CHAPTER-II

REVIEW OF LITERATURE

Some important studies relating to production and marketing of agricultural products have been analyzed in this chapter taking into consideration of state level as well as national level studies. Present chapter provides the information to the researchers regarding the previous works done in their area of research and thereby helps them in identifying the theoretical framework and methodological issues relevant to the study. It provides the researchers a proper direction to carry out their research work and enables them to arrive at meaningful results. Keeping these facts in view, the available literature relevant to the objectives of the present study was reviewed and is presented.

Pereira (1976) analyzed growth rates of crop output in Karnataka during the period 1955-56 to 1972-73. Three types of growth functions were used namely linear, geometric and quadratic separately for the three sub periods. The analysis concluded that over the aggregate period, with the exception of sorghum, caster, pulses and tobacco, the rest of the crops recorded positive growth rates in their acreage. In case of productivity, it was observed that the green revolution period was more favorable for most of the crops in the state. However, the study revealed that the growth rate of area under groundnut during the green revolution period was marginally decelerating at 0.61 percent but productivity was increasing at the rate of 1.81 percent.
Singh and Moorti (1977) in their study on growth rates of area, production and productivity found that the contribution of productivity to the growth of production was much higher than that of area, both for cereals as well as for other food crops.

Sharma (1977) in his study the effects of area, yield and price on the increased value of crop output in India for the period between 1960-61 and 1970-71. The author used decomposition scheme in measuring the effects of production, area and prices and their interactions on the increase of value of production of wheat, rice, pulses, food grains, oil seeds, sugarcane, jute, tobacco, pulses, tea and chilies. The price effect was in the range of 49.22 percent to 74.37 percent in these crops. The price effect in case of pulses was found to be 142.95 percent which offset the negative effect of yield, area and their interaction.

The Indian Merchant’s Chamber of Economic Research and Training Foundation (1978) in their study pointed out that only a vertical integration of strong viable credit marketing and processing co-operatives and different management can effectively compete with the private sector in the long run and until then a multi sector approach in pulses marketing was justified. Pulses marketing have been undergoing substantial changes in India due to the regulations by the government on one hand and organized activities of traders and farmers on the other. Accordingly, the government introduced number of programs to wear away the pulses farmers from the private traders.
However, nearly 70 percent of pulses produced in India, is still handled by the private traders.

Surywanshi and Kahage (1979) in their study on production and marketing of roses in Western Maharashtra, concluded that commission and profits of traders form more than 43 percent of total cost. The producer received only 47.73 percent in the consumers’ rupee, while the remaining share of 9.27 percent was due to transport and other functions. The share of different intermediaries in consumers’ rupee worked out to 19.01, 16.12 and 8.47 percent for wholesaler, retailer and commission agent respectively.

Gangawar A.C. and Pandey R.M. (1982) analysed area, production and productivity trends of pulses. They argued that to improve pulses production in India effort must be made to increase the use of drought and disease resistant pulse varieties.

Mamle Desai (1983) carried out the economic analysis of marketing of redgram in Gulburga district of Karnataka State. He identified 3 channels namely producer-commission agent and wholesalers-Dalmillers (channel-I), producer (channel-II) and producer-village, Merchant Dalmillers (channel-III). The share of the producer in consumer’s rupee was found to be 15.94 and 80.41 percent in channel-I, channel-II and channel-III respectively.

production had growth by 3.00 percent per annum, while the productivity had growth by 1.20 percent. The compound growth rate of area, production and productivity for the whole of India were 0.37, 0.17 and -0.24 percent per annum, respectively. To raise production, the authors opined making the pulses competitive in relation to substitute crops by introducing high yielding variety seeds and providing price incentives.

Satish et al. (1985) in their study on marketing of cotton in Karnataka found that a majority of farmers disposed their produce at regulatory orbit. However, a majority of small farmers marketed their produce through traditional channels, which resulted in lower producers share. This is a typical marketing weakness on the part of small farmers.

Nadalal and Tomer (1989) conducted a study on marketing of gram in Hissar (Haryan). The study indicated that the producers share in the consumers’ rupee was about 88 paise. The cost incurred by the producer in selling his produce to primary wholesaler was Rs. 8.25 per quintal. Out of this transportation and losses together constituted 1.23 percent of the consumers’ price. On the part of wholesaler, the total expenses incurred were Rs. 23.02 per quintal commission charge (1.78 percent) and market fee (1.78 percent) is the major items of expenses and formed 3.56 percent of consumers’ price. The margin of wholesaler was Rs. 4.98 per quintal (8.84 percent) of consumers price, retailer margin was Rs. 11.68 per quintal (1.96 percent) of consumers’ price.
Jain (1989) in his study on marketing and processing of Arhar Dal in Narasingapur district (Madhya Pradesh) concluded that producers obtained 80.33 percent shares in the consumers’ rupee. The processing cost 9.31 percent, retailer margin was 3.26 percent, mill owner, wholesaler 2.54 and 1.76 percent respectively.

Banerjee and Day (1991) in their study collected time series data on area and yield of pulses and their competing crops from 1957-58 to 1983-84. Finding from their studies showed that green revolution had adversely affected the area under pulses.

Reddy (1991) conducted a study on marketing and marketing margins of maize in Andhra Pradesh. The study revealed that the producers share was significantly high (86.87 percent) in case of producer → retailer → consumer channel as compared to corresponding share for producer (63.14 to 70.67 percent) in case of second channel i.e. producer → wholesaler → retailer → consumer.

Mander and Sharma (1992) examined the growth performance of pulses output in India for the period 1966-67 to 1988-89. It was evident from the result that cotton production registered a significant growth rate of 2.39 percent per annum during the Green Revolution period. They also reported that increase in production of cotton as a result of in yield (2.74 percent) while the area under this crop decreased significantly.

