CHAPTER -1
RESEARCH DESIGN AND REVIEW OF LITERATURE

1.1 INTRODUCTION

Agriculture is one of the most important activities in both developed and developing countries which provide basic raw material to man and various agro based industries. It continues to be the mainstay of the Indian economy and an effective antidote to poverty and unemployment. Recognizing its importance in the economic development of the country, sustained efforts have been made for improving agriculture during the successive five year plans.

Agriculture is one of the strongholds of the Indian economy and it accounts for 18.5 percent of the gross domestic product (GDP). Agriculture draws its significance from the fact that it has vital supply and demand links with the manufacturing sector and is a source of livelihood for the rural population of India, and it represents the backbone of rural livelihood security system. In 2007-08, India achieved a record food grain production of 227 million tonnes, posting a growth of 10 to 12 million tonnes in excess of the previous fiscal. With an added two to three million tonnes during the Rabi season, it would touch 230 million tonnes - a landmark in food grain production.

The agricultural situation in India has undergone a rapid change. Indian agriculture, long been viewed as a subsistence occupation and a way of life on the part of the peasant is now rapidly getting commercialized. Indian farmer has come to produce for the market rather than for domestic consumption. With the break through in farm technology, now a days, agriculture has become increasingly capital intensive intermediates of augmentation of productivity both land and human labor. Self sufficiency in the production of food grains and edible oils is not a small achievement if we consider the steady uptrend in growth of population. The areas under irrigation and cropping intensity have steadily increased. Exports of agricultural products enabled us to import machinery and food grains.

A number of policy decisions have been taken to give a high priority to agriculture and of late the production of pulses has been identified as the thrust area considering the dietary, economic and other associated factors.
Importance of pulse in the Indian economy:

India is largest producer of pulses in the world with 25 per cent share in global production. Chickpea, pigeonpea, mungnean, uradbean, lintil, and fieldpea are important pulses crop contributing 39 per cent, 21 per cent, 11 per cent, 10 per cent, 7 per cent and 5 per cent to the total production of pulses in the country. The total production was estimated 14.56 million tonnes and an area of 23.63 million hectares with average productivity 625 kg/ha. Climate change will surely have an adverse impact on productivity on account of reduction of total crop cycle duration. Most of the pulses like mungbean and uradbean short duration crop.

Pulses production and consumption are important in maintaining food security. They occupy an important place in human diet. Pulses contain more protein than any other grains and vegetables. Cultivation of pulses helps to maintain soil fertility through the nitrogen fixation. They are cultivated in many parts and consumed in all parts of the world. It is the world largest pulses producer accounting for 27-28 per cent of global pulses production. India harvests between 12 and 15 million tonnes of pulses each year. But, yield of the pulse crops is much low and static for the last many years. Pulses are largely cultivated in dry-lands during the winter seasons.

Even though India is the world largest producer of pulses, the county is importing a large amount of pulses to meet the growing domestic needs. During 2007, India imported 2.79 million tonnes of various pulses, especially from the countries like China, Canada, Australia and Myanmar. India is one of the exporters of pulses. Now, Indian government banned the export of pulses to meet the growing domestic demand.

Even though India is the largest pulses producer of the world, it imports large amount of pulses from rest of the world. So, it is important to analyze, how the inflow and outflow of pulses from India is changed over period of the time; why India is importing a considerable amount of pulses; examine the impact of inflow of pulses in terms of area under cultivation, quantum of production, prices and net food grains availability for the consumers

Pulses export has increased from 0.34 lakh tonnes in 1992 to 1.64 lakh tonnes in 2007. There are sudden hikes appeared for the years 2000, 2004 and 2005. In those years the quantity of pulses exports comes closer to either 3.0 lakh tonnes or exceeds 4.0 lakh
tonnes. Annual change in pulses exports both in terms of quantity and value is mostly positive, except years next to the sudden increases have appeared. Export as a percentage to the pulses production is also increased consistently to one percent during the first ten years. After that the percentage has fluctuated between one and 4 percent.

According to the Pulses Meet Resolution of India (2008), on one hand India is the largest importer, producer and consumer of pulses. But, on the other hand, India is also the largest pulses processor, as pulses exporting nations such as Myanmar, Canada and Australia, do not have adequate pulses processing facility. The reason is that these countries do not have much domestic consumption of pulses and therefore, they have never attempted to develop domestic processing industry. Due to this India re-exports a considerable amount of pulses. The Indian pulse export ban of 2006 occurred on June 28, 2006 when the Finance Minister of India declared a ban on exports of sugar, pulses and wheat until the next harvest, due to domestic shortages. The ban was later extended until March 31, 2007. To augment availability and check prices, the Central government extended the ban on export of pulses, except Kabuli chana, by another year till March 31, 2009.

With stagnant area under cultivation and production, India has permitted unrestricted imports of pulses with low duties for about 20 years. India was the world's largest pulses importer. For many pulses, large shares of import, including desi chickpeas, pigeon peas, mung beans, black matpe, and kidney bean, come from Burma. Importers favor Burma because it offers many varieties with qualities similar to those produced in India as well as reasonable prices, low freight rates, and relatively fast delivery.

Canada and Australia are major suppliers of dry peas and Kabuli chickpeas to the Indian market, each supplying about one-third of India's pea imports. Historically, Canada has shipped green and yellow peas. Australia is a supplier of chickpeas and low-priced dun peas. Most Kabuli chickpeas come from Mexico, Australia, Canada, Turkey and Iran. Nepal and Syria account for the largest shares of Indian lentil imports.

Import of pulses generally increased over the period between 1991 and 2007. Volume of import has increased from 3.13 lakh tonnes to 27.91 lakh tonnes during the above said period. Negative annual change in import of pulses has appeared 7 out of 17
years in the above period. But, mostly they are marginal in size. There have some sudden hike in the quantum of imports appears during the years of 1997, 2001, 2005 and 2006. But, in value term the import of pulses increases continuously in most of the years. Import as a percentage to the total production has sharply increased from 2.6 in 1991 to as high as 18.5 per cent in 2007. These facts evidently show that India largely imports different varieties of pulses and the rates of import have increased very sharply.

The inflow and outflow of pulses from India to the rest of the world have brought certain important impact on country’s economy. Particularly liberalized and subsidized import of pulses of India helps to meet demand-supply gaps, which occurred because of stagnation in the area under cultivation, very slow growth in yield, poor increase in production and speedy increase in population. These imports also help to slow down the faster increase in the prices of different types of pulses items. Import of pulses helps to slow down the decrease in the net per capita availability of food grains. Ban on export and re-export of pulses make the closure of Indian pulses processing units. Problems of Indian pulses economy can be solved with the increase the sources of production. Effective and continuous efforts are needed to increase the area under cultivation as well as the yield of pulses.

Problems in production and marketing of pulses:

The pulses sector is still confronted with some problems since the above said efforts are yet to reflect in increased productivity of pulses. Some of the important problems are as under.

The basic problem is low yield level of pulses due to adoption of traditional varieties. Several high yielding, disease resistant and input responsive varieties of pulses have been developed but they could not be adopted due to lack of awareness of farmers or the non availability of seeds. Although market prices of pulses are high gross value productivity per hectare for major pulses like chickpea and pigeonpea remains less than other principal crops.

Another problem that hinders pulse production is lack of area under irrigation. The area under irrigation is hardly about 9.8% in India and 4% in the case of Karnataka (1994-95). There is still a myth among pulse producers that pulses are grown under
rainfed situations. They are grown on marginal and sub marginal lands of rainfed areas. The highest percentage of irrigated area to total area under pulses was recorded in Haryana (26.4%) and Uttar Pradesh (24.1%). Since the major area under pulses is rainfed, adoption of improved package of practices becomes risky and is usually avoided by the farmers. Dhindsa K.S. and Anju Sharma (1997) noticed that increase in gross irrigated area has resulted in a heavy fall in the area under gram, mash and massar in Punjab state, followed by South-western region and central region. The response of moong acreage to irrigation has been positive in all regions and this positive impact is possible only when this crop is sown as a summer crop and requires irrigation water.

Higher risk associated with cultivation of pulses is a major constraint in increasing production of pulses. Yield of pulses fluctuate due to high susceptibility of pulse crops to diseases and pests and rainfed situations overall fluctuations in yield of pulses as estimated through coefficient of variation was lower (Bhatia M.S., 1991 because of marginal increase in yield. Co efficient of variation as measured from downward variation from the trend yield was therefore, considered to be appropriate measure of risk and was higher in case of pulses than that of rice, wheat as well as groundnut and mustard. Since the average productivity of pulses itself is very low, the higher risk associated in its production further retards the adoption of new technology and use of yield increasing inputs.

Cultivation of pulses is characterized by mixed cropping with coarse cereals. While chickpea is usually mixed with wheat and barley during Rabi season. Mungbean and urdbean are mixed with sorghum and maize during Kharif season. As the irrigation facilities are being extended, the area under coarse cereals is being replaced by superior cereals. As the pulses are generally grown with coarse cereals, the area under most of the pulses like Chickpea, Kharif urdbean and Kharif mungbean are declining from 1967-68 to 1989-90. The total area under pulses has not recorded any declining trend and remained stagnant due to increase in area under pigeonpea due to its increasing productivity and cultivation of mungbean, urdbean and cowpea during spring/summer season, mungbean, urdbean, horsegram and pigeon pea during Rabi season. Since the area under pulses has not been increasing, it also acts as a constraint for slow growth in pulse production.
Prices have to play an important role in economic planning. They determine not only what shall be produced but also how much be produced. On the basis of price studies, the cultivators can make decision for proper allocation of the crop areas by anticipating future prices based on the prices which prevailed in the past. Studies in the past have noticed the lack of remunerative price as one of the major constraints as for as marketing of pulses is considered. An efficient marketing system plays a crucial role in boosting the production. This is being observed more in pulses where 85 per cent of total pulses is earmarked as marketable surplus (Suryavanshi et al., 1995).

