

CHAPTER-2

SURVEY OF LITERATURE

Survey of literature plays an important role for a researcher in finalization and delimitation of a research problem. It points out gaps in the literature which can be attempted by a researcher in his study. It also introduces the researcher to alternate methods of analysis and familiarises the researcher with the scope and limitations of different studies which may provide guidance to new areas of research. A brief description of some of the selected studies is presented in this chapter.

There are many articles and research papers on the topic 'Cost and productivity analysis of food grains in India.' I have read many research papers and books related to this topic. The studies reveal that agriculture is very essential for economic growth. The survey finds that there are many factors that determine affecting agriculture is a big threat for growth of any country. In present agriculture plays very important role in economic growth.

Bhalla and Tyagi (1989) in their study pertaining to the period from 1962-63 to 1980-81 that there are very little change in the area allocation between broad groups like food grains, oil seeds, commercial crops and rest of crops at all India level. Within the food grains category wheat is gaining considerable area due to relatively more profitable. Although the area under wheat recorded an increase in almost all the wheat growing states, the increase are much larger in case of Haryana, Punjab, Uttar Pradesh and Bihar. There are slight decline in oil seed and pulses in India. With the spread of irrigation, cultivation of gram has given way to wheat. During this period, in Haryana, the proportion of area under gram is declining sharply.

Mruthyunjaya and Kumur (1989) state that the crop production strategy followed in the post-green revolution period had led to the narrowing of the base of agricultural production. They examines the changes in input use, productivity, cost of production, profitability and employment in crops' identify and explain cropping pattern changes; and suggest ways of controlling the imbalances in cropping pattern. They point out that the success in food

production in India following the green-revolution is not without cost. Most of these costs relate to various responses crops and regions. Area under paddy and wheat has continuously increased in many states at the cost of coarse cereals, pulses and some areas, cotton. The reasons for this growth, viz., technological support, price support, infrastructure support including markets and irrigation, subsistence requirements, lesser price and yield risks are well known. All these factors together made paddy and wheat production much superior in profitability to other crops. The important cost of this development are serious imbalances in the cropping pattern, widened regional disparities, increased instability in production and unplanned imports of commodities. To remedy the situation, the elements of green revaluation strategy have to be reexamined and set right.

Krishnaji, (1990) in his study reveals that Agricultural price policy must be as an essential part of larger 'Package' of Policies designed to promote rapid growth in a few regions with irrigation facilities and to encourage private investment in the necessary means for the cultivation of new varieties. They also point out that agricultural price policy plays an important role in achieving growth and equity in Indian economy in general and the agriculture in particular. The major underlying objective of the Indian government's price policy is to protect both producers and consumers. The author identifies the three instruments of Agriculture Price Policy. These follows as: - (i) Procurement Price (2) Minimum support Price (MSP)(3) Buffer Stock's and public distribution system. But his findings suggest that prices of agricultural commodity are not determined only policies, it is also affected by the market & non market factors.

Kadrekar (1991) has suggested a number of strategies to increase pulses production in Maharashtra with major emphasis on protective irrigation, soil fertility management, improved crop production technique, plant protection measures, and diversification of cropping pattern. However, these strategies and schemes have not yielded the desired results so far as pulses and coarse cereal production in the country are concerned.

Singh and Singh (1991) in their study pertaining to the changes in cropping pattern and production pattern in Haryana agriculture during 1966-67 to 1988-89, based on secondary data. The study reveals that the area under rice and wheat has been increasing at the rate of 9.29 percent and 6.34 percent respectively during the 1966-67 to 1988-89. The area under food grains like Jowar, Bajra, Maize, Barley and the area under important pulses crops has been increasing at

the rate of 11.60% per annum during this period. The total production of Jowar, Maize, Barley gram and the other pulses crops has been declining.

Acharya (1997) in his study states that the instruments of minimum support prices, food subsidy and input subsidies have played an important role in achieving the objectives of food security and accelerated growth of economy and benefited all the sections of the society. Apart from this, the price support programme and input and food subsidies have benefited only a few crops and farmers in only some regions. His findings point out some suggestions to reformulate development and price policies. These are follows as : (a) The objective of self-sufficiency in cereals should continue to remain on the top of the agenda which is desirable from the point of view of both efficiency and equity, (b) The Policy of Minimum Guaranteed Prices for agricultural products need to be continued and implemented efficiently in all the regions of the country; (c) a mix of input and food subsidies should remain an integral part of agricultural price policy and in turn, of the development strategy; (d) a policy of buffer stock of cereals and public distribution of food grains must continue for stabilizing the prices in the interest of both producers and consumers; (e) Keeping in view the important role played by the Food Corporation of India in providing price support to the farmers and reaching the food grains in even remote and difficult areas in institution need to be retained as an important component of food security and management system; (f) the production of oil seeds be encouraged in the country with a view to augmenting the availability of edible oils and deriving gains from the exports of extractions as also for development of rain fed and dry land areas; (g) as a part of medium term policy; a minimum quality of raw cotton be allowed for export every year and for meeting the domestic the domestic shortfall in availability in some years, the present policy of imports of cotton under OGI without due to be continued; and (i) For increasing the realization of farmers, markets infrastructure with continues to be weak in several areas, should be strengthened, marketing infrastructure with continued to be weak in several areas, should be strengthened, marketing be growers co-operatives be encouraged, efficiency of the functioning of the domestic market be improved.

