the nature of a long-term guarantee to enable farmers to pursue their efforts to increase production. Thus, support prices maintain the tempo for adoption of new technology by the farmers.
2. Statutory Minimum price (SMP): It is legally binding on the buyer or miller to purchase the commodity at least at the announced price,. SMP is applicable to crops such as sugarcane and jute where the buyers are few. To avoid the exploitation of farmers through a monopsony or oligopsony situation, statutory status is granted to Minimum Support price.
3. Issue Price: These are the prices at which the Govt. provides certain specified commodities in the minimum needed quantity to the consumers. Issue prices are generally lower than Market price.
4. Fair average quality (FAQ): Fair average quality of the commodity means the fair average quality standard prescribed for agricultural commodities by the competent authority of the government of India. For those commodities for which there are no FAQ standards prescribed by the GOI, state level committees (SLC) shall prescribe the standard in consultation with agricultural and horticultural departments.
5. Floor Price (FP): A price declared by the SLC as a minimum price for a commodity having the prescribed FAQ standards. This is for the purchase of commodities not covered under MSP scheme of GOI.
6. Purchase Agency (PA): The agency recognized by the SLC and authorized to purchase the specific agricultural / horticultural commodities under this scheme.

IV. RESULTS

The results of the study are presented under the following headings

4.1 The extent of coverage of farmers under MIS for the selected crops.

4.2 The socio economic factors influencing farmers choice between sale under MIS and open market sales.

4.3 The extent of production procured under MIS and the constraints faced by the farmers in availing the MIS benefits

4.4 Net price received by the farmers from MIS and open market sales.

4.1 THE EXTENT OF COVERAGE OF FARMERS UNDER MIS FOR THE SELECTED CROPS

4.1.1 Coverage of farmers under MIS in Gadag district for onion crop

Table 4.1 shows that the total number of onion growers in the four sample villages in Gadag district was 3200 of which a total of 1044 farmers were covered under market intervention scheme which meant a coverage of 32.62 per cent of the total farmers. Also, a total of 904 small farmers were covered under market intervention scheme, which meant a coverage of 52.95 per cent of the total number of small farmers (1707). In Gadag taluk, the coverage of small farmers was 59.95 per cent. In the four sample villages, the coverage of small farmers under MIS was maximum in Doni village of Mundargi taluk (73.79%), followed by Mulgund in Gadag taluk (60.50 %), Hulkoti in Gadag taluk (58.33%) and Dambal in Mundargi taluk (43.15%).

Table 4.1 : Coverage of Farmers under MIS in Gadag District in respect of Onion crop

Sample Taluk	Sample Village	Total No. of onion growers		MIS benefits availed by	
		Small farmers	Farmers in all categories	Small farmers	All categories
(1)	(2)	(3)	(4)	(5)	(6)
Gadag	Hulkoti	120	150	70 (58.33)**	70 (46.66)*
	Mulgund	347	1200	210 (60.50)**	350 (29.16)*
	Sub total (A)	467	1350	280 (59.95)**	420 (31.11)*
Mundargi	Doni	290	350	214 (73.79)**	214 (61.14)*
	Dambal	950	1500	410 (43.15)**	410 (27.33)*
	Sub total (B)	1240	1850	624 (50.32)**	624 (33.72)*
	Total (A+B)	1707	3200	904 (52.95)**	1044 (32.62)*

Note: * [Column (6) / Column (4)] x 100
** [Column (5) / Column (3)] x 100

4.1.2 Coverage of farmers under MIS in Dharwad district for maize crop

Table 4.2 shows that the total number of Maize growers in the four sample villages in Dharwad district was 1103 of whom a total of 636 farmers were covered under market intervention scheme which meant a coverage of 57.66 per cent of the total farmers. Also, a total of 402 small farmers were covered under market intervention scheme, which meant a coverage of 51.73 per cent of the total small farmers. In Navalgund taluk the coverage of small farmers was 58.60 per cent and in Dharwad taluk it was around 39 per cent of the four sample villages the coverage of small farmers under MIS was maximum in Arekuratti village of Navalgund taluk (59.16%), followed by Yamnur in same taluk (57.14 %), Navlur in Dharwad taluk (47.00%) and Narendra in Dharwad taluk (35.02%).

4.2 THE SOCIO ECONOMIC FACTORS INFLUENCING FARMERS CHOICE BETWEEN SALE UNDER MIS AND OPEN MARKET SALES

4.2.1 For onion crop

The estimated discriminant function with all the five explanatory variables was as follows

$$Z = 0.761 - 0.027 \times AGE + 0.035 \times EDU + 0.034 \times DIST + 0.042 \times PROD - 0.060 \times TINC$$

where,

AGE = Age of the farmers

EDU = Education level of the farmers

TINC = Total income of the farmers

PROD = Level of production

DIST = Distance from procurement center

Table 4.2 : Coverage of Farmers under MIS in Dharwad District in respect of Maize crop

Sample Taluk	Sample Village	Total No. of onion growers		MIS benefits availed by	
		Small farmers	Farmers in all categories	Small categories	All categories
(1)	(2)	(3)	(4)	(5)	(6)
Dharwad	Narendra	177	208	62 (35.02)**	62 (29.80)*
	Navlur	100	200	47 (47)**	47 (23.5)*
	Sub total (A)	277	408	109 (39.35)**	109 (26.71)
Navalgund	Arekuratti	360	480	213 (59.16)**	390 (81.25)*
	Yamnur	140	215	80 (57.14)**	137 (63.72)
	Sub total (B)	500	695	293 (58.6)**	527 (75.82)
	Total (A + B)	777	1103	402 (51.73)	636 (57.66)

Note: * [Column (6) / Column (4)] x 100 ** [Column (5) / Column (3)] x 100

However, as Table 4.3 shows, only two variables namely, distance from procurement centre (DIST) and level of production (PROD) happened to be significant. Thus, with a view to refining the model, a step wise discriminant analysis was carried out. With stepwise option, the model included only three variables namely distance from procurement centre, level of production and total income of the farmers. The estimated discriminant function with unstanderdized co-efficient was.

$$Z = -1.538 + 0.034 \times DIST + 0.042 \times PROD - 0.064 \times TINC$$

The calculated F value worked out to be 8.962 and was higher than the table value of 3.78 with 3 and 236 degree of freedom at 1 per cent significance level. This indicated that the estimated discriminant function was significant.