Mundinamani and Mahajanashetti (1993) in their study employed the orthogonal polynomial regression analysis technique to reveal
trends and growth performance of oilseeds in Karnataka during the period from 1955-56 to 1989-90. The findings of the study shows that, in Bijapur district, continuous decline in groundnut area till 1979-80 and slight increase afterwards. But in case of Dharwad district, a continuously significant increase was noticed till 1964-65 and it established afterwards. In Raichur district and at state level, an increase in area was noticed in recent years. Similarly, the area under sunflower and sesame showed stable trend entire years. Moreover, an impressive growth in area was observed under sunflower since its introduction. The yield trend showed mixed results but at state level an increasing trend in yield was observed and the production trend was little more or less similar to the area trend.

Shing and Mithur (1994) study found that compound annual growth rates of area, production and productivity of potato during the period from 1970-71 to 1989-90 were 3.6, 6.7 and 2.99 respectively. Among the states, it was found out that the compound growth rate of production was the highest with 8.87 percent in West Bengal followed by Assam and Uttar Pradesh.

Sundaramurthy and Gururajan (1994) found that the introduction of pulses hybrids has paved the way for increasing the production and productivity in the country substantially. Pulses production has increased from 7.8 m. bales in 1983-84 to 12.3 million bales in 1992-93. However the pulses area and production in Tamil Nadu has almost remained static at 6.0 m. bales. More than one third
of the 1000 and odd spinning mills in the country is situated in Timil Nadu hence attempts were made at the Central Institute for Pulses Research Coimbatore to develop suitable short duration genotypes like Anjali 70E, 70G and LD133.

Marothia (1994) in his study the compare of the economics of pulses, with Kharif crops, groundnut and jowar, both local and high yielding verities in Khargoan district of Madhya Pradesh. The cost per hectare of high yielding varieties was found to be higher than the cost of local pulses variety and other competing crops. The net returns from high yielding varieties were found to be higher than that of local pulses variety.

Mundinamani and Naik (1994) concluded that the per quintal marketing cost of potato was Rs. 20.74 as compared to Rs. 22.61 of brinjal Rs. 23.15 of onion, Rs. 21.47 tomato, Rs. 56.92 of dry chilly, Rs. 29.75 of cotton and 19.36 of groundnut. The factors for differences in marketing cost of such agricultural products need to be probed by further studies.

Teggi (1995) identified three main marketing channels for jaggery in Ghataprabha command area (Karnataka)

i) Producer → Commission agent → Wholesaler → Retailer → Consumer.

ii) Producer → Wholesaler → Retailer → Consumer.

iii) Producer → Retailer → Consumer.
The study fills a gap in the marketing of agricultural based products as there is little literature on the topic.

Hiremath et al. (1996) analysed the growth rates in area, production and productivity of important pulse crops in Karnataka for the period from 1984-85 to 1993-94. The compound annual growth rate in area under red gram decreased steadily (0.06 percent) over the period from 1984 to 1994 where as in other pulse crops it increased. The area under black gram showed the highest growth rate of 6.51 percent followed by green gram (5.40 percent) and bengal gram (1.12 percent). With respect to production, black gram registered a higher growth rate (12.15 percent) followed by green gram (2.23 percent). Production of bengal gram and red gram decreased over a period of time by 1.31 percent and 1.57 percent respectively. With respect to productivity, black gram showed the highest growth rate (5.50 percent) followed by green gram (4.90 percent) and both were statistically significant. The growth rate of bengal gram was 0.38 percent and that of red gram was 3.25 percent.

Kumar Priya Ranjan (1996) calculated compound growth rates in 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 i.e. early period of green revolution (1974-84) and later period of green revolution (1984-94). The annual growth rates of area under arhar was negative (-3.0 percent) during study period which remained
negative during 1970s and 1980s but turned out to be positive during early nineties. Area under bengal gram also witnessed negative growth rate (-3.3 percent), but the rate of decline slowed down during early 1990s. It was finally concluded that despite of negative growth in area under major pulses, the area under total pulses showed positive growth in both the zones, indicating an increase in area under minor pulse like green gram and black gram which were grown during Kharif and summer seasons in the project area.

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

Ram Singh (1996) found the growth trend for four pulse crops in four regions of Uttar Pradesh. 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 bengal gram varies from 0.9 percent in the Bundelkhand region to -2.1 percent 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% annum) for gram (moong)

Kandarapa Kumar Barman (1997) analysed 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 bengal gram, red gram, other pulses and total pulses were 3.75 percent, 5.03 percent 2.64 percent and 2.85 percent, respectively. The growth rate of the production of red gram was found to be the highest but its yield growth was negative (-0.51 percent 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 as compared to India.

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 y=a+bt. The data were analyzed for three time periods viz., 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 percent), rates of productivity (3.66 percent).

Tripathy and Mishra (1997) based on investigation made on Growth and Instability of Ragi production in Orissa, reported that 63 percent of the increase in production of ragi was due to increase in
average area, 25.56 percent from increase in average yield 9.84 percent from increase in area-yield covariance. Therefore, average area, average yield and area-yield covariance were the most important sources of production instability of ragi in Orissa.

Sangeeta Shroff (1997) indicated that two main state agencies operating in the pulses markets are the Pulses Corporation of India (CCI) and the Maharashtra State Co-operative Pulses Grower Marketing Federation. The CCI was set up in 1970 as a public sector agency. To be responsible for import of all pulses as indigenous pulses was insufficient to meet the requirements of the textile industry after partition. The main objectives of the study were to examine the efficiency of the Maharashtra Federation and the CCI in terms of their Marketing costs and the farmers share in their gross sale receipts. This had been studied for every year since their inscription till 1994-95. It was further compared their marketing costs with those incurred by private traders and also co-operative marketing organizations. It was observed from the analyses that the main reason for the high interest cost, particularly in the year 1985-86 and 1994-95 was that the scheme was holding large amounts of unsold stocks of 16 lakh bales but sold only 3.5 lakh bales and was holding 7.5 lakh quintals at the end of the season.