It has often been argued that market prices of pulses are very high and these should provide enough incentives to the farmers for increasing the production of these crops, but most of the time the prevailing marketing network is against the interest of the farmer. The data on price spread collected at Kanpur revealed that the producer’s share in consumer’s rupee remained 60.69 and 50.78 paisa in pigeon pea and chickpea, respectively. Singh et al. (1994) reported that the producer’s share in consumer’s rupee was 81.44, 78.98 and 79.88 paisa in the case of pigeonpea, chickpea and lentil, respectively. The policy implication in this regard is that the pulse marketing system has to be made more competitive so that price signals arising out of pulse shortages (relative to demand) are transmitted to the farmers. This can be achieved by encouraging the establishment of mini and small processing units in a dispersed manner in pulse producing areas and setting up of state level pulse marketing Federation to procure pulse grains from farmers or through co-operatives, process them and provide dal to consumers at reasonable prices. These measures will increase the farmer’s share in the consumer’s rupee, reduce price spread and make available cheap pulses to the consumers.

In a nutshell, we can say that production of pulses is associated with various technological and economic constraints (Lal and Brahm Prakash, 1996) in the form of low yield and net income, poor adoption of improved scientific technology, rainfed cultivation under high risk situation and inefficient marketing. We can increase the pulses production by eradicating these constraints by sincere efforts for generating and transfer of appropriate technology for cultivation of pulses under dry farming or limited irrigation agriculture, increasing the facilities of irrigation, expansion of crop insurance schemes to cover pulse crops and improving the marketing efficiency.
1.2 STATEMENT OF THE PROBLEM

Agricultural marketing plays an important role not only in stimulating production and consumption, but in accelerating the pace of economic development also. An efficient marketing system ensures higher levels of income for the farmers and widens the markets for the products by taking them to remote corners of the country. The marketing of agricultural products in general and pulses in particular has not registered as much attention as the introduction of new technology for expansion of output and yield in our country. Disposal of the farm produce has become as important as the adoption of new technology for improving yields in agriculture and further this marketing of farm products assumes greater significance with the gradual displacement of subsistence farming by commercial agriculture. It is the pattern of movement of produce from farm to the ultimate consumer which plays a crucial role in assessing the returns to the farmer.

The better returns, stable price and attractive terms of trade will induce the cultivators to produce more and market a major proportion of what they produce. So it can be said that unless the marketing improves incentives provided only to increased production will not attract the cultivators in the desired strength. Existence of better market competition and prevalence of adequate infrastructural facility in the form of better roads, transportation, storage, market information etc. Play a decisive role in improving the market structure, conduct and performance and thereby, the economic status of the cultivators. Hence, appropriate growth of market structure appears to be important in this context for increasing the marketing efficiency and rationalized market margins and to reduce the costs it becomes imperative to understand the nature and extend of market competition, marketing margins, costs and price spread.

“A STUDY OF PROBLEMS AND PROSPECTS OF RED GRAM (TUR) CROP WITH REFERENCE TO CULTIVATION, PROCESSING AND MARKETING IN GULBARGA DISTRICT”
1.3 OBJECTIVES OF THE STUDY

The researcher has considered the following objectives for his research endeavor.

1. To analyze the influence of factors like economic, geographic etc. for production, of Tur in the study area.
2. To give an overview of the growth of production of Tur dal and steps taken by the various government institutions like Red Gram Development Board (RGDB), in cultivation, processing and marketing of the crop.
3. To examine the factors influencing in pricing of Tur in the study area.
4. To identify the marketing system prevailing in trading of Tur dal.
5. To identify and analyze the marketing channels and marketing efficiency in the study area.
6. To estimate the marketing cost and price spread in Tur marketing.
7. To find out the different constraints in marketing faced by Tur farmers.
8. To suggest suitable policy interventions for the development of Tur.

1.4 HYPOTHESIS OF THE STUDY

Hypothesis 1: The production of Tur is positively related to the area under crop.
Hypothesis 2: The quantity of sale of Tur is positively related to the production of the Product.
Hypothesis 3: The sale of Tur is positively related to the price per quintal
Hypothesis 4: Variety of Tur production differs significantly due to the area under crop
Hypothesis 5: Proportion of yield differs significantly due to the area under the crop.
Hypothesis 6: Proportion of yield differs significantly due to the different categories of farmers.

1.5 METHODOLOGY ADOPTED

This chapter deals with the location and agro climatic features of study area, selection of commodities, the sampling techniques adopted, the method of survey, the nature and sources of data and the various tools and techniques employed in analyzing the data and in evaluating the problem.
The survey method has been adopted for data collection. The relevant data was collected with respect to cultivation, processing and marketing of Tur in the Gulbarga district.

Observation method too has been followed in order to personally observe the internal working of Dall mills and commission agents.

Karnataka is purposively selected for the study as it is one of the major Redgram producing states in the country. The state occupies 2\textsuperscript{nd} and 3\textsuperscript{rd} position with respective to area and production of Redgram in the country.

Table No. 1.1: State-wise Area for Arhar (Tur) in India 2007-08 (Area: '000 Hectare)

<table>
<thead>
<tr>
<th>States/UTs</th>
<th>Area</th>
<th>States/UTs</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andhra Pradesh</td>
<td>463.0</td>
<td>Mizoram</td>
<td>0.1</td>
</tr>
<tr>
<td>Arunachal Pradesh</td>
<td>0.5</td>
<td>Nagaland</td>
<td>9.0</td>
</tr>
<tr>
<td>Assam</td>
<td>6.0</td>
<td>Orissa</td>
<td>137.4</td>
</tr>
<tr>
<td>Bihar</td>
<td>34.3</td>
<td>Punjab</td>
<td>6.0</td>
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<td>Chhattisgarh</td>
<td>53.8</td>
<td>Rajasthan</td>
<td>17.7</td>
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<td>Gujarat</td>
<td>265.</td>
<td>Tamil Nadu</td>
<td>30.1</td>
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<td>Tripura</td>
<td>1.2</td>
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<td>Uttar Pradesh</td>
<td>368.0</td>
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<td>Uttaranchal</td>
<td>3.0</td>
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<td>Karnataka</td>
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<td>West Bengal</td>
<td>1.1</td>
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<tr>
<td>Kerala</td>
<td>-</td>
<td>Andaman &amp; Nicobar Islands</td>
<td>0.1</td>
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<tr>
<td>Madhya Pradesh</td>
<td>324.8</td>
<td>Dadra &amp; Nagar Haveli</td>
<td>1.5</td>
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<td>Maharashtra</td>
<td>1175.0</td>
<td>Delhi</td>
<td>0.4</td>
</tr>
<tr>
<td>Meghalaya</td>
<td>0.8</td>
<td>India</td>
<td>3725.8</td>
</tr>
</tbody>
</table>

Source: Ministry of Agriculture, Govt. of India
Graph No. 1.1: State-Wise Area of Arhar (Tur) in India 2007 - 08

State-wise Area for Arhar (Tur) in India 2007 - 08

Source: Ministry of Agriculture, Govt. of India
Table No. 1.2: State-wise Production of Tur in India 2007-08 (Prod:’000 Tonne)

<table>
<thead>
<tr>
<th>States/UTs</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andhra Pradesh</td>
<td>302.0</td>
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<tr>
<td>Arunachal Pradesh</td>
<td>0.5</td>
</tr>
<tr>
<td>Assam</td>
<td>4.0</td>
</tr>
<tr>
<td>Bihar</td>
<td>34.7</td>
</tr>
<tr>
<td>Chhattisgarh</td>
<td>28.1</td>
</tr>
<tr>
<td>Gujarat</td>
<td>294.0</td>
</tr>
<tr>
<td>Haryana</td>
<td>33.0</td>
</tr>
<tr>
<td>Himachal Pradesh</td>
<td>0.0</td>
</tr>
<tr>
<td>Jammu &amp; Kashmir</td>
<td>-</td>
</tr>
<tr>
<td>Jharkhand</td>
<td>93.6</td>
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<tr>
<td>Karnataka</td>
<td>485.0</td>
</tr>
<tr>
<td>Kerala</td>
<td>-</td>
</tr>
<tr>
<td>Madhya Pradesh</td>
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<td>Maharashtra</td>
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<td>Meghalaya</td>
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</tr>
<tr>
<td>Mizoram</td>
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</tr>
<tr>
<td>Nagaland</td>
<td>10.7</td>
</tr>
<tr>
<td>Orissa</td>
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</tr>
<tr>
<td>Punjab</td>
<td>5.4</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>15.5</td>
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<td>Tamil Nadu</td>
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<td>Uttar Pradesh</td>
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<tr>
<td>Uttaranchal</td>
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<tr>
<td>West Bengal</td>
<td>0.9</td>
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<tr>
<td>Andaman &amp; Nicobar Islands</td>
<td>0.1</td>
</tr>
<tr>
<td>Dadra &amp; Nagar Haveli</td>
<td>1.3</td>
</tr>
<tr>
<td>Delhi</td>
<td>0.6</td>
</tr>
<tr>
<td>India</td>
<td>3075.9</td>
</tr>
</tbody>
</table>

Source: Ministry of Agriculture, Govt. of India
Graph No. 1.2: State-wise Production of Tur in India 2007-08 (Prod: '000 Tonnes)

State-wise Area for Arhar (Tur) in India 2007 - 08

Source: Ministry of Agriculture, Govt. of India
1.6 DESCRIPTION OF THE STUDY AREA

The present study has conducted in Gulbarga district of Karnataka state during 2007-08 where the Redgram cultivation is taken up extensively by the farmers.