Table 4.4 shows relative contribution of each of three variables to the discriminating power of the model. Specifically, the table shows that the level of production had a discriminant power of 72 per cent followed by distance from procurement centre (27%) and total income of the farmer (0.8 %).

The estimated model was tested for its validity by calculating the number of cases that were correctly classified and misclassified by the function. Table 4.5 shows the classification results. As revealed by the table 68.3 per cent of the cases in 1st group and 49.2 per cent of the cases in the 2nd group were correctly classified by the model. Overall, the correct prediction of the model was 59 per cent.

Table 4.3 : Group means of socio-economic characteristics of MIS and non MIS for onion

Characters	Mean for MIS farmers	Mean for non MIS farmers	F value	df1	df2	Significance level
AGE	40.28	40.07	0.054	1	238	0.8170
EDU	6.57	7.00	0.517	1	238	0.4730
DIST	17.50	24.77	14.34	1	238	0.0001
PROD	52.54	62.88	13.10	1	238	0.0001
TINC	25.37	25.53	0.014	1	238	0.9070

Note : * df - degrees of freedom

Table 4.4: Relative contribution of socio-economic characteristics to the discrimination between two groups for onion

Sl. No.	Socio –economic characteristics of farmers	Standardized Co-efficient	Mean difference	Co-efficient x mean difference (3) x (4)	Relative contribution (%)
(1)	(2)	(3)	(4)	(5)	(6)
1	Total income of the farmer	-0.668	-0.16	0.106	0.79
2	Level of production	0.938	-10.34	-9.69	72.22
3	Distance from procurement centre	0.499	-7.27	-3.62	26.98

Table 4.5: The test Classification of the farmers by the model for onion

Original group	No. of farmers	Model prediction	
		Predicted group	No. of farmers
1	120	1	82 (68.3)*
		2	38 (31.7)**
2	120	1	61 (50.8)**
		2	59 (49.2)*
		Overall correct predicted	58.75 *** per cent

Note :
* Percentage of correct prediction
** Percentage of incorrect prediction
*** Calculated as (82 + 59) / 240

4.2.2 For maize crop

The estimated discriminant function with all the five explanatory variables was as follows:

Z = -1.849 – 0.025 x AGE – 0.022 x EDU + 0.051 DIST + 0.052 x PROD – 0.036 TINC

Where,

AGE = Age of the farmers

EDU = Education level of the farmers

TINC = Total income of the farmers

PROD = Level of production

DIST = Distance from procurement center

However, as Table 4.6 shows, only two variables namely, distance from procurement centre (DIST) and level of production (PROD) happened to be significant. Thus, with a view of refining the model, a stepwise discriminant analysis was carried out. With stepwise option, the model included only three variables namely distance from procurement centre, level of production and total income of the farmers. The estimated discriminant function with unstanderdized co-efficients was.

Table 4.6 : Group means of socio-economic characteristics of MIS and non MIS for maize

Characters	Mean for MIS farmers	Mean for non MIS farmers	F value	df1	df2	Significance level
AGE	37.76	37.13	0.612	1	238	0.4350
EDU	6.98	6.09	2.084	1	238	0.1500
DIST	7.50	14.72	50.784	1	238	0.0001
PROD	47.54	72.43	129.819	1	238	0.0001
TINC	20.99	21.33	0.117	1	238	0.7330

Note : * df - degrees of freedom

Z = -2.946 + 0.052 x DIST + 0.052 x PROD – 0.036 TINC

The calculated F value worked out to be 54.63 and was higher than the table value of 3.78 with 3 and 236 degree of freedom at 1 per cent significance level. This indicated that the estimated discriminant function was significant.

Table 4.7 shows relative contribution of each of three variables to the discriminating power of the model. Specifically, the table shows that the level of production had a discriminant power of 87.55 per cent followed by total income of the farmer (11.78%) and distance from procurement centre (0.36%).

The estimated model was tested for its validity by calculating the number of cases that were correctly classified and misclassified by the function. Table 4.8 shows the classification results. As revealed by the table 85.8 per cent of the cases in the 1st group and 78.3 per cent of the cases in 2nd group were correctly classified by the model. Overall, the correct prediction of the model was 82.1 per cent.

4.3 THE EXTENT OF PRODUCTION PROCURED UNDER MIS AND THE CONSTRAINTS FACED BY THE FARMERS IN AVAILING THE MIS BENEFITS

4.3.1 Onion production and its procurement under MIS in Gadag district

Table 4.9 shows the proportion of onion produce of the sample farmers sold under MIS. In Hulkoti Village, 43.88 per cent of the produce of sample farmers was sold under MIS, for Mulgund this proportion was 40 per cent. The table also shows that the proportion of the produce sold under MIS was 42 per cent for Gadag taluk and 44 per cent for Mundargi taluk. Overall, it was 43 per cent for Gadag district.

4.3.2 Maize production and its procurement under MIS in Dharwad district

Table 4.10 shows the proportion of maize produce of the sample farmers sold under MIS. In Arekuratti Village of Navalgund taluk 53.75 per cent of the produce of sample farmers was sold under MIS; for Yamnur this proportion was 38.16 per cent. The table also shows that the proportion of the produce sold under MIS was 46.73 per cent for Navalgund taluk. Further, the proportion was 35.30 per cent for Dharwad taluk. Overall it was 41.60 per cent for Dharwad district as whole.