The study on state intervention in pulses marketing in India revealed that two state agencies are no better placed in terms of giving a higher share of their receipts to the farmers than the private trade or
Gujarat Federation. In years when they succeeded in giving the farmer a higher share, they incurred heavy losses. This was especially so with the monopoly scheme, which was due to its heavy losses. In the mid-1980’s began fixing guaranteed price at par with support price.

Krishnaiah (1998) in his study carried out identify the marketing channels of pulses and analyzed the price spread in these channels. He found that the important problems in the marketing of pulses in the study area are the malpractices of commission agents and traders, such as differed payments, retention of empty gunny bags and predominance of prior price agreements with the purchasers. The study further indicated that some farmers sell their produce in village itself due to lack of transport facilities, debt obligation and limited quantity of the produce that also leads to the distressed sales.

Commercially pulses are one of the best export earning commodities in the country. Pulses and textile exports are the largest source of foreign exchange, accounting for nearly one third (Rs. 38,000 crores) of the nation’s total exports. Seed is a very vital input and dynamic instrument for increasing agricultural production in general and pulses production in particular. It has been reported that genetically good quality seed alone can increase crop production by 20 percent. The detailed information on costs and returns in production and marketing of agricultural commodities in general and commercial commodity like pulses in particular through light on the selection of crop enterprises by the farmers.
Balappa et al. (1999) examined the growth performance of red gram in Gulbarga district and Karnataka state as whole over the period 1980 to 1994. The quadratic growth function was fitted for the estimation of growth in area and cubic function for production and productivity, respectively. The study showed that area under red gram declined significantly by 10 percent and 9 percent per annum respectively during 1980-81 to 1994-95 in Gulbarga district and Karnataka state as whole, whereas a significant growth in productivity was (11.00 percent) observed at the state level.

Legesse (2000) set up that during 1980s wheat area showed a declining growth (-3.94 percent) but production and productivity showed negative growth rate. During 1990s, the Karnataka state recorded a significant positive growth of 3.47 percent in area while in production; the state recorded a mild growth but productivity showed a negative growth.

Korikantimath et al. (2000) studied the economics of mixed cropping of Byadagi Chilli and Cotton in Dharwad district of Karnataka, the results of the study revealed that the cost of raising chilli seedlings worked out to Rs. 1695 and the cost of cultivation of the mixed cropping system was Rs. 11,585.40 per hectare. Average yield realization of chilli and cotton were 550 kg and 440 kg per hectare. Gross and net returns of the system worked out at Rs. 24640.00 and Rs. 13054.60 per hectare respectively. The B:C ratio of 2.13 indicated the profitability of the mixed cropping system.
Anonymous (2000), identified constraints in pulse production in three agro climatic zones in Madhya Pradesh. The study was based on both primary and secondary data. The data so collected were analyzed using regression and coefficient of variation. The results of the study revealed that pulses were cash crops which required lower inputs, increase the productivity of soil but they could not grow without irrigation unlike rice and wheat. There were no high yielding varieties of pulses, so they could not compete with other cereals and were liable to pest and diseases. So need to be conduct field level studies for pulses.

Pol (2001) examined the economics of production and marketing of ginger in Satara district. The findings of the study showed that average per hectare total cost of production (Cost C) was Rs. 119534.73. The major items of cost of cultivation were seed rhizome, manures and fertilizer, machine labour and Grant total value of land. The average per hectare gross returns and net profit was worked out as Rs. 174755.43 and Rs. 41295.13 respectively. The output-input ratio at total cost was 1.31 i.e. greater than one indicating a profitable crop enterprise.

Krishna (2001) tried out the costs and returns of paddy cultivation in Kerala based on the data collected through 100 farmers during the year 2000-01. The total cost of cultivation per hectare was to found to be Rs. 31043.75. Of this, the lion’s share was attributed to human labor, which accounted for 61.46 percent of total cost. Total
returns were Rs. 27023.68/ha. The net income was found to be negative unprofitable situation. However, rice and prawn cultivation together earned profit with B-C ratio of 1.27. The study concluded that there was an increased trend towards double crop of prawn due to higher profitability of the prawn farming and loss incurred in Rice crop. The study recommended for mechanization of Rice farming operations due to higher wage rate prevailing and scarcity of labor are proper time.

Rajendra Prasad et al. (2001) studied costs and returns in cotton production vis-à-vis its competing crops in Guntur district and reported that, the per hectare expenditure on PPC on cotton was Rs. 11331.37. This was very high as compared to Rs. 4217.92 in Soybean-Bengal gram cropping system, Rs. 4379.81 in Soybean-red gram and Rs. 1334.00 in Soybean-Sorghum cropping systems. The PPC in total operational cost was highest in cotton (Rs. 29884.77/ha) compared to Soybean-Bengal gram (Rs. 27802.84/ha), Soybean-Red gram (Rs. 29171.42/ha), where as net returns were very low in cotton compared to other cropping systems.

Anonymous (2002) (a) analysed comparison of per hectare cost and returns of moong, gram, maize, wheat, mustard and cotton on sample farms revealed that pulse crops were less favourable in returns per hectare. Among pulses, moong, yielded significantly higher returns than that gram.
Anonymous (2002) (b), performed a study on economics of pulse production and identification of constraints in Punjab. In Punjab the districts having the highest area and production of pulse crops were selected for the study. The total sample size was 100. Highest ranking technique was employed to analyze the data. Results of the study revealed that in adequate availability of improved variety seed, lack of adequate irrigation facility, uncertain rain fall were the major constraints faced by sample farmers.

Mahantesh (2002) scrutinized costs and returns structure of cotton in Belgaum district. Total cost of cultivation was found to be Rs. 30058.77 per hectare. The gross and net returns realized were Rs. 33174.75 per hectare and Rs. 3088.98 respectively.