Raj et. al. (1997) in their study by examining the temporal and spatial performance of important food grains crops across the state and country which was based on secondary data collected from different published sources, viz. Statistical Abstract of Haryana, Reserve bank of India Bulletin and Fertilizer statistic for period of (1960-61 to 1992-93) reveals that in case of total food

grains as well as for all the individual food grain crops, yield witnessed higher growth rates as compared to acreage in last two decades. This has helped in maintaining increasing trend in total food grain production at the national level. The study also reveals that increased use of irrigation water, fertilizers and HIV seeds could further increase the yield of food grain crops in most of states. They point out the determinants of agricultural performance are total cropped area, yield per hectare and irrigation water, regulated markets and road network. They play important role to achieve the food security in India.

Bhalla and Singh (1997) examine the results of an analysis of state level data on area and output of 43 crops for the 30 years from 1962-65 to 1992-95. Their study reveals that the period 1980-83 to 1992-95 is characterized by significant changes in the cropping pattern. The most important feature of changes are that at all India, the proportion of area under which has remained almost constant during 1962-65 to 1980-83, registered a sharp decline of 4.42 percent from 76.63 percent of total area in 1980-83. Most of these changes took place because of a decline in the share of area under coarse cereals of 5.27% from 25.08% in 1980-83 to 19.81% in 1992-95. On the other hand, the area under both rice and wheat actually registered a notable increase. The main shifts took place from coarse cereals to oil seeds whose share in cropped area increasing from 10.92% in 1980-83 to 15.31 percent in 1992-95. They also conclude that the cropping pattern changes in Haryana are similar to total India level. The area under food grains crops decline sharply, primarily as a result of sharp decline in area under coarse cereals as well as pulses and area under oil seeds recording a significant increase.

Hazra (2000) in his study pertaining to the food grains production exhibit that with technologies developments in agriculture and rising demand of non-food grains. Traditional farming is changing into modern commercial farming. From a much generalized perspective, Indian agriculture is increasingly getting influenced more and more by economic factors. This is not surprising because development of irrigation driven by groundwater expansion, infrastructure development, development and spread of short duration and drought resistant crop technologies have all contributed to minimizing the role of non-economic factors in crop choice of even small farmers. In the last decade, we have observed a decrease in grain orientation and diversification in crops. Crop diversification is intended to give a wider choice in the production of a variety of crops in a given area so as to expand production related activities on various crops and also to lessen risk. Between 1990-91 and 2000-01, around 4 percent of the gross cultivated area (GCA) -

representing approximately about 6.7 million hectares (m/ha) - has shifted from food grain crops to non-food grain crops. Among the food grain crops, the area under superior cereals, i.e., rice and wheat, is increasing; while that of coarse cereals (millets) is on decline.

Ministry of Agriculture (MoA, 2000) report, fertilizer, quality seeds, and better land preparation can raise cereal yields by about 85 percent; the maximum would be for pearl millet (127 percent) and the minimum for barley (32 percent). Potential increases for sorghum and wheat can reach 100 percent.

Kalamkar and Naraynamoorthy (2003) in another study related to the impact of the liberalization on the domestic prices of the different crops by covering various steps observe that growth rate real price for the crops like pulses and oil seeds have declined after liberalization of the Indian economy. However, the real profit of other crops has increased during the post liberalization period in most of the states.

Sinha and Kumar (2003), study related to the impact of agricultural price policy on production, productivity and cropping pattern in the state of Bihar and points out that the analysis of production and productivity in sample districts shows that the yield of important crops is distressingly low and below the national average with few exceptions. The study also reveals that the area under paddy, wheat, pulses and oil seeds increased but it has declined in case of maize and jute crops. Besides, the rate of crop diversification is merging. This does not indicate an encouraging trend and in this relation the authors' addresses some policy measures which broadly suggest conversation of price policy into an approach for integration of production and distribution objectives.