Table 4.7: Relative contribution of socio-economic characteristics to the discrimination between two groups for maize

Sl. No.	Socio –economic characteristics of farmers	Standardized Co-efficient	Mean difference	Co-efficient x mean difference (3) x (4)	Relative contribution (%)
(1)	(2)	(3)	(4)	(5)	(6)
1	Total income of the farmer	0.408	-7.22	-2.94	11.78
2	Level of production	0.881	-24.89	-21.92	87.85
3	Distance from procurement centre	-0.270	-0.34	0.0918	0.36

Table 4.8 : The test Classification of the farmers by the model for maize

Original group	No. of farmers	Model prediction	
		Predicted group	No. of farmers
1	120	1	103 (85.8)*
		2	17 (14.2)**
2	120	1	26 (21.70)**
		2	94 (78.3)*
		Overall correct predicted	82.08 *** per cent

Note :
* Percentage of correct prediction
** Percentage of incorrect prediction
*** Calculated as (103 + 94) / 240

Table 4.9: Onion production and its procurement under MIS in Gadag district

(Quantity in Qtls.)

Sample Taluk	Sample Village	Total production of the sample farmers	Quantity sold under MIS
Gadag	Hulkoti	2869	1259 (43.88)
	Mulgund	3395	1360 (40.04)
	Sub total (A)	6264	2619 (41.81)
Mundargi	Dhoni	2890	1165 (40.31)
	Dambal	2515	1215 (48.31)
	Sub total (B)	5405	2380 (44.30)
	Total (A+B)	11669	4999 (42.84)

Note: Figures in parenthesis indicate percentage to the total quantity procured under MIS

4.3.3 Constraints faced by the onion-growing farmers in availing the MIS benefits

Table 4.11 reveals that about 89 per cent of the sample farmers faced the procedural constraints, in availing MIS benefits. For nearly 82 per cent of the sample farmers, meeting fair average quality (FAQ) standards was a problem. About 71 per cent of the farmers opined that the delayed payment was the major problem, while about 40 per cent of the farmers opined that the losses in storage till the time of sale to procurement points was a problem. About 17 per cent, 15 per cent and 9 per cent of the farmers faced the constraints of poor transportation facilities, high marketing cost and long distance from procurement centers respectively.

Table 4.10: Maize production and its procurement under MIS in Dharwad district

(Quantity in Qtls.)

Sample Taluk	Sample Village	Total production of the sample farmers	Quantity sold under MIS
Dharwad	Narendra	3222	1147 (35.59)
	Navlur	3370	1180 (35.01)
	Sub total (A)	6592	2327 (35.30)
Navalgund	Arekuratti	4455	2395 (53.75)
	Yamnur	3655	1395 (38.16)
	Sub total (B)	8110	3790 (46.73)
	Total (A+B)	14702	6117 (41.60)

Note: Figures in parenthesis indicate percentage to the total coverage of farmers under MIS.

Table 4.11: Constraints Faced by the Onion Growing Farmers in Availing the MIS Benefits

(n=120)

Sl.No	Constraints	No. of farmer facing the constraints	Percentage of the farmers facing the constraints
1.	Procedural problems	107	89.17
2.	Difficulty in meeting FAQ standards	98	81.67
3.	Delayed payment	85	70.83
4.	Lack of storage facilities	48	40.00
5.	Lack of transportation facilities	20	16.67
6.	High marketing cost	18	15.00
7.	Long distance from procurement centre	11	9.17

4.3.4 Constraints faced by the maize-growing farmers in availing the MIS benefits

The table 4.12 reveals that the distance to procurement center was the constraints felt by the least number of farmers, whereas maintaining FAQ standards was the constraint faced by all most all the farmers. Another constraints faced by most of the farmers was procedural problem (97%). Delayed payment was another constraints faced by a majority of the farmers in the study area (84.00 %). The constraints of high marketing cost, poor transportation facility and poor storage facility were felt by around 18 per cent, 13 per cent and 10 per cent of the sample farmers respectively.

4.4 NET PRICE RECEIVED BY THE FARMERS FROM MIS AND OPEN MARKET SALES

4.4.1 For Onion Crop

The net prices received in the marketing of onion per quintal in various markets in Gadag district like village market, APMC and procurement centres were worked out, and are presented in table 4.13.

Table 4.12: Constraints Faced by the Maize Growing Farmers In Availing the MIS Benefits

(n=120)

Sl.No	Constraints	Frequencies	Percentage
1.	Difficulty in meeting FAQ standards	119	99.17
2.	Procedural problems	116	96.67
3.	Delayed payment	101	84.17
4.	High marketing cost	22	18.33
5.	Lack of transportation facilities	15	12.5
6.	Lack of storage facilities	12	10.0
7.	Long distance from procurement centre	5	4.16

(i) Sale in Village market

Table 4.13 reveals that the net price received by farmers from sale in village market was Rs.191.00 per quintal. Marketing costs involved in village market sale were weighing cost and commission charges. The total marketing cost incurred per quintal in village market was Rs.9.00 out of which the major share was of the commission charges (Rs.8.00) which accounted for around 90 per cent of the total marketing costs. The sale price was Rs.200 per quintal.