Gulbarga district is situated in north eastern part of Karnataka state. The soils of this district are deep to very deep black, medium black, sandy loam and light textured soils. The normal annual rainfall is 158.2mm. The total population is 31.3 lakh (2001 census) with literacy percent of 38.54, the total geographical area of the district is 16.102 lakh hectare, out of which 12.74 lakh hectares is under cultivation.

Figure 1.1 Gulbarga District / Study Area Map

Source: District Statistical Office, Gulbarga
1.7 SOURCES OF DATA COLLECTION

Sources of Data Collection:

a) Primary Data: There were three set of respondents rendering primary data, through method of pre tested schedules. Apart from this, additional information was collected through the personal interviews with the concerned persons and Government officials.

b) Secondary Data: The secondary data necessary for fulfillment and completion of the investigation was collected though the various books, journals, magazines and through the internet.

1.8 METHODS OF DATA ANALYSIS

Three sets of primary data collected through schedules from the respondents were computer processed. Similarly graphical presentation was also taken care of with computer assistance. With the help of Excel and other statistical tools the entire work has been carried out.

1.9 SAMPLE DESIGN

Selection of districts:

The following table depicts area, production and yield of Redgram in Karnataka. In Karnataka Gulbarga, Bidar and Bijapur occupy first, second and third position as far as total area under Redgram crop is concerned and this crop is cultivated on a large scale in these districts. As Gulbarga district occupies more than 60% of the total area under Redgram in the state this has been chosen for the study purpose.
<table>
<thead>
<tr>
<th>District</th>
<th>Area (In Hect.)</th>
<th>Production (In Tonne)</th>
<th>Yield (Tonne/Hect.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bagalkot</td>
<td>3105</td>
<td>655</td>
<td>0.21</td>
</tr>
<tr>
<td>Bangalore (Rural)</td>
<td>5331</td>
<td>4269</td>
<td>0.80</td>
</tr>
<tr>
<td>Bangalore (Urban)</td>
<td>1008</td>
<td>522</td>
<td>0.52</td>
</tr>
<tr>
<td>Belgaum</td>
<td>5517</td>
<td>1730</td>
<td>0.31</td>
</tr>
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<td>Bellary</td>
<td>8889</td>
<td>4982</td>
<td>0.56</td>
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<td>Bidar</td>
<td>70100</td>
<td>44286</td>
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</tr>
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<td>Bijapur</td>
<td>36948</td>
<td>7055</td>
<td>0.19</td>
</tr>
<tr>
<td>Chamarajannagar</td>
<td>1898</td>
<td>1067</td>
<td>0.56</td>
</tr>
<tr>
<td>Chikmagalur</td>
<td>891</td>
<td>461</td>
<td>0.52</td>
</tr>
<tr>
<td>Chitradurga</td>
<td>7746</td>
<td>5320</td>
<td>0.69</td>
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<td>Davangere</td>
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<td>7165</td>
<td>1.23</td>
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<td>Dharwad</td>
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<td>1627</td>
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<td>Gadag</td>
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<td>1214</td>
<td>0.44</td>
</tr>
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<td>Gulbarga</td>
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<td>177356</td>
<td>0.51</td>
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<td>Hassan</td>
<td>2111</td>
<td>921</td>
<td>0.44</td>
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<td>Haveri</td>
<td>4375</td>
<td>1517</td>
<td>0.35</td>
</tr>
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<td>Kolar</td>
<td>7907</td>
<td>6332</td>
<td>0.80</td>
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<tr>
<td>Koppal</td>
<td>11807</td>
<td>2490</td>
<td>0.21</td>
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<tr>
<td>Mandya</td>
<td>1245</td>
<td>645</td>
<td>0.52</td>
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<td>Mysore</td>
<td>5345</td>
<td>3214</td>
<td>0.60</td>
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<tr>
<td>Raichur</td>
<td>17583</td>
<td>8569</td>
<td>0.49</td>
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<td>Shimoga</td>
<td>324</td>
<td>168</td>
<td>0.52</td>
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<tr>
<td>Tumkur</td>
<td>12595</td>
<td>9465</td>
<td>0.75</td>
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<tr>
<td>Uttarakannada</td>
<td>160</td>
<td>83</td>
<td>0.52</td>
</tr>
</tbody>
</table>

Source: Ministry of Agriculture, Govt. of India
Graph No.1.3: District wise area and production under Tur Crop 2004-05

Source: Ministry of Agriculture, Govt. of India

Selection of Taluka

Gulbarga district consists of 10 taluka, out of which 3 taluka have been selected for the study purpose on the basis of the area under Redgram crop. The Jevargi taluka stands first followed by Chittapur and Gulbarga with respect to area and hence these 3 taluka were selected for the study purpose.
Table No. 1.4: Area under Tur crop during 2008-09 in different taluka of Gulbarga District

<table>
<thead>
<tr>
<th>Taluka</th>
<th>Area (ha)</th>
</tr>
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<tbody>
<tr>
<td>Afzalpur</td>
<td>37907</td>
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<td>Aland</td>
<td>21863</td>
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<tr>
<td>Chincholi</td>
<td>41261</td>
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<td>Chittapur</td>
<td>50500</td>
</tr>
<tr>
<td>Gulbarga</td>
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</tr>
<tr>
<td>Jevargi</td>
<td>61590</td>
</tr>
<tr>
<td>Sedam</td>
<td>29358</td>
</tr>
<tr>
<td>Shahpur</td>
<td>10165</td>
</tr>
<tr>
<td>Surpur</td>
<td>7660</td>
</tr>
<tr>
<td>Yadgir</td>
<td>23440</td>
</tr>
<tr>
<td>Total</td>
<td>328545</td>
</tr>
</tbody>
</table>

Source: Office of Joint Director (Agriculture), Gulbarga

Graph No.: 1.4: Area under Tur crop during 2008-09 in different taluka of Gulbarga District

Source: Office of Joint Director (Agriculture), Gulbarga
Selection of Farmers

For the study purpose the researcher has taken three taluka i.e. Chittapur, Gulbarga and Jewargi. Each of these taluka consists of 122, 136 and 145 villages respectfully. On an average each of these villages has 187, 189 and 172 cultivators. The researcher has adopted stratified random sampling technique for the purpose of drawing sample from each of these taluka. Accordingly researcher has taken sample from each stratum i.e. 60 respondents from Chittapur taluka, 68 from Gulbarga taluka and 72 from Jewargi taluka. A sample size of 200 farmers from three taluka was taken. This will give a representative sample on an average of 67 farmers per taluka. These 67 farmers representing the sample across different sizes of land holdings. The sampling size was also considered as a homogenous sample for the cultural practices followed in this region.

Table No: 1.5: Number of Dall Mills & Commission Agents in Gulbarga district registered with Dept. of Commercial Taxes

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Total Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dall Mills / Industries</td>
<td>206</td>
</tr>
<tr>
<td>Commission Agents</td>
<td>87</td>
</tr>
</tbody>
</table>

Source: Dept. of Commercial Taxes

Graph No: 1.5: Number of Dall Mills & Commission Agents in Gulbarga district registered with Dept. of Commercial Taxes

Source: Dept. of Commercial Taxes
Selection of processing units

There were 206 processing units in Gulbarga district of which Gulbarga city alone has 164 registered units. Therefore, selection of processing units was confined to Gulbarga city only. Researcher has made use of lottery system for selecting 100 units out of 164 Dall mills which is more than 30% of total population.

Selection of Market Intermediaries

The researcher has approached the available intermediary who are directly or indirectly involved in distribution of Tur dall in Gulbarga district. The intermediaries who are willing to cooperate and participate in the research process were considered as final respondents. Since the Redgram market structure of Gulbarga district predominately consisted of commission agents and Dall millers, 50 commission agents were randomly selected by simple random sampling method.

Karnataka is one among the seven major pulse growing states in the country which accounts for 6.91 per cent of the area and 4.3 per cent of the production (1994-95). Almost all types of pulse crops are cultivated in Karnataka but the important pulse crops which are cultivated on large scale include pigeonpea, chickpea, green gram and blackgram. These four crops together account for 61.21 per cent of total pulse are in Karnataka.

In Karnataka, the important districts cultivating pulses include Belgaum, Bidar, Bijapur, Dharwad, Gulbarga, Mandya, Mysore and Raichur. These eight districts together share about 76.62 per cent of the area and 75.92 per cent of the pulse production in the state. In the recent past, though sufficient work has been done to improve pulses production, the marketing aspect has been neglected. So the efforts to increase production by itself would not yield sustained results unless an appropriate and orderly marketing system is established to assure a remunerative price to the farmer. “Hence an in-depth study of marketing of pulses assumes greater relevance and will be of practical significance”.