Neelappa (2002) analysed the costs and returns structure in cultivation of paddy in Tungabhadra command Area (TBP) of North Karnataka. The profitability aspect of paddy cultivation in TBP was analyzed by computing per hectare cost and returns. The per hectare cost incurred in cultivation of paddy was Rs. 26192, Rs. 25938 and Rs. 23822 by farmers in Bellary, Raichur and prize-winning farmers respectively. The variable cost constituted the major proportion of total cost of cultivation of paddy, which was about 85 percent. The expenditure on human labour was found to be major item of variable cost. The gross return per hectare of paddy cultivation was Rs. 42851 (Bellary) and Rs. 40735 (Raichur). It was Rs. 45350 for prize-winning farmers. The net returns per rupee spent in paddy were estimated to
be Rs. 1.64 for farmers in Bellary, Rs. 1.57 for farmers in Raichur and Rs. 1.90 for farmers.

Sandeep (2002) worked out the economics of existing cropping systems in Bidar district of Karnataka by computing B-C ratio for different cropping systems. The results revealed that sugarcane was the most profitable cropping system under irrigated condition with a net profit of Rs. 50616.55 per hectare and a benefit-cost ratio of 3.28. Red gram based cropping system was the next best profitable system under rainfed condition as judge by the benefit-cost ratio of 2.37. The B-C ratio was 1.84 for paddy wheat cropping system. The study recommended the need for crop diversification to avoid unforeseen economics losses of mono cropping.

Dodke et al. (2002a) deliberated the economics of production of turmeric in Chandrapur district of Maharashtra. The average per hectare cost of cultivation of turmeric was Rs. 54,249.00 in that seed cost was the major component accounted for about 32.61 percent of the total cost. The average price per quintal received by the selected farmers was Rs. 3405.31 per hectare gross and net returns were Rs. 65,177.21 and Rs. 10,928.71 respectively. The input to output ratio at cost ‘C’ was 1:1.20 thus the turmeric production in Chandrapur district was a profitable crop enterprise.

Damate et al. (2003) organized a study on changes in costs and returns of major crops in Punjab. The data relating to the study such as cost, input use and returns at different period of time for major
crops such as wheat, paddy and cotton in Punjab were collected during 1971-72 to 1973-74, 1981-82 to 1983-84 and 1992-93 to 1994-95. The results of the study showed that total cost of cultivation per hectare was go on increasing for wheat, paddy and cotton crops. Return (per hectare) for a particular crop depended on the productivity and prices of crop products. The study clearly brought out that the raising cost of cultivation and instability in returns were due to variability in yield and price. Variable cost was increasing due to cost of human labour, machine labour, fertilizer, etc. this implied that the increase in production and productivity of these crops in the state had been achieved at higher cost and there was urgent need of technology up graduation and farmer friendly farm price policy for sustainable growth of farm sector.

Maharajan et al. (2003) conducted the study to measure the profitability of growing various crops in the Northern dry zone of Karnataka. The breakeven yield was computed to measure the profitability. The decision criteria were, if the actual yield was beyond the breakeven yield, the farmer could start earning the profits and if the actual yield was below the breakeven yield the farmer incurred loss. Breakeven yield were relatively quite stable and profitable in HYV of paddy, sunflower and cotton in kharif season, bengal gram and sunflower in Rabi season, groundnut and sugarcane in summer season.

Mahendra (2003) has examined the production of pulses in Punjab. The study indicated that inputs used for the cotton
production reduced when BT seeds are used. Hence most of the farmers are cultivating cotton as against paddy and wheat. Among the inputs use of pesticides has reduced considerably.

Archana and Srivastav (2003) analysed growth rate and instabilities in sugarcane production in different regions of Uttar Pradesh, using time series data (1980-81 to 1998-99) on area, production and productivity of sugarcane for Western, Eastern and central (including Bundelkhand) regions as well as for the state as whole. Semi-long equations were fitted to estimate compound growth rates in area, production and productivity of sugarcane. Instability in area, production and productivity was measured computing coefficient of variation using de-trended data. The production instability was also decomposed to examine the magnitude of various components of regional sugarcane production variability. Even though significant and positive growth in the production of sugarcane had emerged as a common feature in all the three regions of the state, its magnitude had not uniform across the regions. The study suggested adequate measures to improve location specific production technology through research, development and also ensured input supply mechanism.

Devaraj et al. (2003) studied trends in area, production and productivity of pulses in Bundelkhand region of Uttar Pradesh. Using time series data for the period from 1980-81 to 1999-2000. The data were analysed by fitting exponential function. The result revealed that the area under total pulses showed an increasing trend throughout
the study period. The production increased from 578.04 thousand tons in 1980-81 to 1083.65 thousand tones in 1999-2000, whereas productivity of the pulses increased from 748 kg/ha to 968 kg/ha.

Sikander and Sandeep (2004) inspected profitability in paddy, Maize and Wheat crops grown in Himachal Pradesh for the year 2001-02, computing different cost concepts such as Cost A1, Cost A2, Cost B and Cost C. As regard to Cost C, the cost was highest in the Paddy cost is (Rs. 20835), Maize (Rs. 18709) and Wheat (Rs. 17102) per hectare. For all the crops, the lion share of cost was incurred on labour. In respect of gross returns per hectares, it was the highest on Paddy farmers followed by Wheat and Maize. The study further found that net returns were positive on Paddy crop as compared to the Wheat and Maize where the net return was negative. The negative return was due to low yield. However, net profit per quintal was negative for all three crops.

Sreeja (2004) studied the economics of rice, tetioca, coconut and rubber grown in Kollam district of Kerala by analyzing costs and returns during the year 2002-03. In the total production of rice, the variable cost accounted for 82.37 percent and labour cost alone shared 69 percent of the total cost. The cost benefit ration for rice was 1.09 which was the lowest compared to other crops under study indicating that all crops concerned other than rice had a better income for the formers. The findings further confirmed the trend in changes in cropping pattern.
Lokesh and Chandrakanth (2004) organized study on economics of production and marketing of turmeric in Karnataka, the results of the study revealed that total cost ‘A’ of local variety and improved variety of turmeric cultivation were Rs. 21,791 and Rs. 31,959 respectively. The net benefit cost ratio is 1.06 and 1.29 at a price of Rs. 2200 and Rs. 2360 per quintal of local and improved varieties of turmeric rhizomes.