(ii) Sale in regulated market

The net price received from the sale in regulated market was Rs.213.5 per quintal as shown in table 4.13 and the total marketing cost amounted to Rs.36.5 per quintal. The major share in the marketing cost was that of transportation (Rs.20.00) which accounted to 54.79 per cent followed by miscellaneous expenses (Rs.12.00) accounting for 32.87 per cent, commission charges taken by commission agent (Rs.2.50) accounting for 6.84 per cent. Weighing, loading and unloading charges (Rs.2.00) formed 5.47 per cent of the total marketing cost. The sale price was Rs.250 per quintal

(iii) Sale to Procurement centre

Table 4.13 reveals that the net price received under market intervention scheme was around Rs.306 per quintal and the total marketing cost was Rs.34.5 per quintal out of which transportation cost (Rs.17.5) accounted for 50.72 per cent which is the highest followed by miscellaneous expenses (Rs.15.00) accounting for 43.47 per cent and weighing, loading and unloading charges of Re.1.00 per quintal which accounted for 2.89 per cent. In addition, the farmers had to pay on an average Re.1.00 per quintal to the village accountant for obtaining necessary land records for availing MIS benefits. The sale price in procurement centers was Rs.340 per quintal.

Table 4.13: Net Price Received by the Farmer in Different Markets on onion crop

(Rs. per quintal)

Sl.No	Particulars of marketing cost	Sale of the produce in		
		Village market	Regulated market	Procurement center (MIS)
1.	Transportation	-	20.00 (54.79)	17.5 (50.72)
2.	Weighing	1 (11.11)		
			2	1
3.	Loading	-	(5.47)	(2.89)
4.	Unloading	-		
5.	Land records	-	-	1 (2.89)
6.	Commission charges	8 (88.9)	2.5 (6.84)	-
7.	Miscellaneous (personnal expenditure)	-	12 (32.87)	15 (43.47)
8.	Sale price (Rs./Qtl.)	200	250	340
9.	Marketing cost (Rs./Qtl.)	9.00 (100)	36.5 (100)	34.5 (100)
10.	Net price (Rs./Qtl.)	191	213.5	305.5

Note: Figures in parenthesis indicate percentage to total marketing cost

4.4.2 Maize crop

The net prices received in the marketing of maize per quintal in various markets in Dharwad district like village market, APMC and procurement centres were worked out and are presented in Table 4.14.

(i) Sale in Village market

Table 4.14 reveals that the net price received by farmers from sale in village market was Rs.383.00 per quintal. Marketing costs involved in village market sale were weighing cost and commission charges. The total marketing cost incurred per quintal in village market was Rs.17.00 out of which the major share was of the commission charges (Rs.16.00), which accounted for around 94 per cent of the total marketing cost. The sale price was Rs.400 per quintal.

(ii) sale in regulated market

The net price received from sale to regulated market was Rs.418.00 per quintal as shown in table 4.14 and the total marketing cost incurred was Rs.32.00 per quintal. The major share in the marketing cost was that of transportation (Rs.11.00) which accounted for 34.37 per cent followed by miscellaneous expenses (Rs.10.00) accounting for 31.25 per cent, weight loss (Rs.4.50) accounting for 14 per cent, commission charges to commission agent (Rs.4.50) accounting for 14 per cent. Weighing, loading and unloading charges (Rs.2.00) formed around 6 cent of the total marketing cost. The sale price was Rs.450 per quintal.

(iii) Sale to Procurement centre

Table 4.14 reveals that the net price received under market intervention scheme was Rs.502 per quintal and the total marketing cost was Rs.23.00 per quintal out of which transportation cost (Rs.11.00) was the highest accounting for around 48 per cent followed by miscellaneous expenses (Rs.10.00) accounting for 43.47 per cent and weighing, loading and unloading charges (Re.1.00) accounting for 4.34 per cent. The charges of village accountant for necessary land records was on an average Re.1.00 per quintal, which accounted for 4.34 per cent of the total marketing costs. The sale price was the highest in market intervention schemes at Rs.525.00 per quintal.

Table 4.14: Net Price Received by the Farmer in Different Markets on maize crop

(Rs. per quintal)

Sl.No	Particular	Sale of the produce in		
		Village market	Regulated market	Procurement center (MIS)
1.	Transportation	-	11 (34.37)	11 (47.82)
2.	Weighing	1 (5.88)		
3.	Loading	-	2 (6.25)	1 (4.34)
4.	Unloading	-		
5.	Weight loss	-	4.5 (14.06)	-
6.	Land records	-	-	1 (4.34)
7.	Commission charges	16 (94.11)	4.5 (14.06)	
8.	Miscellaneous (personnal expenditure)	-	10 (31.25)	10 (43.47)
9.	Sale price (Rs./Qtl.)	400	450	525
10.	Marketing cost (Rs./Qtl.)	17.00 (100)	32 (100)	23 (100)
11.	Net price (Rs./Qtl.)	383	418	502

Note: Figures in parenthesis indicate percentage to total marketing cost

V. DISCUSSION

The results of the investigation in the previous chapter are discussed in this chapter under the following headings.

5.1 The extent of coverage of farmers under MIS for the selected crops.

5.2 The socio economic factors influencing farmers choice between sale under MIS and open market sales.

5.3 The extent of production procured under MIS and the constraints faced by the farmers in availing the MIS benefits

5.4 Net price received by the farmers from MIS and open market sales.

5.1 THE EXTENT OF COVERAGE OF FARMERS UNDER MIS FOR THE SELECTED CROPS

The coverage of farmers under market intervention scheme (MIS) for onion in Gadag districts was 32.62 per cent of the total farmers and the coverage of small farmers under MIS for onion was around 53 per cent of the total number of small farmers. In case of maize crop, the coverage of farmers under market intervention scheme in Dharwad district was 57.66 per cent of the total number of farmers, and the coverage of small farmers under MIS was around 52 per cent to the total number of small farmers.

The low coverage of farmers from Dharwad and Gadag District as due to lack of awareness, FAQ stipulations, delayed payment and delay in starting procurement operations especially for onion, the perishable crop (Onion growers dispose of the produce quickly, even before the procurement operations begin).