In view of the importance of pulses in Karnataka, the present study was undertaken to analyze some of the above mentioned aspects in the present marketing system of Tur in major pulse growing district of the state.
1.10 SCOPE OF THE STUDY

Tur is the major pulse crop of the study region, however its area is fluctuating from year to year due to high incidence of pests and diseases and market price. Thus, farmers blame that they are not getting the remunerative prices for their produce on the one hand and incurring high cost of cultivation on the other. The farmers are taking their produce to neighboring states due to the lower price and lack of other marketing facilities. Several factors effect both production and marketing of Tur. Seasonal rains too have a say in production despite enhancement of area of production or allocation of a higher percentage of land in one’s holding. Not many farmers would like to go for higher rabi production when they can produce other crops. From farmers stand point the least risk and the least cost of production would be Kharif season. Market demand too is seasonal and the movement of produce to coincidence with the market demand determines fair price and earning to the farmer. However that is not the case.

The jinx of demand-supply-price connection continues with farmers offloading the produce with market intermediaries, most often than not, at the hands of commission agents. The extent of farmers selling the produce directly to the processing units would be interesting and is included in the scope of this study.

Alternatively, processing units themselves might have stagnated with the traditionally idea of procurement from commission agents than from farmers.

The topical scope of the study covers the cultivation, processing and marketing practices adopted by respective units. The geographical scope of the study has been restricted to the Gulbarga district of Karnataka State. The analytical scope covers the fulfillment of the objectives set out for the study. The functional scope is confined to offering certain meaningful suggestions for the improvement of the cultivation, processing and marketing practices in the respective units.

Hence, it is necessary to study the trend in area and production along with the resource use efficiency of various inputs including IPM technology for their adoption on large scale by utilizing inputs optimally, which in turn would help in increasing the production. The evaluation of performance of processing units is also necessary to understand the various factors governing the efficiency of processing units. Thus, the findings of the study would throw light on various issues related to production,
processing and marketing of Redgram which would be helpful to policy makers, administrators, farmers etc., in formulating the appropriate strategies / measures to combat the above problems.

1.11 SIGNIFICANCE OF THE STUDY

Agricultural marketing is an area for the second generation of green revolution problems. Market information is an important aspect of agricultural marketing. The importance of sound agricultural marketing policies for ensuring fair returns to the farmers can hardly be overemphasized. It, therefore, becomes necessary on the part of regulatory agencies to ensure remunerative prices to the farmers for the sale of their produce, to boost up their efforts for increasing and sustaining the agricultural production. There is a need to evolve effective crop planning for the seasons based on market information and trends. Although agriculture production cannot be as precise as industrial production to match the market demands, framers are better off when the market forecast is available during sowing season. That itself is a kind of guarantee of selling the produce.

It is ideal to have the market condition with least intervention form Government. However the circumstances where multiple factors dynamically influence agricultural productions, it is eminent to have farmers interests protected.

This study also signifies the disparity in production and productivity against the land holding pattern. It is worth noting how the identified land holding segments – small, medium and large alike can improve upon production and productivity, where would the Tur research come in to play in achieving better production.

A number of measures have been taken by the Government to protect and safeguard the interests of farmers, like regulation of markets, grading of agricultural produce, cooperative marketing etc. Still the benefits are not percolating down to the farmers, as they are unable to plan their strategies for sale of their produce at remunerative prices, in the absence of correct and timely marketing channel and availability of prices and market trend etc.
This way the study helps the farming community of Gulbarga district in order to find out the better marketing channel etc and help them to sell their produce for the better price.

1.12 REVIEW OF LITERATURE

In this chapter, with a view to evaluate the objectives of the study, the findings of some of the earlier research studies and the methodology adopted there in have been reviewed. It was hoped that such a review of literature connected with the production and marketing performance of pulses in India and abroad as well as the related crops would provide a basis either for conforming the earlier results or for contradicting them and thereby suggesting the points for further improvement.

Looking to the objectives of the study, the review of literature is presented under the following heads.

- Growth performance of pulses
- Price and non-price variables influencing production
- Structure, conduct and performance of farm commodities markets
- Pace and pattern of arrivals and prices
- Marketing costs, margins and price spread
- Constraints in production and marketing of pulses

GROWTH PERFORMANCE OF PULSES

[1]Kahlan et al (1968) studied the growth performance of the selected crops in Punjab for the period, 1950-51 to 1965-66. They estimated crop-wise and district-wise growth rates. Their study revealed that the extension of irrigation facility to dry districts led to changes in cropping pattern. They also found that overall increase in the growth rates for major crops was the outcome of extended area under these crops rather than from an increase in their productivity.

[2]Pereira (1976) studied the compound growth rates of output at the district and state level in Karnataka for the period 1956 to 1973. The growth rates in the production of ragi, cotton, groundnut and tobacco were negative during the green revolution period,
all the crops except Bengal gram has positive growth in production. In the state, Shimoga, Raichur and Hassan districts has growth rates of more than four per cent. Tumkur, Dharwad, and Kolar districts had registered growth rates of below one per cent in the total agricultural production. The productivity component was the most dominant source of growth during post green revolution period.

[3] Gengawar and Pandey (1982) analyzed the trend in area, production and yield of different pulse crops and total pulses for the period 1970-71 to 80-81 by fitting simple linear trend equation of the form y=a+bt. The production of gram during the drought years 1973-74 and 74-75 had declined by 19 and 21 per cent over its production in 1971-72. the percentage annual growth rates with respect to area, production and productivity were 1.06, 0.87 and 0.21 in the case of tur, 2.62, 2.61 and 0.02 in respect of moong, 1.84, 2.90 and 3.75 in respect of urd and 0.40, -0.10 and -0.53 in case of total pulses, respectively. Thus it is evident that there has been stagnation in pulse production during the last decade.

[4] Saraswat (1984) studied the compound growth rates of pulses in Himachal Pradesh for period 1966-67 to 1779-80 by fitting the exponential function \( Y=AB^t \). The results revealed that the compound growth rate of area for the state, as a whole was 2.45 per cent annum and the two districts of Belaspur and Una had a higher growth rate than the state acreage. The production and yield have shown a growth rate of 3.33 per cent and 1.52 per cent per annum respectively. All districts in the state except Shimla, Chamba and Kinnaur revealed positive growth rates. The main reason for slow growth of yield coopered to area and production is the prevalence of unprecedented rains during 1971-72 and prolonged drought conditions in 1974-75 and 1979-80, which seriously affected the kharief crop. Further, unfavorable weather conditions during the years 1967-70, 1973-74 1976-77 and 1979-80 also affected the rabi crops.

[5] Chatha and Joginder Singh (1985) analyzed the compound growth rates of area and production of pulses in Punjab for two periods, ie from 1961-62 to 1970-71 the green revolution period and from 1971-72 to 1980-81 for the post green revolution period. The
result showed a negative growth rate was highly significant during 1961-71 and non significant during 1971-81, gram and massar during 1961-71 showed significantly negative growth rates in area and production. Mooing crop also showed slow-growth though significant at 5 per cent leve.

[6] Range rao and Ray (1985) analyzed the compound growth rates of gram, tur and total pulses by using exponential function $Y=ab^t$ for the period 1967-68 to 1983-84. Overall growth rates of production and yield were negative and as low as -0.61 and -0.25 per cent, respectively. The growth rate of area and production of tur was 1.01 per cent and 1.32 per cent, respectively, whereas yield rate was only 0.36 per cent. The area, production and yield of total pulses were more or less stagnant.

[7] Sikka and Vaidya (1985) analysed the area, yield and output of major crops in Himachal Pradesh by using compound growth rate function to examine the performance of agriculture in Himachal Pradesh. The aggregate production of cereals, pulses and foodgrains have shown positive growth and the highest rate among these was that of pulses (3.33 per cent). Among the different pulse crops, gram showed highest growth rate of 4.20 per cent, 6.16 per cent and 7.30 per cent with respect to area, yield and output respectively for the period 1966-67 to 1979-80. The ecological and topographical factors constitute main constraints for growth in yield and crop output in Himachal Pradesh.

[8] Chatha and Singh (1986) found that growth of area in pulses was significantly negative and that of oilseeds though positive but non-significant in Punjab. They opined that risk in productivity and price did not significantly affect the area under pulses, while in case of oilseeds the variance in productivity had a significant effect on area.

[9] Acharya (1993) studied the compound growth rates of pulses in India for different periods namely pre-green revolution period 1950-51 to 1964-65, Green revolution period (1966-67 to 1980-81) and post-green revolution period (1981-82 to 1990-91). During 1950-51 to 64-65, the area, production and productivity of total pulses have registered a growth rate of 1.77, 0.40 and 2.19 per cent per annum respectively
while during 1966-67 to 1980-81, pulses were pushed to marginal lands as irrigated and fertile lands got diverted to wheat and paddy where the increased prices made these crops more profitable as a result area and yield of pulses declined considerably. The per cent per annum during 1981-82 to 1990-91. This happened due to improvement in the yield per hectare.

[10] Choudhari et al. (1993) in their study on growth rates in area, production and productivity of gram in Bihar indicated that the compound growth rate in area (-4.62%) and production (-3.32%) were negative while in productivity it was positive (1.67%) and significant.