Patil et al. (2004) conducted study on economics of production of turmeric in Sangli district of Maharashtra, the result of the study showed that the per hectare cost A, cost B, and cost C were Rs. 16,38,241.31, Rs. 2,29,098.67 and Rs. 2,36,298.67 respectively. Per hectare gross income from turmeric was Rs. 3,72,520.98. The input to output ratio was 1:1.48 and indicated that turmeric is a profitable enterprise in Sangli district.

Madan (2004) study on identification of marketing channels for vanilla in India. They identified four marketing channels for vanilla marketing,

- Farmer → Local agents → Company → Export
- Farmer → Village development trust → Local agent → Company → Export
- Farmer → Village development trust → Company → Export
- Farmer → Spice board → Company → Export

Veeresh Hiremath (2004) studied the growth in area, production and productivity of cotton in Dharwad district of Karnataka state. The
results showed that both area (4.90 percent) and production (10.60 percent) of cotton showed significant growth whereas the productivity growth (3.00 percent) was found to be non-significant.

Angels and Hosamani (2005) observed the instability in area, production and productivity of turmeric in selected South Indian states viz. Andhra Pradesh, Tamil Nadu, Karnataka and Kerala considering the period from 1970-80 to 1998-99. Hazell’s decomposition model was used for the analysis. The instability in area and productivity of turmeric indicated that the area in the case of Andhra Pradesh and Tamil Nadu showed instability, while Kerala showed stability. But, in case of yield, except Karnataka all other states showed instability. Decomposition analysis showed that yield instability was the dominant factor affecting production. The future development programmes should envisage stabilization of yield, which would stabilize production. Evolving location specific varieties, adoption of modern cultural practices and intensive cultivation were some of the suggestions for stabilizing productivity of turmeric.

Basavaraja et al. (2005) considered economics of kharif sorghum in Karnataka. The Herfindahl index had been computed to find out crop diversification and factors influencing this diversification and factors influencing this diversification in the kharif sorghum area in the overall period 1970-71 to 1997-98 and different sub periods had been found due to the diversion of kharif sorghum area to more remunerative crops like oil seeds and pulses. Belgaum district
displayed a moderate degree of crop diversification compared to that of Dharwad district. Unfavorable prices, declining yields, inadequate credit and adverse climatic conditions had been identified as the major reasons for the replacement of Kharif sorghum crop in the two sample districts. The net returns and cost benefit ratio had been found low in the cultivation of Kharif sorghum compared to those of its competing crops, like cotton, Greengram and Groundnut.

Kumawat and Meena (2005) premeditated growth and instability in area, production and yield of spice crops such as coriander, cumin, fenugreek, fennel, garlic and chilli in Rajasthan vis-à-vis India from 1986-87 to 2000-01, indicated that almost all the spices registered significant growth rates in their production in Rajasthan as well as in India during the entire study period mainly due to significant increases in the same during post-Technology Mission on Oilseeds (TMO) period (1986-87 to 2000-01). In majority of the spice crops the instability in production increased during the post-TMO period over the pre-TMO period (1967-68 to 1985-86) in Rajasthan and India as well. However, the magnitudes of coefficients of variations were more pronounced at the state level than at the in the pre-TMO period. The same was true for India except that the magnitudes of coefficients of variations were less at the national level. In general, yield instability, on the other hand, decreased during the post-TMO period over the pre-TMO period in both Rajasthan and India. As regards sources of variance of production, area variance predominantly destabilized the production of chilli in Rajasthan and of fenugreek in India. In majority of the
spices, area yield covariance helped to stabilize the production in Rajasthan as well as in India.

Ranit Kumar et al. (2005) found that the Bihar was the only state, which performed well and registered high growth rate in Maize yield among the six states considered for the study. Punjab followed next to Bihar with nearly 76 percent of the Maize area recording higher yield but with slow growth. With respect to stability of Maize yield growth, most of the districts were found to be unstable.

Chahal and Katariya (2005), projected the cost and return in cultivation of Maize in Punjab. The total operational cost of hybrid Maize was Rs. 8956/ha as compared local variety Rs. 6427/ha and for composite varieties Rs. 8009/ha. Human and animal labour cost contributed more than 1/3 of the operational cost. Fertilizer accounted for 20 percent of the operational cost in case of hybrid varieties. The estimated average yield of hybrid varieties was 36.26 Q/ha. Both gross and net returns in case of hybrid Maize amounted to be Rs. 19637.48 and Rs. 10681.65/ha respectively.

Rohit Singh et al. (2006) studied economics of production of green peas in Punjab using the primary data from pea growers. The data were subjected to simple tabular and functional analysis. The results revealed that 75.85 percent of the farmers purchase pea seeds from dealers. The yield of green pea was found to be highest on small farmers among the entire farm-size categories. The total cost incurred was found to be the higher in large than small and medium farmers
due to use of excess inputs by the farmer than required. The gross and net returns were found to be higher in the case of small and medium farms due to realization of higher prices by them and exploring of other markets due to their higher marketable surplus.

Toor et al. (2006) rough computation the growth in production of selected commodities during 1990-91 to 1995-96 and 1996-97 to 2003-04. The result indicated declining trend in case of total food grain, cereals, sugarcane, oilseeds, milk, egg and fisheries. But the growth rates were observed negative in case of oilseeds, cotton and pulses, which indicated decline in their production after initiation of globalization process.

Gyan Prakash et al. (2006) studied the growth rates and decomposition analysis of food grains production in India from 1955-56 to 1998-99 and found that there is, in fact, some deceleration from Pre-green Revolution Period to the Green Revolution Period, coming substantially from a decline in the growth rate of area in the Post-green Revolution Period / Pre-economic Reform period and Post-economic Reform period. The major contribution of output is through yield increase. The first order interaction of yield and cropping pattern was a major factor for the growth of food grain output. Therefore, the future effort should be made to stabilize and expand the area of food grains along with increasing yield level. For this, modern technology of agriculture should be promoted, which consists of pest and disease resistant varieties.
Thumar et al. (2006) investigated the growth and instability in production of garlic in Gujarat for the period of 1985-86 to 2001-02 and the data were analyzed by using exponential production function and instability index. The results of the study revealed that, area and production has increased in the state but with high instability. The productivity registered lower but relatively more stable growth compared to area and production which indicates that the area is the main source of increasing the garlic production in the state.