5.2 THE SOCIO-ECONOMIC FACTORS INFLUENCING FARMERS CHOICE BETWEEN SALE UNDER MIS AND OPEN MARKET SALE

From the discriminant function analysis for maize and onion crop, it emerged that total income of the farmers, distance from procurement center and level of production were the important socio-economic characteristics which were useful in classifying the farmers into two groups *viz*., procurement centre (MIS) sale and open market sale.

In respect of both the crops, the contribution of the level of production to the discriminating power of the model was maximum (72.22 per cent for onion and 87.85 per cent for maize). For onion crop the contribution of the variable 'distance from procurement centre' to the discriminating power of the model was more (26.98 per cent) as compared to maize crop (0.36 per cent), and the contribution of the total income of the farmer was 11.78 per cent for maize crop, and 0.79 per cent, in case of onion crop.

For onion, the overall discriminant score was –0.0236 and that for group one (MIS) and group two (open market) was –0.36 and 0.311 respectively. This meant that any farmer for whom discriminant score was more than -0.0236 was likely to belong to "open market" group, and the one for whom the score was less than -0.0236 was likely to belong to "MIS seller" group.

For maize the overall discriminant score was –0.0106 and that for group one and group two was –0.8396 and 0.8179 respectively.

The coefficients of discriminant score for onion were :

Z = -1.538 + 0.034 (DIST) + 0.042 (PROD) – 0.064 (TINC);

Accordingly, the results showed that larger the quantity of production, larger the discriminant score and more likely that the given farmer sells in the open market. This can be understood in the context of certain restriction imposed in the procurement centers, specifically, they put a ceiling on the maximum quantity that can be bought from a single farmer (50 qtls. for onion and 100 qtls. for maize). Further, there is no guarantee that a farmer can certainly sell the maximum quantity allowed, since the FAQ requirements may come in his way. It is likely that the farmers, whose produce is large in quantity, may want to sell everything in open market instead of selling partly under MIS with the above uncertainities, and partly in the open market.

As against this, a farmer whose produce is small may want to sell only under MIS since his produce is likely to be completely absorbed there.

In the case of total income, higher the total income of the farmer, lesser the discriminant score and more likely that the given farmer sells in the MIS. This can be attributed to the fact that the high-income group farmers, could wait for delayed payments and thus opted MIS sales in the hope of higher prices.

The results also showed that larger the distance from procurement centre larger would be the discriminant score. Such farmers are likely to sell in open market. Since large distance adds to transportation cost without any assurance that farmer can certainly sell the maximum quantity allowed under MIS (due to FAQ requirements), the above result makes sense. For maize, the overall discriminant score, the score for MIS group and the score for open market group were 0.0106, -0.8396 and 0.8179 respectively. The discriminant variables namely, DIST, PROD and TINC had the same signs as for onion crop. Thus, the above discussion for onion crop would held good for maize crop also. These results thus suggested that the farmers could avail MIS benefits to a large extent only. If they had good financial standing and could have procurement centres in the nearby areas. Also, FAQ stipulations and ceiling limits on the quantity procured by MIS, could act as deterrents to the farmers with large production, in their desire to sell to MIS centres.

5.3 THE EXTENT OF PRODUCTION PROCURED UNDER MIS AND THE CONSTRAINTS FACED BY THE FARMERS IN AVAILING THE MIS BENEFITS

5.3.1 The extent of production procured under market intervention

The extent of total production of small farmers procured under market intervention scheme for onion and maize crops in Gadag and Dharwad districts were 42.84 and 41.60 percentage respectively.

The reasons for the low proportion of small farmers produce being sold under MIS can be found in low coverage of small farmers under MIS (see table 4.1 and 4.2). This low coverage of small farmers could be attributed to procedural problems and delayed payment associated with MIS. Further, the ceiling fixed for the quantity to be accepted under MIS from the farmers (50 qtls for onions and 100 qtls for maize), and FAQ stipulations are the other reasons for small quantity of the produce being sold under MIS.

These results were in accordance with the study conducted by Mishra *et al*., (2002) who studied the procurement trend of cotton by different agencies in Kalahandi district of Orissa and found that the CCI had procured a share of 23.03 per cent of the total produce in 1995-96, and Cotton Co-operative Marketing Federation of Orissa procured less than 15 per cent in subsequent years. The remaining 85 per cent was procured by private traders.

5.3.2 Constraints faced by the farmers in availing the MIS benefits

The problems encountered by majority of the onion and maize growers were related to FAQ requirements (82%) and 99% farmers respectively), procedural problems (89 per cent and 96.67 per cent respectively), and delayed payment (71 per cent and 84 per cent respectively). For onion, the FAQ stipulation require the produce that is 30 mm in diameter, cleaned, completely matured, with tightened sheath, properly graded and dried, free from pest and disease, undamaged, non-germinated and uniform size, non-twin bulbs, free from mechanical damage should only be bought to the procurement centre.

In case of maize, the FAQ standards prescribed by the government call for the produce of uniform size, shape and colour. It should be in sound merchantable condition confirming to PFA (Prevention of food adulteration Act) standards. Further, maize should be sweet, hard, clean, wholesome and free from *Argemone maxicana* and *Lathyrus sativa* (Kesari) in any form, colouring matter, moulds, weevils, obnoxious smell, admixture of deleterious substances and all other impurities. These FAQ stipulations discourage many farmers selling their produce.

Secondly, there are lengthy and time consuming procedures, as the farmers first must go to village accountant to get the certificate of cultivation of onion or maize crop. Then, with that certificate the farmer has to go to the procurement center and register his name. If there is any conflict between the village accountant and the farmers, that will hinder that group of farmers from obtaining the certificate from village accountant, which they should produce to the procurement center to register themselves with the MIS scheme. This procedural problems acts as a constraints to the MIS aspirants.