[11] Singh et al. (1993) analyzed the compound growth rates of area, production and productivity of gram in Bihar for the period 1960-61 to 1989-90. The results revealed that the compound growth rate of gram showed negative growth in case of area (4.62 per cent) and production (3.22 per cent) where as in case of productivity the growth rate of 1.67 per cent was positive and significant (at 1 per cent), implying thereby the increase in productivity per unit area despite reduction in gross area owing to various factors.

[12] Hiremath et al. (1994) studied the growth rates in area, production and productivity of important pulse crops in Karnataka for the period 1984-85 to 1993-94 for important pulse crops. The annual growth rate in area under red gram decreased steadily (0.067 per cent) over the period from 1984 to 1994 where as in other pulse crops it increased. The area under blackgram (5.4 per cent) and Bengal gram (1.12 per cent). With respect to production, blackgram registered a higher growth rate (5.50 per cent) followed by green gram (4.9 per cent) and both cent) followed by green gram (4.9 per cent) and both were statistically significant. The growth rate of Bengal gram was 0.38 per cent and that of red gram was -3.25 per cent.

[13] Goswami et al. (1995) made an attempt to analyze the compound growth rates of area, yield and production of total pulses, gram and tur. The compound growth
rate of area of total pulses and gram (1.77 and 1.82 per cent respectively) was higher in Phase – I (1950-51 to 1964-65) as compared to Phase-II (1967-68 to 1980-81) and Phase III (1981-82 to 1990-91. However, the highest growth rate of area of tur to the extent of 2.28 per cent was noticed in Phase III. The growth rate of total pulses and gram was found to be 1.04 and 1.03 per cent in Phase-III. While growth rate of yield of tur was negative both in Phase-I and Phase-III. Higher compound growth rate of production to the extent of 2.19 and 2.66 per cent in case of total pulses and gram was noticed in Phase-I. The highest, 0.82 per cent compound growth rate in production of tur was noticed in Phase-III. Increase in area contributed for higher growth rate in production of total pulses and gram for phase-I while increase in yield was responsible in growth in production in Phase-III.

[14] Kumar Priya Ranjan (1996) studied the compound growth rates of area, production and productivity of pulses in North Bihar region covering two zones, Zone-I and Zone-II. The changes in area, production and productivity have been examined for 24 years in two periods ie early period of green revolution (1974-84 and later period of green revolution (1984-94). The annual growth rates of area under Tur was negative (-3.0 per cent) during study period which remained negative during 1970s and 1980s but turned out to be positive during early nineties. Area under gram also witnessed negative growth rate (-3.3 per cent), but the rate of decline slowed down during early 1990s. It was finally concluded that inspite of negative growth rates in area under major pulse crops the area under total pulses showed positive growth rate in both the zones, indicating an increase in area under minor pulses like greengram and blackgram which have been adopted as Kharif and summer crops in the project area.

[15] Patel et al. (1996) studied the compound growth rates of pulses in selected districts of Gujarat for the period 1949-1991. For Gujarat state as a whole, the production growth rate for the study period worked out to 3.05 per cent, the growth rate in area and yield was 0.70 per cent and 2.19 per cent, respectively. Surendranagar district registered highest growth rate in area (4.78 per cent) and production (6.82 per cent). The
figure of coefficient of variation was found to be 43.63 percent for production, 22.65 per cent for area and 29.22 per cent for yield.

[16] Ram D Singh (1996) studied the growth trend for four major pulse crops in 4 regions of Uttar Pradesh. The growth rates were calculated with the help of simple regression equation with the time trend as the sole explanatory variable of the four regions. The Bundelkhand region showed consistently positive growth, while the rest of the three regions showed negative growth in acreage under all the major pulse crops. The annual growth rate of gram varies. From 0.9 per cent in the Bundelkhand region -2.1 per cent in the western region. The western region has suffered the most in terms of displacement of acreage under all the pulse crops under study, the decline being the highest (7.5 per cent per annum ) for green (mong).

[17] Dhindsa and Anjusharama (1997) made an attempt to study the compound growth rates of area, production and productivity of pulses in Punjab for the period 1966-67 to 1991-92. the negative growth of production of pulses can be mainly attributed to a decline in area and stagnancy in the yield of various pulse crops. Gram has shown decline in its area and production in most of the regions. The yield of maser has shown significant positive growth rate in two regions and in the state as a whole during 1966-92. The area under moong crop has shown a very high growth of rate of 13.79 per cent per annum during 1966-92 in Punjab state as a whole. The yield has also shown significant positive rates of growth in two regions of the state.

[18] Kandappa Kumar Barman (1997) studied the compound growth rates of area, production and productivity of pulses in Assam for the period 1967-68 to 1989-90. It was found that the compound growth, rates of production of gram, tur, other pulses and total pulses were 3.75 per cent, 5.03 per cent 2.64 per cent and 2.85 per cent, respectively. The growth rate of production of tur was found to be the highest but its yield growth rate was negative being -0.51 per cent per annum. The growth rates of area under different pulses turn out to be positive in case of Assam and these are much higher than the corresponding growth rates in case of India. He concluded that on production front. Special efforts
should be made to generate and transfer appropriate technology for dry farming and limited irrigated agriculture.

[19] Sawant (1997) studied the growth performance of India’s agriculture sector during different periods. Compound annual growth rates (CAGRs) were estimated by fitting a log-linear trend function, namely log \( Y = a + bt \) to the time period specified namely period I (968-69 to 1980-81) and period-II (1981-82 to 1994-95). The growth scenario for pulses indicated that from acute stagnation in output in the early part of the green revolution period, the situation improved to a positive significant but low growth in output (CAGR=1 per cent) after 1981. The former was the outcome of low pace of expansion in area accompanied by declines in the yield per hectare of pulses while in the post 1981 period, expansion in pulses output was totally induced by growth in their yield per hectare (CAGR=1 per cent). The dismal performance of the two major pulses, namely, gram and tur, was largely responsible for low level of output growth for all pulses after 1981. By and large, however, pulses represented a group of slow growing crops throughout the green revolution period.

[20] Singh et al. (1997) while assessing the regional variations in agricultural performance in India estimated the compound growth rates of area, production and yield of pulses by fitting log-linear functions of the form \( \log Y = a + bt \). The data were analyzed for 3 times period’s viz., period I (1960-61 to 67-68), period-II (1968-69 to 1980-81) and period III (1981-82 to 1992-93). In almost all the states selected for analysis. The growth rates of pulses were highest during period II. In Karnataka during the same period, significant growth rates were observed with respect to area (1.93 per cent), production (1.72 per cent) and productivity (3.66 per cent).

**COMPONENTS OF CHANGES IN PRODUCTION**

The studies pertaining to contribution of area, production and their interaction effect towards production of a crop is reviewed hereunder.

[21] Singh and Gangawar (1986) studied the interaction effect between yield, price and area on the value of pulse production in Haryana by using decomposition
The reduction in area adversely affected the increase in value of production by 16.53, 63.78 and 7.52 per cent in gram, green gram and lentil, respectively. The yield effect in case of gram, greengram, blackgram and lentil was 13.31, 95.80, 9.32 and 12.13 per cent, respectively. The price effect was so powerful in case of all the pulse crops that it had offset the negative effect of area and interactions. The total interaction effect was negative in pulses except in blackgram and lentil.

[22] Gangawar and Rai (1988) examined the total change in production/value of output of oilseeds by decomposing the area, yield and price and their interaction. According to them, in the case of total edible oilseeds, the area effect in general was higher than the yield effect with the exception of Tamil-Nadu, Maharashtra and Andhra pradesh, where yield effect dominated. However, when the price factor was included, its effect on individual oilseed crops was found to be most powerful force accounting for more than 60 per cent increase in value of production of oilseeds yield.

[23] Cauvery (1991) following Minnas and Vaidyanathan, identified the contribution of different elements to the changed production of groundnut in Tamil Nadu and reported that the contribution of yield was more than that of area, to the total output of groundnut.

[24] Mitra and Jena (1991) estimated the contribution of area, yield and their interaction to the total change in production of groundnut in Orissa using Minhas additive decomposition model. The effect of area component was found to be the highest (80.55%) during period-II (1967-70 to 1983-86) but it was reduced to 51.34% per cent for the period III (1950-53 to 1983-86) under study. The effect of yield component was observed to have the highest contribution (24.79%) in period I (1950-53 to 1962-65) and then reduced drastically to 4.11 per cent in period III.

[25] Mundinamani (1993) in his study on production and marketing performance of oilseeds in Karnataka, estimated the contribution of area, yield and their interaction in affecting production of individual as well as total oilseeds. The results indicated that the area was found to have negative impact on production of individual and total oilseeds in the study area except for Dharwad district during pre-green revolution period and positive
impact in most of the cases during post-green revolution and overall periods. The yield and interaction effects recorded mixed results. In general, the increased output of oilseeds in the study area was a result of expansion of areas under the crops rather than increments in yield.

The foregoing studies revealed that the contribution of area, yield and their interaction to the total production varied from region to region and from time to time. Most of the studies revealed that the increased output was due to positive contribution of area and yield. However, the area over-shadowed the yield and emerged as main contributor for increased output.

**PRICE AND NON-PRICE VARIABLES INFLUENCING PRODUCTION**

Price is certainly an effective factor in increasing agricultural production. Apart from price there are also some non-price factors which do influence the production. Reviews pertaining to these aspects are presented as they have a distinct relationship with this study.