Birari et al. (2006) carried out a study on farm level production, processing and marketing of turmeric in Western Maharashtra. The study revealed that per hectare returns from the cultivation of turmeric were Rs. 27272.25. On account of processing turmeric, the value addition resulted in additional benefits. The producers share in the price paid by the consumer was quite satisfactory and can be increased due to the non-perishable product of processed turmeric.

Rajesh (2006) employed out the economics of vanilla cultivation in Uttar Kannada district of Karnataka, the net present value of the cash inflow per ha was Rs. 1856659.40 on small farm and 13.71 on large farm. The internal rate of returns was 58 percent on small and 65 percent on large farm. The break-even point for small farm was 145.52 and 127.98 kg for the large farm. In vanilla grown as pure crop, the net present value per ha was Rs. 4942593.61 on small farm and Rs. 5373993.35 on large farm.
Bindukumar (2006) considered the charges in red gram economy of Karnataka and study period was divided into three sub periods Pre-WTO (1985-86 to 1994-95), Post-WTO (1995-96 to 2004-05) and overall period (1985-86 to 2004-05). The results of study revealed that growth in area was almost constant in both Pre-WTO and Post-WTO period i.e., 2.80 percent per annum. In Pre-WTO period the performance of this crop was poor both in production and productivity which showed negative trend (-3.21 percent and -5.85 percent respectively), whereas in Post-WTO period production grew at the rate of 8.33 percent and productivity at the rate of 5.50 percent which was impressive. The growth in area, production and productivity for overall period, in Karnataka was not encouraging (0.52, 0.59 and 0.06 percent respectively).

Sandesh et al. (2006) in their study on growth and instability analysis of major oilseeds in selected states of India revealed that, among the selected major oilseeds growing states, the production of total oilseeds showed significant positive growth in Karnataka, Madhya Pradesh and Maharashtra (3.07, 8.57 and 4.74 percent) during overall period (1971-72 to 2002-03) and all other states showed a significant positive growth in area, production and productivity (1.65, 3.66 and 1.98 percent) during overall period and this is due to the implementation of Technology Mission on Oilseeds.

A sampling technique was employed to select 150 sample farmers. The required information about constraints faced by the sample farmers was collected using pre-tested schedule. Data were analysed using five scale rating. Results of the study revealed that phyllody and blight were the major diseases infecting sesamum crop. The jassid and sesamum leaf Webbers were major enemies of sesamum crop. Weed intensity and non-availability of labour were also major problems in Sesamum cultivation.

Savadatti (2007) analysed that the task of verifying the various factors influencing the supply of pulses and to develop suitable demand relations by using Nerlove’s adjustment lag model revealed that average response results revealed that in rain fed areas farm harvest prices and good weather conditions positively influence the area allocation decision of the farmers. But yield turned out to be an insignificant factor in influencing the farmers’ decision to allocate land to either gram or tur. It is clear from our analysis that even though farmers are price responsive and farm harvest prices of pulses are much higher than the farm harvest prices of competing crops like cereals, farmers do not realize reasonable returns for their outputs because of lower and also unstable yields of gram and tur. Production of pulses (gram and tur) mainly depends on area under the crop. The technological factor represented by time trend turned out to be positive. But growth trends in production of gram and tur suggest that existing technology has not been able to bring desired increase in production of gram and tur so as to meet increasing demand.
Ghosh and Kuri (2007) accomplished study on decomposition analysis of agricultural growth in West Bengal from 1970-71 to 2003-04. The study revealed that the agricultural growth in West Bengal declined significantly in the mid-1990s from an impressive growth rate of the 1980s. The decomposition of output growth across the districts, as well as on the whole, showed that yield growth plays the most important role in output growth. The contribution of extension of area was next. A sharp fall in yield growth during the 1990s was mainly responsible for the slowdown in output growth. Analyzing the source of agricultural growth and the cause of recent decelerating trend in agriculture in the state, the paper finally recommenced appropriate extension program suitably adjusted with the dynamics of crop diversification to exploit the advantage of globalization and to achieve a higher growth path in agriculture in the state.

Jose and Jayasekhar (2008) deliberate the growth trends in area, production and productivity of Arecanut in India during the period from 1971 to 2004. It revealed that the area and the production of Arecanut in India increased tremendously at the rate of 2.2 percent and 3.2 percent respectively. The rate of increase in both area and production is mainly due to favorable price prevailed during the period.

Sharma and Kalita (2008) considered the variation and instability in area, production and productivity of major fruit crops in Jammu and Kashmir for the period from 1974-75 to 1999-2000. It revealed that growing of pear, cherry and almond were more risky compared to
other fruit crops in the state as revealed by higher coefficient of variation. The coefficient for area, production and productivity for these crops were more than 78 percent. The raising of apple in the state was less risky, which had a coefficient of variation of less than 35 percent.

Taher and Shadmehri (2008) analysed the growth rate and decomposition analysis of agricultural production in Iran for the period of 1970-71 to 2000-01. The results of the study revealed that, the performance of agricultural sector was slightly better during production, yield of food grains grew during 1970-71 to 1978-79 at higher rate than that recorded during the years 1979-80 to 2000-01. The main sources of growth of agricultural production during the period 1970-71 to 2000-01 were the growth in yield and expansion in irrigated area.