Along with these, delayed payment is another problem as payment is at times delayed by upto three months under MIS. Due to this delay, many small farmers prefer to sell their produce in the open market. Another problem faced by 40 per cent of onion growing farmers was lack of adequate storage facilities, which leads to qualitative and quantitative losses and causes price fluctuation.

Distance from procurement centre and lack of transportation facilities were other constraints faced by the farmers in availing MIS benefits.

5.4 NET PRICE RECEIVED BY THE FARMERS FROM MIS AND OPEN MARKET SALES

5.4.1 Village market

The net price received by farmers for onion and maize crop was Rs.191 and Rs.383 per quintal respectively, but the total marketing cost for onion was Rs.9.00 and for maize Rs.17.00 per quintal and sale price was Rs.200 and Rs.400 per quintal for respective crops.

The farmers sell their produce to the village merchant at farm level because of reduction in transportation cost, loading and unloading cost and other miscellaneous expenses. Also, village merchant helps the farmer in the form of giving credit at the time of sowing. Thus, some farmers always prefer to sell in village markets.

5.4.2 APMC (Agricultural Produce Market Committee) sales

APMC ensures the orderly marketing of agricultural produce. The regulated markets came into existence with a view to protecting the farmers against the exploitation. In APMC, net price received by farmers for onion and maize crop was Rs.213.5 and Rs.418.0 per quintal respectively and the total marketing cost for onion was Rs.36.5 and for maize Rs.32.00 per quintal.

5.4.3 Sales in Procurement centre (MIS)

In market intervention scheme the net price received by farmers were higher than the open market sale. In case of onion and maize crops, the net prices under MIS were Rs.305.5 and Rs.502 per quintal respectively and the total marketing cost was Rs.34.5 for onion and Rs.23 per quintal for maize. The intervention schemes are aimed either at directly influencing the prices received by the farmers and those paid by consumers, or influencing the demand.

These results were in accordance with the study conducted by Pant and Shyroj (2004) who studied the marketing of maize in Rajasthan and identified nine marketing channels, one of which was

Farmer – commission agent cum wholesaler – Govt. agency. The conclusion was that the net prices received by the farmers in this channel were the highest.

VI. SUMMARY AND POLICY IMPLICATIONS

The technological changes of mid sixties were a step towards meeting the food crisis that threatened food security of the country during those years. At that time, it was suggested that the technological change alone might not bring the required dynamism in the growth of agricultural sector and it needed to be supported with proper institutional back up. Therefore, a series of institutional reforms were undertaken in order to supplement and induce growth in agriculture sector. As a first step, land reforms were revamped to herald its second phase in early seventies. Agricultural administration and extension formed the second step in the process of institutional changes. This was accompanied by strengthening the system of agricultural education. As a crucial step, banking sector underwent the metamorphosis through nationalization with a renewed thrust on priority sector lending.

The most important step simultaneously taken with this was the initiative to evolve agricultural price policy to achieve the planned growth through price incentives. In order to understand and construct a proper price policy framework, Government of India appointed a committee under the chairmanship of Late Shri. L.K. Jha to suggest the required steps towards organizing the agricultural price policy of the country. Jha committee's recommendations included policy initiatives to protect the consumers as well as the producers. It strongly recommended market interventions for procuring food grains to meet the requirement for distribution as well as a protective price level to the farmers. Following the Jha committee report, a series of measures were taken and as a result, agricultural price commission (APC) came into being in January, 1965. The first report of the APC was submitted in August 1965, covering *Kharif* season.

The market intervention with respect to several crops was introduced in various forms and degrees. An attempt is, therefore, made in this report to study the role of market interventions scheme and the extent to which it has been successful and beneficial to producers.

The broad objectives of the present study are:

1. To analyse the extent of coverage of farmers under MIS for the selected crops.
2. To examine the socio economic factors influencing farmers choice between the sale under MIS and open market sales.
3. To assess the extent of production procured under MIS and examine the constraints faced by the farmers in availing the MIS benefits
4. To compare the net price received by the farmers from MIS and open market sales.
5. To suggest the policy measures to improve the operations of MIS.

The study was carried out in respect of Dharwad and Gadag districts of northern Karnataka. These are the major maize and onion growing districts.

With the help of village accountant the total number of farmers in each village growing the study crop in 2004-05 was ascertained. The village accountant also furnished information on the total number of small farmers, who grew the study crops. In addition, the village accountants provided the lists of all the maize and onion growers who availed MIS benefits. This list also distinctly showed small farmers among the total number of beneficiaries. With this information, a random sample of 30 farmers who availed MIS benefit and another 30 farmers who did not avail MIS benefits was selected to analyse the socioeconomic characteristics responsible for such distinctions. Thus, at the rate of 60 farmers per village, as many as 240 farmers were selected from each district. For the two districts together the sample included 480 farmers.

The tools and techniques employed in the study area were tabular presentation and discriminant function analysis.

Findings of the study

The important findings of the study and the conclusions drawn therefrom are presented below.

1. The coverage of farmers under MIS for onion crop in Gadag district was 32.62 per cent of the total onion growers. The coverage of small farmers was around 53 per cent.
2. Out of 1103 farmers, 636 farmers were covered under market intervention scheme for maize crop in Dharwad districts which meant around 58 per cent coverage. The coverage of small farmers was around 52 per cent.
3. Socio-economic factors influencing farmers choice of sale between to procurement agencies and open market for maize were level of production, total income of the farmer and distance from procurement centre. The same factors influenced farmers choice in respect of onion too.
4. Total Production procured under MIS in Dharwad district for maize crop was 6117 quintal out of 14702 quintals, which accounted for around 42 per cent of the total quantity sold by small farmers.
5. Total quantity sold by small farmers in Gadag districts were 11,669 quintals, out of which 4999 quintals were sold under MIS, accounting for 42.84 per cent of the total quantity sold by small farmers.
6. In village market the net price received for onion crop was Rs.191.00 per quintal. In regulated market, it was Rs.213.5 per quintal, and in case of procurement centre, the net price received by the farmers was Rs.305.5 per quintal.
7. For maize crop, the net price received by farmers was Rs.383 per quintal in village market, Rs.418 per quintal in regulated market and Rs.502 per quintal in the case of MIS sales.
8. Majority of the onion and maize growing farmers opined that fair average quality standards, procedural problems, delayed payment and lack of storage facilities especially in case of onion crops were the major constraints in availing the MIS benefits.