[26] Rajagopalan (1967) considered the prices received by farmers for their products at the point of first sale as the ideal data for estimating farmer’s response to price changes. In the absence of such data, he used wholesale prices for the purpose. He took prices both in absolute and relative terms and opined that better results were obtained when absolute prices of crop and its substitute crops were made use of in the model.

[27] Sawant (1978) noticed that technological advancement might induce a shift in supply function either through changes in the proportion of inputs used in agriculture or through changes in the levels of "output per unit of input used or changes in both. She used 'trend' as a 'catch all' variable to take care of the gradual changes in technology. To account for the weather factor in hectarage response, she took average rainfall in the three pre-sowing months.

[28] Singh (1979) considered yields of both pulse and non-pulse crops in the particular season, irrigation facility, average rainfall during critical periods of crop growth, risk arising from price and yield variation as the factors in his analytical model to study the shift in pulse acreage.
[29] Dixit (1982) opined that relative post harvest price of groundnut, with the production of competing crops used “as the weights, would be an appropriate price specification having a bearing on the supply of groundnut.

[30] Acharya (1985) analyzed the role of price and non-price factors influencing the production of pulses in Rajasthan state by variables associated were lagged price of gram, wheat ' and rape seed-mustard, lagged yields of gram, wheat and rapeseed-mustard, current year rainfall during September-October and June-September months and gross irrigated area. The results of the study revealed that the first three principal components accounted for 82.66 per cent of the variation in all the explanatory factors. The correlation co-efficient between principal components and explanatory factors showed that the first principal component was identified closely with lagged price, lagged wheat yield and gross irrigated area. Second and third principal components were closely associated with rainfall.

[31] Shantisarup and Pandey (1990) analyzed the price and non price factors influencing tur production. The study is related to nine important tur growing states of India for the period 1963-64 to 1979-80. The study revealed that the price factor has been almost dominated by the other non-price factors in some of the states. The impact of relative prices on tur acreage is observed to be positive and significant in Gujarat and Uttar Pradesh and negative in Madhya Pradesh. Regression coefficients of relative irrigated area are found to be positive and significant in Bihar and Tamil Nadu. The coefficient relating to relative yield was observed to be significant and positive in the state of Tamil Nadu and Uttar Pradesh.

[32] Mundinamani (1993) identified the price and non-price factors influencing the production of oilseeds in Karnataka. The data collected were subjected to principal component analysis and the results revealed that the first principal component explained most of the variation in the explanatory variables. The percentage of variation ranged from as low as 62.70 per cent in case of groundnut in Dharwad to as high as 76.30 per cent with respect to sunflower in the same district. The price and yield variables were mostly associated with the first component in all the crops and
districts, rainfall variable either with the second or third, component. The association of area, net sown area and gross cropped area could be identified either with first or second or third components.

In the above reviews, the important non-price factors influencing the production are lagged yield of the crop, rainfall, gross cropped area, net sown area and gross irrigated area.

STRUCTURE, CONDUCT AND PERFORMANCE OF FARM COMMODITIES MARKETS

The extent of concentration represents the control of an individual firm or a group of firms over the buying and selling of the produce and is measured by the number and size of the firms existing in the market. The concentration of market power is an important element of market structure and determines the nature of competition and consequently of market conduct and performance. The studies pertaining to market structure, conduct and performance are reviewed in this section.

[33] Bain (1959) examined the market structure, conduct and performance of American industries with a view to establish inter-relationships among these variables. The author emphasized the following factors in the study of market structure.

I. The degree of seller’s concentration
II. The degree of buyer’s concentration
III. Size of the distributing firms
IV. Degree of product differentiation, and
V. The condition of entry in the market.

[34] Cloudius and Mueller (1961) clarified the concept of market structure, conduct and performance in a wider perspective and recommended the use of Bains concepts in empirical studies. The author urged the potential research workers to conduct field investigation on

I. The relationship between market structure, conduct and performance and technological change.
II. The impact of cooperative institutions on market structure and
III. Impact of government intervention on market structure of products, among other things.
[35] Sosmick (1961) gave a theoretical framework of analyzing market structure, conduct and performance and held that the term market performance stands for the outcome of an action in the market, which would be reflected in the quantity a buyer would buy from seller, the market price, the transfer cost and profit of the firms operating in the market.

[36] Williams (1966) reported that the study of market structure had a key role to play in the transformation of the traditional agriculture. It was mentioned that the ultimate goal of the study was the development of criteria for use in policy formulation in the field of business competition, market regulation and market power.

[37] Hoffman (1969) examined the implications of changing competition in the food trade. It was observed that the large firms would perform the function more efficiently than the small ones. It was felt that it would be wrong to examine the market structure just in terms of the number of firms in the market. More important than the number was the attitude of competing firms towards each other.

[38] Holmes (1970) examined the market structure in a North Indian Tahsil. The number, size and spatial location of marketing agents, conditions of entry into the market and availability of price information to farmers were the factors considered in the market structure. It appeared that the food grain marketing system had a basic strength. The analysis of structure indicated the existence of a substantially competitive environment.

[39] Krishnaswamy (1971) evaluated the structure of selected food grain markets in Rajasthan on the basis of buyers and sellers concentration and concluded that the food grain marketing system was fairly competitive.

[40] Chouhan and Singh (1973) analyzed the structure of Rajasthan wheat market. The study revealed that marketing of wheat in the state was dominated by private traders, particularly whole sale traders. The competition in the market was imperfect.
According to the authors, the farmers having a poor retention capacity were the worst affected under imperfect conditions in the wholesale market of Rajasthan.

[41] Singh and Arora (1975) analyzed the spatial price differentials in groundnut in the Punjab markets and found that the markets were not integrated spatially because of the wide variations in prices of groundnut. They considered this variation was due to variation in the number of intermediaries like commission agents, processing units etc in the market.

[42] Bhide et al. (1981) examined the structural changes in the areca nut market of Mangalore, using data on the size distribution of firms and coefficients of inequality for the period 1965-66 to 1972-73. The analysis suggested an increasing degree of competitiveness in the market structure, characterized by a more equal distribution of shares in the market transactions.

[43] Eliga and Robinson (1981) examined the market integration interns of storage cost of cowpea in Nigeria and found that, on an average, stocks had to be held for about eight months to achieve maximum gains. There was a high degree of variability from year to year in prices and arrivals/ which meant that a farmer or a trader could not be assured of profits from storage every year.

[44] Aulukh (1983) studied the food grain market structure of Punjab and found that a few large buyers purchased the major share of total arrivals. There was no indication of collusion among these traders and finally concluded that, by and large, food grain markets in Punjab were competitive in operation.

[45] Elangavan and Zeaudeen (1983) studied the market structure of groundnut in Ramanatha Puram district of Tamil Nadu. Time series data on volume and value of transactions of both buyers and sellers were collected from 1969 to 1981 to study their concentration in the regulated market. The market structure was analyzed by computing the coefficient of inequality from size-distribution of buyers and sellers. The coefficient
of inequality of size-distribution of firms came down from 0.55 to 0.38 over the study period, indicating a steady improvement in the size-distribution of shares towards a greater degree of competitiveness in the market structure. The coefficient of inequality of size-distribution of buyers showed a still greater decline from 0.82 to 0.42 indicating greater competitiveness among the buyers.

[46] Patnaik (1989) studied the inter-market integration in groundnut products price formation in six markets of Rayalseema region of Andhra Pradesh using correlation coefficient analysis. He reported that the oil markets were better integrated as most of the oil prices were found to be highly correlated.

[47] Sujatha et al. (1989) worked out the lorenze coefficient or giniratio for rice; ragi, onion and potato at the Bangalore regulated market to assess the performance of market intermediaries. The higher degree of competitiveness in rice marketing was confirmed by the low values of Gini ratio. The computed values were 0.34 in 1985 and 0.38 in 1986. Similar results were obtained in case of ragi also with Gini ratios 0.42 and 0.41 during 1985 and 1986 respectively, indicating a more or less competitive market structure. Gini ratio was very high for onion (0.70 and 0.66) as well as potato (0.62 and 0.55) both during 1985 and 1986. The potato and onion markets were less competitive when compared to rice and ragi.

[48] Dinakar (1990) assessed the extent of price integration between the markets by using coefficient of variation. He noticed a ‘poor integration between the village markets and secondary markets as was demonstrated by significant differences in the coefficient of variations of prices.

[49] Anita Arya (1991) analyzed the spatial integration of four markets in Gujarath using zero order price series correlation analysis. She noticed significant and high correlations in the price movements between the markets and concluded that the markets under consideration were integrated in terms of price movements.
The studies reviewed above indicated that, different techniques have been used to assess the nature and magnitude of competition. The views of the researchers were contrasting with respect to concentration of market power which varied from crop to crop and over location and time. However, most of the studies reported a approaching competitiveness for most of the food grain markets.

**PACE AND PATTERN OF ARRIVALS AND PRICES**

The seasonality of arrivals was found to have an impact on commodity prices in the short period and further it could be expected that the larger arrivals would depress prices in certain months of the year, while in other months, the low arrivals would boost up the prices. This effect might be offset in the long run by some other factors depending on their strength. This section reveals the results of earlier studies showing the relationship between arrivals and prices in the long and short run periods.