Shinde (2008) deliberate the diversification of agriculture in Maharashtra. He estimated the compound growth rates in area, production and productivity of major crops for different time period viz. Period I (1960-69), Period II (1970-89), Period III (1990-2003) and overall Period (1960-2003) for different regions and state as a whole. The study was based on both the macro and micro level data. For macro- level analysis, the district wise time-series data for 43 years, from 1960-61 to 2002-03 on area, production and productivity of crops, rainfall, GCA, GIA and other economic indicators were obtained from various publications. The study concluded that at the state level, area production and productivity of bengal gram was observed to be
decreased during Period-I significant negative growth rates were noticed in the area under ragi, karif groundnut, wheat and production of red gram and Rabi jowar during the same period, whereas area under bajra, red gram, urad, sesame and cotton, sugarcane, Rabi jowar, bengal gram and safflower and productivity of wheat and bengal gram increased significantly. During Period-III, significant growth was observed in area, production and productivity of red gram and soybean, whereas significant declining, safflower and sunflower. During Period-III, the productivity of all the crops increased significantly with different magnitudes in the state during the entire period, except, red gram, which recorded positive but non-significant growth.

Dhakre and Sharma (2009) studied the growth and instability analysis of ginger production in North-East region for the period of 1992-93 to 2004-05. The results of the study showed that, during the period North-East has showed the significant growth rates in production (26.72 percent) and productivity of ginger (6.77 percent). In case of area, growth rates was positive (11.91 percent) but not significant. During the period the recorded instability in area, production and productivity of 204.20, 10.46, 29.43 percent respectively and decomposition analysis showed that area instability was the dominant factor affecting production.

Sushil Kaul et al. (2009) studied the economic analysis of productivity and profitability of rice production in India, the study was based on secondary data on rice yields collected from 1951 to 2002.
Multiversity regression equation was fitted to estimate state wise productivity in rice. Results of the study reviled that over all yields of rice where higher during 1980-81 as compared to 1995-96 to 2000-01. The gross return had been increased over the years. But the same was not true for the net returns, operating cost and productivity, which were highly correlated to each other and coefficient associated with productivity was positive and highly significant.

Hemant et al. (2009) studied the decomposition analysis of lentil in India. The total study period was divided in to three decades namely, 1970-71 to 1979-80, 1980-81 to 1989-90 and 1990-91 to 2000-01, to examine the contribution of area, yield and the interaction of area and yield towards increase in the lentil production in the country. The results of the study revealed that, during the eighties, contribution of yield (53 percent) was more than that of area (37 percent) and interaction (10 percent). However during seventies, lentil production was declined mainly due to negative area effect (-86 percent). During the overall period, area effect (66 percent) was higher than the yield and interaction effect (17 percent). Hence, it was concluded that the total change in the production of lentil in the country was due to the area effect.

Sridhara (2010) analysed the economics of chilly production under contract farming in Bagalkot district of Karnataka, the results of the study revealed that per acre cost of chilli cultivation estimated to be Rs. 38721.36, Rs. 41238.37 and Rs. 39882.74 in Bilagi, Mudhol.
and overall study area respectively. The per acre yield of chilli obtained were 1122.98, 1088.67 and 1096.49 kgs in Bilagi, Mudhol and overall study area respectively by the chilli farmers. The marginal productivity analysis indicated that there is a scope for reorganizing the resources like seeds, bullock labour and plant protection chemicals.

Gupta and Sharma (2010) estimated the following marketing channels in marketing of ginger in Himachal Pradesh.

- Producer→Retailer→Consumers
- Producer → Village trader / Commission agents → Wholesalers → Retailers → Consumers
- Producer → Wholesalers → Retailers → Consumers

Among these three channels Channel-I was the most efficient one from the point of view of the producers as well as the consumers as the producers got as high as 73.02 percent of consumer’s rupee in ginger. From the producers point of view, channel-I was found to be most profitable as it yielded highest returns to producers.

Kumar and Singh (2010) estimated the price spread in following four channels of doing marketing in Lucknow district of U.P.

- Producer (local) → pre-harvest contractor (local) → Commission agent (Lucknow) → Wholesaler (New Delhi) → Retailer (New Delhi) → Consumer (New Delhi)
- Producer (local) → pre-harvest contractor (local) → Commission agent (Lucknow) → Consumer (Lucknow)
Among the four channels, channel-IV was the most different one from the point of view of the producers as well as the consumers as the producers got a high as 46.09 percent of the consumer’s rupee and remaining 54 percent was incurred on different marketing cost or the margin by the pre-harvest contractor / retailer. Thus, the price spread was found to be minimum in local markets and maximum in distant markets.

Srivastava et al. (2010) explored that the growth and dynamics of production and consumption of major pulses in different states of India and has made a comparative evaluation of key economic factors affecting their production. In the light of high population growth, poor production performance has resulted in reduction in per capita availability of pulses which together with undue price rise has distorted consumption pattern of households. The growth rate of area and production of pulses is negligible and there exists wide variability in their yield in different states of country. The study has Pulses have exhibited a grim picture in their production performance both spatially and temporally. However, pulses have been found to be preferred over coarse grains. Since the yield of pulses is stagnant vis-à-vis other crops, income of pulses growing farmers can be considerably increased
by yield improvement through technological breakthrough. Thus, yield improvement can fetch higher revenue to farmers and may negate the advantage of cereals and oilseeds over pulses.

Rama Rao (2010) considered performance of pulses during Pre-Post-WTO periods in Andhra Pradesh and found that during the overall period, state as a whole, pulses had shown high growth rate in area (1.60 percent), production (3.17 percent) and whereas, growth in area contributed more towards growth in production than by growth in productivity. Pulses production in Post-WTO era (1996-97 to 2005-06) showed tremendous growth (6.85 percent). Reason may be due to effective implementation of Technology mission on pulses since 1990-91 in Andhra Pradesh and more importantly expansion of area of bengal gram in Rabi season.