POLICY IMPLICATIONS

1. Coverage of small farmers under MIS was not satisfactory though it is primarily meant for them. This situation can be corrected by
    a. Speeding up payment
    b. Relaxing procedural formalities, and
    c. Creating awareness about timing and location of procurement centers
2. As per the findings of discriminant analysis, setting up procurement center in near by places will help to increase the coverage
3. There is need to increase maximum limit of quantity procured under MIS.

VII. REFERENCES

AJIT MOHAN KUMAR SINGH, 1998, Procurement strategy for horticultural produce co-operative marketing and processing society limited, Bangalore. *M.Sc. (Agri.)* Thesis, University of Agricultural Sciences, Bangalore.

ANONYMOUS, 1980, Onion for smelling not for testing. *The Hindu*, January 2nd 1980.

AWADESH KUMAR, P.P. DUBEY AND ASHOK KUMAR, 1997, Marketing : A case study of two markets in Chattisgarh region of Madhya Pradesh. *The Bihar Journal of Agricultural Marketing* vol. IV. No. 1 March 1996.

BALAPPA, SHIVARAYA, 2000, Economic performance of production marketing and export of vegetables in north Karnataka, *Ph.D. Thesis,* University of Agricultural Sciences, Dharwad.

DANTWALA, M.L., 1967, Impact of minimum support prices on the Agricultural economy (consolidated report) *Agricultural Situation in India,* Dec 2003, LX (9): 598-613.

ESWARPRASAD, Y., 1987, An evaluation study of integrated rural development programme in Ananthpur district, Andhra Pradesh, *Ph.D. Thesis*, University of Agricultural Sciences, Bangalore.

GOVARDHAN, H.L., 1978, Changes in structure of marketing dry chillies in Karnataka : A case study. Unpublished *M.Sc. (Agri.) Thesis*, University of Agricultural Sciences, Bangalore.

GOVERNMENT OF INDIA 1986, Agricultural Price Policy. A long term perspective, ministry of Agriculture New Delhi (consolidated report) *Agricultural Situation in India,* Dec 2003, LX(9) : 298-613.

GOVERNMENT OF INDIA 1993, Report of the commission of Agricultural costs and prices ministry of Agriculture, Government of India, New Delhi (consolidated report). *Agricultural Situation in India*, Dec 2003, LX(9): 298-613.

HOSMANI, S.B., 1995, Performance and impact of regional rural banks : A case study of Malaprabha Grameen Bank in Karnataka. *Ph.D. Thesis,* University of Agricultural Sciences, Dharwad.

JAGADEESH ALSE, 1998, Management appraisal of an agri-business unit : A case study of the central arecanut and cocoa marketing and processing co-operative ltd. Mangalore *MABM Thesis*, University of Agricultural Sciences, Dharwad.

KALYANKAR, S.P. AND RAJMANE, K.D., 1987, Discriminant function analysis in the loan of co-operatives. *Indian Co-operative Review*, 25(1): 38-42.

KARISOMANAGOUDAR, R.S., 1990, Economics of production and marketing of rainfed onion in Gadag taluk of Dharwad district, Karnataka, *M.Sc.(Agri.) Thesis*, University of Agricultural Sciences, Bangalore.

KERUR, N.M., BASAVARAJ BANAKAR, SHANKAR MURTHY, H.G., AND DODAMANI, M.T., 1998, Efficiency of sunflower marketing channels in north Karnataka. The *Bihar Journal of Agricultural Marketing* vol. VI No.2, Apr- June-1998.

KRISHNA, S.N.V., 2000, Growth and development dimensions of regional rural Banks in Karnataka. *M.Sc. (Agri.) Thesis*, University of Agricultural Sciences, Dharwad.

KRISHNAIAH, J., 1998, An empirical Analysis of cotton marketing in warangal district of Andhra Pradesh. *Indian Journal of Agricultural Marketing*, 12(1&2), 1998.

LEKSHMI, S., RUGMINI, P. AND JESY, THOMAS, 1998, Characteristics of defaulters in Agricultural credit use : A micro level analysis with reference to Kerala. *Indian Journal of Agricultural Economics*, 53(4): 640-647.

MAHESH, V. CHIDRI, 1999, Management of Agro processing industries in Karnataka A case study of tur dal industry. *M. Sc. (ABM) Thesis,* University of Agricultural Sciences, Dharwad.

MALI, B.K., SALE, D.L. AND YADAV, D.B., 1997, Marketing of Ber in Maharashtra. *The Bihar Journal of Agriculture Marketing* vol. V. No.2, Apr – June 1997.

MAROTHIA, S.P., GUPTA AND CHANDRAKA, M.R., 1996, Vegetables Marketing : A case study of two markets in Chattisgarh region of Madhya Pradesh. The Bihar Journal of Agricultural Marketing, V(1): 23.

MISHRA, S.N., MALLICK, S.C. AND HOSSAIN, M.M., 2002, Cotton procurement and associated marketing problems in Kalahardi district of Orissa. *Indian Journal of Agricultural Marketing*, conference special issue.

PANDEY, V.K., AND MULARIDHARAN, M.A., 1997, An application of discriminant function in agricultural finance. *Indian Journal of Agricultural Economics*, 32(2): 41-51.