[50] Singh and George (1972) on the basis of the data for the year 1967-68, found that the bulk of the groundnut produce arriving at the market during the harvesting months of October to December was due to lack of storage facilities and pressing financial needs and this phenomenon lead to a decreasing trend in prices during this period.

[51] Singh and Chandra (1975) in their study on arrivals and prices of rapeseed and mustard in selected markets of Rajasthan for the period 1965-75, found that the arrivals and prices increased simultaneously. This phenomena was attributed to the general increase in the price level due to inflation. However, they have also noticed that the prices were highest during March-June and during October-January when arrivals were observed to be lowest. On the basis of these trends, a significant negative correlation between arrivals and prices was reported.

[52] Verma and Nigam (1979), in their study on arrivals and prices of groundnut in Kanpur district found that arrivals in the mandi were higher during December and February accounting for 56.48 per cent of the total arrivals. While prices were low during
that period, the prices were higher during off season thereby indicating the negative character of the relationship between arrivals and prices. The warehousing and storage facilities had to be increased both in mandi and village markets to reduce price fluctuations over time.

[53] Awasti et al. (1985) studied the relationship between arrivals and prices of groundnut in three groundnut markets in western region of Madhya Pradesh. They observed an abrupt and sudden decline in the price of groundnut just after the harvest period and subsequent moderate price increase up to the month of February. The price after this period increased substantially till August. However, the researchers reported a positive association between the price and arrivals of the produce during the study period.

[54] Muniyandi (1985) in his study on pricing efficiency of groundnut marketing system in North Arcot district had observed two seasonal throughs in price movements. The first one was observed in the month of November in all the selected markets which coincided with the harvest of rainfed groundnut and the second one in the month of March and April coinciding with the harvest of irrigated crop. He concluded that there was no definite relationship between arrivals and prices of groundnut and indicated that prices of groundnut increased without corresponding decrease in arrivals of groundnut and vice-versa.

[55] Eswara Prasad et al. (1989) analyzed the seasonal indices of arrivals and prices of turmeric in Guntur market for the period 1970-71 to 1985-86. The ratio to moving average method was adopted to calculate adjusted seasonal indices. The results revealed that the indices of arrival were higher during March, April, May and June months in both bulbs and fingers, and during these months the price indices were on the lower side in both cases. The lower seasonal indices of arrivals of both bulbs and fingers could be observed during September through February. Consequently the indices were higher during this period in both the cases.
[56] Agarwal and Sharma (1990) analyzed the seasonal indices of pulse crops in Rajasthan. The data on wholesale as well as farm harvest prices of all the pulse crops were collected during the period of 1972-1987. The results indicated that price indices were the lowest during peak arrival months (April-May months for gram and October-November months for moth, moong and urad pulse crops) and highest during sowing season months of the crop (October-November for gram and June-July for moth, moong and urad), Arhar (long duration kharif pulse crop) depicted minimum prices during January-February months and maximum in the month of October.

[57] Naik et al. (1990) analysed the short-term and long-term variations in price and arrivals of groundnut in Gadag and Ranebennur regulated markets in Karnataka. It was found that in Ranebennur market, arrivals were maximum in periods September-October and April-May and in Gadag market during October-January. He concluded from the arrival pattern that farmers sold bulk of their produce immediately after harvest due to their immediate cash needs or due to lack of storage facilities. The analysis of seasonal pattern in price showed the presence of seasonality over months and constancy of this pattern over years in both the markets.

[58] Nawadkar et al.’ (1992) studied the trend in arrivals and prices of selected commodities in Gultekadi regulated market, Pune of Maharashtra state for the period 1983-84 to 1990-91. There was a wide fluctuation in the arrivals of tur in the market which may be attributed to the decline in the area under the crop which resulted in low production. There was no specific trend in the arrivals of gram. The increasing trend of average prices was observed in both the pulses (gram and tur). More over the price of tur had slightly declined during the year 1984-85. The remarkable positive change was observed in the arrivals of tur, gram, tomato and onion and in the prices of tur, grain, tomato, brinjal and onion.

[59] Singh et al. (1995) studied the seasonal variation in arrivals and prices of wheat based on the secondary data obtained from 4 Agricultural produce regulated markets of Bihar. The study indicated that the farmers in the wheat growing areas of the
state bring a substantial part of their produce for sale in the market during post-harvest months (April to July) and get a comparatively lower price for their produce. The wheat arrivals are more sensitive to their ruling prices in secondary markets than that of primary markets.

[60] Sushila srivastava and Brahm Prakash (1996) analyzed the seasonal indices of arrivals and prices of pigeon pea in Uttar Pradesh. For this purpose the data were collected for the period 1984-85 to 1991-92. The results portrayed that the variations in arrivals of pigeon pea varied between 44.05 and 239.07 per cent. The quantum of arrivals of pigeon pea was more than 46 per cent of the total arrivals in the months of April, May and June "i.e., the time immediately after harvest of the crop. The arrivals again decreased in the months of February and March. The variations in monthly wholesale prices varied between 87.32 and 106.43 per cent from the average prices. Prices were lowest in the month of April followed by May and June. Thus prices of pigeon pea decreased in post harvest months and increased with the advancement of the time.

The above mentioned studies reveal the seasonality in market arrivals. The market arrivals exhibited high fluctuations compared to prices and the increased arrivals of pulses found to depress the pulse prices generally. The sowing seasons noticed very low arrivals in the market and the arrivals were high immediately after harvest.

MARKETING COSTS, MARGINS AND PRICE SPREAD

Marketing efficiency is measured based on the information on marketing costs and margins. Many a time, the efficiency of a market over a period of time and space as well, are compared and contrasted with the help of these indicators. Some of the useful studies are briefly reviewed with a view to have an idea about the nature and magnitude of marketing costs, margins and channels followed for disposing of commodities.

[61] Patel (1971) studied the farmer's and intermediary's shares in the price spread of groundnut for Gujarath state for the period 1962-68 and concluded that the millers had increased their share in the consumers rupee and the farmers had not improved their position over the time.
Sharma and Rao (1979) in their study for Andhra Pradesh districts revealed that producer's share in the consumer's rupee varied from crop to crop, except for gram and masoor in channel I a). In general in case of gram either as pulse or cattle feed, producers have fetched higher returns out of the consumer's rupee. Out of four marketing channels:

Channel I (a) —> Producer - Retail shopkeeper - Consumer
Channel I (b) —> Producer - Commission agent - Consumer
Channel I (c) —> Producer - Arhatdar - Consumer
Channel I (d) —> Producer - Arhatdar - Retailer - Consumer

Channel I (d) observed to be inefficient as about 25 per cent of the consumer's rupee is consumed by middlemen as profit. Interestingly inspite of inefficiency, a good number of producer's have availed this channel. The study revealed that, with the increase in the length of channel, producers share even in the same sample decreased.

Singh et al., (1981) studied the economics of marketing and processing Arhar in Unnao district of Uttar Pradesh. They reported that marketing cost per quintal of Arhar was Rs. 4.00 while the producer's share in consumer’s rupee was 80.90 per cent.

Ranade et al. (1982) studied the price spread in groundnut and analyzed the shares of the various participants at macro as well as micro levels. The micro level study indicated that the income of cultivators after vertical integration through co-operatives could be increased by about 35 to 115 per cent depending upon the marketing channel through which integration was affected. The macro study noted with concern the declining share of groundnut growers in the total value generated in the system during the period 1963-64 to 1977-78.

Mamle Desai (1983) studied the economics of marketing of redgram in Gulbarga district of Karnataka state. He has identified three channels namely, Producer —> Commission agent -> wholesaler —> Dalmiller (Channel - I), producer —> dalmiller (Channel - II) and Producer -> village merchant -> dalmiller (Channel - III). The share of
the producer in consumer's rupee was found to be 75.96, 96.74 and 80.41 percents in channel - I, Channel - II and Channel – III respectively.

[66] Chatha and Sidhu (1984) studied the marketing pattern of Kharif pulses in Punjab and observed 3 marketing channels in moong, mash and arhar marketing. The channels are.
i) Producer ->Primary wholesaler —>Retailer —» Consumer ii) Producer -> Retailer —» Consumer iii. Producer -> Consumer

They studied the price spread as difference between the wholesale and retail price. The producer's share in consumer's rupee was 80 per cent in case of mash and moong.

[67] Ugalwat and Kunnal (1989) worked out the producer's share in consumer's rupee for groundnut in Bagalkot and Badami markets. Two channels were identified in marketing of groundnut.

Channel I:
Farmer ‡ Village merchants ‡ Commission agents ‡ Wholesalers ‡ Mill owners

Channel II:
Farmer ‡ Commission agents ‡ Wholesaler ‡ Mill owners

The marketing margins (price spread) constituted about 30 per cent of the retail price charged by the oil miller under channel - 1 in Bagalkot market. In Badarni market they constituted 19 to 25 per cent of the retail price charged by the oilmiller. This clearly indicated superiority of Channel-I in Badami market over that in Bagalkot market. The marketing margins under channel II in Bagalkot market were 22 per cent and 15 to 18 per cent in Badami market. The producer share in consumer rupee was high in Badami market (80 per cent) compared to Bagalkot market (70 per cent)
[68] Naidu and Tirupathaiah (1991) worked out price spread in groundnut marketing under different channels in Vijayanagaram district of Andhra Pradesh. They found that a large proportion of cultivators disposed off their produce through the village markets (channel I). The share of the producer in the consumer's rupee was found to be higher in Channel II (83.63%) compared to channel I (79.66%).