Saravanadurai and Kalaivani (2010) carried out a study on growth action of selected cereal crops in Tamil Nadu state, using the data from 1993-94 to 2007-08, the Compound Growth Rate (CGR) of area, production and yield for the selected cereal crops in the Tamil Nadu state were estimated. In Tamil Nadu, Paddy held good performances in absolute terms. But the compound growth rate revealed that the Maize was found to be positive and records a highest growth rate among other cereal crops in terms of area, production and yield in Tamil Nadu over the study period but could not serve the purpose of livelihood for majority of the population in Tamil Nadu state. Hence, the importance had given to the paddy cultivation.
Besides, the study suggested that the farmers can also cultivate Maize for the money-making purpose in the Tamil Nadu state that suited for the climatic conditions of the state as well.

Gyati Riku et al. (2011) calculated the growth rate in area, production and productivity of ginger in Meghalaya during 1998-99 to 2007-08, the results of the study revealed that the area under ginger (2.35 percent) and production (1.58 percent) showed a positive growth rate while the productivity of ginger showed a declining trend over the year (-0.78 percent).

Sonnad et al. (2011) considered growth of oilseeds in India during pre- and post-WTO periods. Results of the study revealed that Soybean had the maximum overall growth rate of 19.48 percent followed by sunflower, Castor and Rapeseed and Mustard with 8.72 percent, 5.88 percent and 4.60 percent respectively.

Kannan and Sundaram (2011) examined that the trends and patterns in agricultural growth at the national and sub-national levels in India. Data on important variables like area, production, input use and value of output were compiled for the period 1967-68 to 2007-08 from various published sources. The analysis of data reveals that the cropping pattern in India has undergone significant changes over time. There is a marked shift from the cultivation of food grains to commercial crops. Among food grains, the area under coarse cereals declined by 13.3 percent between 1970-71 and 2007-08. Similarly, the performance of pulses in terms of area and output was not impressive
during the study period. The use of technological inventions in the cultivation of other crops was also not so conspicuous in pulses. Nevertheless, the increase in crop yield has been a major factor for accelerating production in the country since the late 1960s. The use of modern varieties, irrigation and fertilizers were important factors that ensured higher growth in crop production. However, technological and institutional support for a few crops like rice and wheat brought significant changes in crop area and output composition in some regions.

Ankit and Hugar (2011) deliberated on economics of soyabean cultivation vis-à-vis its competing crops in Madhya Pradesh. Multi stage random sampling technique was employed for selection of 90 sample farmers. Results of the study revealed that cost of cultivation of soyabean was Rs. 15946/ha, of which, variable and fixed costs formed about 76.79 percent and 23.21 percent respectively.

Veeranagouda et al. (2011) studied the growth rate scenario of chilli in Northern Karnataka. The study revealed that Northern Karnataka as a whole registered positive compound growth rate for area (13.76 percent), production (13.88 percent) and productivity (12.20 percent). These registered values were non-significant at both ten and five percent level of significance.

Mahal Kaur et al. (2011) studied on growth performance, variability and instability of pulses and food grains in Punjab state. The study was based on secondary data collected from statistical
abstracts of Punjab for the years 1960-61 to 2009-10. The study showed that growth rate of pulses production decreased significantly during this period. It was -8.09 percent per annum during sixties and decreased to -9.16 percent per annum during 2000-01 to 2009-10. This happened due to significant decrease in area i.e. -7.17 percent for whole period under pulses, whereas production of food grains increase in area and yield of food grains. The instability in production of pulses is much higher i.e. up to 35.74 percent. Variability increased in pulses but decreased in food grains.

Economic Times (Daily News Paper) 2011; The area under pulses crop has increased by 18 percent during last two years in Maharashtra, the second largest cotton producer in the country, from 31.41 lakh ha in 2008-09 to 39 lakh ha in 2010-11.

‘Socio-Economic impact assessment of pulses in India (2012); the study was conducted by Council for Social Development (CSD), pulses farmers has recorded a zero suicide figure in Karnataka. Pulses area as a proportion of the gross cropped area between 1995 and 2010 was 3 percent in the state.

Hosmath (2011) deliberated advantageous and limitations of cotton cultivation in Northern Karnataka. Required data for the study were collected from 100 sample farmers and analysed by adopting highest ranking technique. Results shows that 93 percent farmers faced the problem of leaf reddening irrespective of Bt. Hybrids of different farms. More than 92 percent farmers were expressed that
high seed cost limiting its cultivation. About 91 percent farmers were expressed that were not at all adopted the recommended control measures with two percent DAP.

Ramarao (2012) intended efficiency, yield gap and constraints analysis in irrigated and rainfed sugarcane in North Costal Zone of Andhra Pradesh. Multistage sampling technique was adopted for selecting 120 (60 for irrigated and 60 for rain fed) sampling units at various levels. Data were collected using pre-tested schedule. Response-Priority index was employed for analysing the data. Results reveal that, there was labour shortage during the period of important operations.

Venkataramana and Patnaik (2012) in their study on Agricultural Marketing in India, they have identified the problems of numerous intermediaries in the distribution channel that results in inefficiency, price raise and shortages, there is a lack of adequate infrastructure and attempts like the golden quadrangle projects are time consuming, there is absence of a structured network for information flow.

Shivaraja (2012) considered the cost of cultivation of chilli in Haveri district of Karnataka; the results revealed that area under chilli in Haveri district was showing a decreasing trend over the years. The total cost of cultivation of chilli per hectare was worked out to be Rs. 39343.92. The net return per hectare obtained by farmers was Rs. 19589.86.

Singh et al. (2013) recognized the marketing channels for turmeric in Punjab, they found that producer – processor – consumer (channel-I)
was the major marketing channel by which nearly 72 percent of the turmeric is sold. In this channel, the relative share of net price received by producer in the consumer rupee has been found as 15.46 percent, while net margin of processor has been noted as 34.10 percent. The other channels included were: Primary Agricultural Cooperative Society (PACS), Self Help Groups (SHGs) and local unemployed rural youth as intermediaries. The share of processor in consumer rupee has been found to be much less in these channels.

The above mentioned researchers found the different channels in the marketing of different commodities and they observed that the channels which were involved less number of intermediaries, found more efficient.

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