PANT AND SHYORAJ, 2004, Marketing of maize in Rajasthan. *Indian Journal of Agricultural Marketing*, 18(1): 115-128.

PATIL, S.M., 2000, Performance of primary co-operative agricultural and rural development Bank in Dharwad district, Karnataka *Ph.D. Thesis,* University of Agricultural Sciences, Dharwad.

PRADUMANKUMAR, V.C., MATHUR AND SURABHI KUCHHAL, 1998, Management of Export Marketing of Horticultural Products. *The Bihar Journal of Agricultural Marketing,* vol. VI No. 1, Jan-Mar, pp. 1-16

RADHAKRISHNA AND INDRAKANT, 1988, Marketing of Rice in Andhra Pradesh. *Indian Journal of Agricultural Economics,* 32(1): 115-128.

RAGHUBANSI, C.S., DHALL, S.D., AND YADAV, R.P., 1975, Retains costs and margins in Ginger marketing in Himachal Pradesh. *Indian Journal of Agricultural Marketing*.

RAMAPPA, K.B., 2003, Milk and milk products an analysis of consumer preference and consumption pattern in Hubli- Dharwad urban conglomeration. *M.Sc. (ABM) Thesis*, University of Agricultural Sciences, Dharwad.

RAMESH CHAND AND SIDHU, 1985, Analysis of defaulters and non-defaulters a discriminate function approach. *Indian co-operative Review*, 22:251-262.

RAVI, P.V., 1975, An analysis of marketing problems of coconut in Karnataka state. Unpublished *M.Sc. (Agri.) Thesis,* University of Agricultural Sciences, Dharwad.

REDDY BABU, D.R., 1993, Progress and performance of co-operative agricultural and Rural development Banks (PCARDBS) in Karnataka, *M.Sc.(Agri.) Thesis*, University of Agricultural Sciences, Banglore.

REDDY, C.S. AND SHARFUDDIN, 1984, Dairy co-operative. *Indian Journal of Marketing*, 15(2&3): 9-12.

SARUP AND PANDEY, R.K., 1982, Socio-economic characteristics affecting fertilizer use in Orissa. *Artha Vikas*, 18(1&2): 52-57.

SATYANARAYAN SONI AND AHMED, M.S., 1992, Production and marketing of tomato in Tribal area of district Sidhi (Madhya Pradesh). *Indian Journal of Agricultural Marketing,* 6(1): 16-18.

SHAKUNTALA GUPTA AND BALAWINDER SINGH, 1998, Price spread in marketing of Groundnut and Rapeseed, Mustard in Punjab. *Indian Journal of Agricultural Marketing*, 12(1&2): 128-132.

SHYAMASUNDAR, M.S., NANJREDDY, C. AND LALITHA ALHOTH, 1995, Price spread in marketing of irrigated onion : An economic analysis. *Agricultural Banker,* 14(4): 33-39.

SINGH, B. SINGH, V.K. AND KHATKAR, R.K., 1999, Marketing of tomatoes in Hosiarpur district of Punjab. *Indian Journal of Agricultural Marketing,* 13(2): 40.

SINGH, P.K., KAKADIA, B.H. AND PATEL, V.M., 1993, Marketing of potato in a major potato producing area of Punjab. *Indian Journal of Agricultural Marketing*, 7(2): 179-185.

SINGH, R.P. 1992, Characteristics of willful defaulters of dairy finance An application of discriminant function. *Journal of Research*, Birsa Agricultural University, 4(2): 153-157.

SINGH, R.S., 1992, Studied on marketing of maize in Intermediate zone of the Jammu and Kashmir. *Indian Journal of Agricultural Marketing,* 6(1):38-40

THAKUR, D.S. AND SINGH, N., 1971, Marketing supply and prices of onion in Ludhiana and Panipat markets of Punjab and Haryana. *Agricultural Marketing,* 13(4): 11-14.

TOMAR, B.S. AND ARJUN SINGH, 2002, Marketing of wheat and rice in Haryana. *Indian Journal of Agricultural Marketing*, conference special issue, 16: 26-32.

MARKET INTERVENTIONS SCHEME IN KARNATAKA: AN ANALYSIS OF ITS USEFULNESS TO THE FARMERS

RAJKUMAR.P.KOUDAL 2005 DR. S.B. MAHAJANASHETTI
Major Advisor

ABSTRACT

Market intervention scheme is to protect the farmers against distress sale of agricultural/ horticultural commodities known as minimum support price. This scheme is also known as “Floor price scheme for Agricultural / horticultural commodities in Karnataka”. The study was undertaken in Dharwad and Gadag district of Karnataka, to analyse the coverage of farmers, extent of production procured, socio-economic factors of farmers choice and constraints faced by the farmers. Four taluks viz.., Dharwad and navalgund in Dharwad districts, Gadag and mundargi in Gadag districts were selected based on maximum procurement of maize and onion respectively. From each taluk top two villages accounting for maximum procurement were selected. From each village 60 farmers, 30 availing market intervention scheme (MIS) benefits and 30 not availing MIS benefits were selected, to analyse the socio economic characteristics responsible for such distinctions. The study employed the tabular presentation and discriminant function analysis.

The coverage of small farmers under MIS for onion and maize crops in Gadag and Dharwad districts were around 53 percent and 52 percent respectively. Socio economic factors influencing farmers choice of sale between procurement agencies and open market sales for a maize and onion were level of production, total income of the farmer and distance from procurement center.

Total production procured under MIS in Dharwad and Gadag districts for maize and onion crops were around 42 percent and 43 percent respectively of the total quantity sold by small farmers. The net price received by the farmers was higher in case of procurement centers compared to that of open market sales.

Majority of the farmers opined that fair average quality standards (FAQ), procedural problems and delayed payments were the major constraints in availing MIS benefits.