[69] Agarwal arid Sharma (1994), identified five marketing channels in soybean marketing in Rajasthan.

Channel-I: Producer $ seller $ Oilseed grower co operative society $ Tilham Sangh
Channel-II: Producer $ seller $ Commission agent $ Tilham Sangh
Channel-III: Producer $ Seller $ Commission agent $ Local processor
Channel-IV: Producer $ seller $ Commission agent $ Wholesaler $ Local processor
Channel-V: Producer $ seller $ Commission agent $ Wholesaler $ Outside processor.

Producer sellers received highest share of 96.22 per cent of the processors price under Channel-I. In other channels, producer's share ranged between 86 to 92 per cent. The marketing costs ranged from 3.78 per cent in Channel-I to around 8 to 10 per cent in other four channels.

[70] Singh et al. (1994) worked out the economics of pulse marketing in district Banda of Bundelkhand Region (U P) During the year 1992. During the course of his study, he identified three marketing channels where the miller was common in all channels.

i. Producer $ itinerant trader/village bepari $ miller $ wholesaler $ retailer $ consumer
ii. Producer$ commission agents $ wholesaler $ retailer $ consumer,
iii. Producer $ commission agent $ miller $ wholesaler$ retailer $ consumer

The producer could get 81.44, 78.98 and 79.88 per cent of share in the consumer's rupee in the marketing of arhar, gram and lentil respectively. The total margin of the
middlemen involved in the marketing of arhar, gram and lentil between the producer and consumer came to Rs. 56.90, Rs. 58.55 and Rs. 59.40, respectively.

[71] Anita Arya (1995) estimated the producer’s share in consumer's rupee for potato in Gujarat. In 1987-88, producer's share ranged between 51.76 to 60.61 percent in different seasons with an average of 54.72 percent. In the second year i.e., 1988-89 producer's average share has been higher by 8 percent compared to the previous year. However, in the third year i.e., 1989-90 except the October February season, producer's share in the two seasons and Average share has been lower compared to 1988-89 but higher than 1887-88.

[72] Singh and Mohiley (1995) studied the costs and margins in different channels in marketing of Arhar (1975-1995) in Allahabad. They found that producer's share in consumer's rupee was more or less same in both the above periods.

[73] Madan and Singh (1997) in their study on efficiency and price spread of pea marketing in Ranchi district estimated the producer's share in consumer's rupee under 7 channels of pea marketing. Although the producer received net price of Rs. 723.83 per quintal and also the highest percentage of consumer price, 92.33 per cent by selling directly to consumer in periodical/daily market in channel - VII, this channel was of less importance in terms of quantity handled and therefore was excluded from analysis. The relative share of producer in consumers' price was highest in Channel I (60.92%, followed by channels IV to VI (each 57.76%) and channels II (48.18%) and. III (47.01%). It is obvious that channel I provided higher net returns in terms of both relative and absolute price to the farmer.

[74] Vedini (1997) identified two marketing channels for Jasmine marketing in Mysore district of Karnataka namely, producer- traders-commission agents-retailers-consumers and producers-consumers. The results revealed that the margin and cost were highest at retailer’s level because of creation of form utility, i.e. the flowers are converted into garlands, tied flowers, etc. The trader-cum-commission agent’s margin
per kg was Rs. 4 and the commission charges were about 10 per cent. The study explicitly indicated that Jasmine flower trade is a profitable venture with a price-spread of nearly 49 per cent.

The foregoing studies indicated that the channel selected for disposing of the produce plays a crucial role in influencing the magnitude of marketing costs and margins. The studies documented difference in producer's share in consumer's rupee from crop to crop over time and space. The miller was found to be common in most of the channels and the producer's share in consumer's rupee was found to be maximum where the produce sold directly to either itinerant merchants/consumers though this channel was not preferred.

CONTRAINTS IN PRODUCTION AND MARKETING

The farmers often face various problems at different stages of production as well as marketing. Specially in the recent past/ many of the pulse growing farmers in Gulbarga and Bidar districts went for suicide because of their mounting debt as they could not recover even the cost of cultivation on account of number of problems faced by them. Some of the studies pertaining to various constraints faced by the farmers are reviewed hereunder.

[75] Anonymous (1986) studied the problems of increasing production of gram in Sriganganagar district of Rajasthan during the year 1984. The constraints noticed were small size of holdings, lack of technological support, very less area under irrigation (only 2.2 per cent of total cropped area of selected holdings) due to better prospects for other crops like wheat, cotton and mustard, lack of fertilizer and pesticide use, certain natural factors like emergence of blight diseases, occurrence of frost, attack of pests like termites and podborer. The producers suffered more in the case of gram as compared to wheat because of the higher gram price escalations during the successive intervals of its transactions from one hand to another.

[76] Satyanarayana (1988) made an attempt to study the constraints in pulse production in Andhra Pradesh for Blackgram and Green gram. The major constraints
noticed were lack of location specific variety, grown varieties were photosensitive and susceptible to diseases, weed menace, cuscuta problem, moisture stress at the terminal phase, severe diseases like powdery mildew, leaf spot and halitosis. These problems have been sought to be met through a variety of measures including development of improved variety and suitable agronomic practices. Andhra Pradesh Agricultural University has identified and developed a number of improved varieties of blackgram and green gram suitable for rice fallows. These are LEG 17 (Krishnayya) a powdery mildew disease resistant variety, LEG 402 (Prabhava) / a weed resistant variety in the case of Blackgram and Lam M-2 in the case of Green gram.

[77] Singh et al. (1988) listed the major constraints faced in the production of major rabi crops (wheat, gram and sugarcane) in Parua-Nala watershed of Madhya Pradesh. It was found that lack of capital at the time of major farm operations was the main constraint and high prices of fertilizers, lack of irrigation facilities, lack of high yielding seed, unavailability of fertilizers, etc. were the other constraints for low productivity of major rabi crops.

[78] Srivastava et al. (1989) conducted a study to identify the constraints in pulse production in Tal area of Bihar. The study indicated lack and inadequate supply of improved seeds as the major problems in the study area. Therefore four district components of technological improvements were identified in the study area i. Adoption of improved seeds, ii. Seed treatment practices, iii. Use of plant protection measures, iv. Intensive use of machine labour for different farm operations."

[79] Bhatia (1991) noticed some of the economic constraints which retard the growth of pulse production in India. Some of the important constraints were production under rainfed situation low yield and value productivity, higher risk associated with pulse cultivation, low level of technology adoption and susceptibility to pests and diseases. From the point of marketing, the most important problem was the large price spread. To increase the yield per hectare, appropriate measures may have to be taken up for reducing/ shifting the risk of adopting new technology through expansion of crop
insurance scheme to cover pulse crops. Efforts should also be made to improve the efficiency of marketing so that producers could get their due share in the prices paid by the ultimate consumer.

[80] Lal and Brahm Prakash (1996) in their study on economic constraints in pulse marketing mentioned low marketable surplus and large price spread as the problems in marketing. Most of the farmers grow pulses for their own domestic requirement on a limited area. These results in low marketable surplus and the farmers sell the produce at the village level only to the village traders who offer lower price for the produce. The data collected on price spread at Kanpur revealed that the producer’s share in consumer’s rupee remained as low as 60.69 and 50.78 paise in pigeonpea and chickpea respectively. The constraints can be eradicated by appropriate transfer of technology for cultivation of pulses under dry farming or limited irrigation agriculture, expansion of crop insurance schemes to cover pulse crops and improving the marketing efficiency so that the producers could get their due share in the prices paid by the ultimate consumer.

[81] Yadav et al. (1997) noticed some of the important constraints in chickpea production in India which include the technical constraints like non-availability of quality seeds of high yielding varieties, poor response of chickpea crop to high fertility level and managerial constraints like non availability of cheap and good quality insecticides and pesticides to chickpea farmers, lack of systematic linkage between chickpea scientists - extension workers-farmers. The socio-economic constraints included lack of incentive to chickpea growing farmers, low procurement and support price to pulses and poor agro-based marketing infrastructure in chickpea growing areas.

Most of the studies indicated the problems of non availability of high yielding variety and good quality pesticides, lack of irrigation facilities as the major problems in production of pulses and low procurement and low support price as the major problems in marketing of pulses.
1.13 OUTLINE OF THE STUDY

Chapter- 1 Research Design and Review of Literature
In this chapter an exhaustive discussions pertaining to objectives of the study, the methodology adopted, the hypothesis framed, description of study area and et.al has been presented.

Chapter - 2 Conceptual Backgrounds
This chapter deals with theoretical aspects regarding general agriculture cultivation practices, processing and marketing of agricultural goods.

Chapter - 3 An Overview of Tur Industry
This chapter covers overall Tur industry scenario, various cultivation practice followed by the farming community, processing of Tur dall and the various aspects of marketing with respect to Tur.

Chapter - 4 Data Presentation and Analysis
Here the survey data has been tabulated and analyzed processed with the help of computer software packages and other statistical tools and other relevant techniques.

Chapter - 5 Conclusions and Suggestions
The final chapter infers the various findings in the form of conclusions and suggestions being made in the light of findings.

ANNEXURE

BIBLIOGRAPHY
REFERENCES