Thuslasamma (2003) examines the agricultural price policy in India and its impact on agricultural and other sectors of the economy states that the price support policies in India have helped in adoption of green revolution technology and rapid growth of production crops. However, excessive increase in support prices, more and above the cost of cultivation together with open-ended procurement policy has become counterproductive leading to many serious problems such as shifts in cropping pattern, monoculture, burgeoning food grain stock, sinking of ground water, Stalinization of soil and other environmental problems due to intensive cultivation. This study points out the skewed implementation of the policy towards rich and surplus states has widened regional disparities. As a result the subsidy provided is increasing adding to aggregate measure of support cautioning the policy makers for appropriate measures to

control. In order to provide food security for poor people various schemes have been functioning such as food for work program but the amount of good grains going to this purpose is meager. This will help in bringing food grain stocks at manageable levels and in reducing the buffer caring costs and there by food security in a WTO compatible manner.

Rena, Ravinder (2004) in his study pertaining to food problem became more severe after the partition of India and Pakistan in 1947, presenting a series challenges to India's agricultural sector. He observes that even during good harvest years, food imports remain high. A large segment of people were poor. To mitigate these problems, India adopted farming strategies under the "Green Revolution" in the mid-1960s. The application of modern farming technology, introduction of high-yielding varieties of seeds, increased use of fertilizers, development and expansion of irrigation systems, extension of credit and educational services to farmers. These activities resulted in a drastic increase of farm products leading India to achieve self-sufficiency in food within a short period of time. The "Green Revolution" has contributed to Indian agriculture tremendously and transformed India from a starving nation to a food exporter. The activities that comprise the "Green Revolution" are worth emulating in the Eritrean environment. This paper explores the impact of the "Green Revolution" on Indian agricultural production with the aim of drawing lessons for Eritrea to modernize its agriculture and subsequently solve its food insecurity problem. The Indian experience serves as a model for Eritrea to achieve self-sufficiency in food.

Varghese (2004) in his study related to the trends in the area, production, and productivity of cardamom in Kerala and the behavior of price from (1970-71 to 2002-03) and states that the massive shifting of cardamom to other crops is mainly due to recurrent fluctuation in prices. The author's findings suggest that there is need to reformulate spices price policy for the benefits of small and marginal growers of cardamom.

Mathur and Das (2006) in their study pertaining to the determinants of agricultural growth at all India level for the period 1990-91 to 2003-04. They suggested that the government investment in agriculture, subsidy, agriculture prices and usage of electricity are the significant factors that decide flows of production of Indian agriculture.

Gadgil and Gadgil (2006) related to the impact of the inter-annual variation of all India summer Monsoon rainfall on gross domestic production and food grain production by analyzing the observed variation during (1951-2003). They point out that a significant finding observed

asymmetry in the response to Monsoon variation with the magnitude of the impact of deficit rainfall on GDP and grain production being charger than the impact of surplus rainfall. They finds that despite a substantial decrease in the contribution of agriculture of agriculture to GDP over the five decades, the impact of severe draughts has remainedbetween 2 and 5 percent of GDP throughout. They have suggested that a possible reason for the relatively low response of grain production to average or above average monsoon rainfall post 1980 is that the strategies which would allow farmers to reap benefits of the rainfall in good monsoon years are not economically viable in the current millennium. The experience of the monsoon season of 2006 suggests that the losses due to floods, caused in part by the sudden release of the water stored in the reservoirs of dams may be another important factor.

Narayana and Moorthy (2007) in their study related to the reasons for deceleration in agricultural growth in India. The authors suggested that there are many reason for the declaration in agricultural growth are (1) Reduction of public investment in agriculture (2) Inadequate institutional credit (3) Reduction in the use of various yield increasing input. (4) Price policy that recover the cost of cultivation (5) Irrigation Fatigue, but the technology Fatigue is the main reasons for this. This study also suggest that the policy makers must make effort to convert agriculture into a professional enterprises by making adjustments in the minimum support price of various crops in consonance with the cost of cultivations.

Behra and Mishra (2007) in another study pertaining to the declaration in agricultural growth and states that declaration in the growth of agricultural sector is not exclusively due to policy fatigue as point out by Narayana Moorthy (2007). They also state that it is due to a combination of policy fatigue and institutional fatigue. They also point out that there is need to a comprehensive policy framework for correcting the declaration phenomenon and facilitating accompanied with greater emphasis on developing appropriate micro and macro level institutions. This is required for encouraging cooperation, reducing transaction cost, easy and favorable access to input and output linkages, sustainable management of natural resources, dissemination of information and controlling for uncertainty that are the pre-conditions, for facilitating agricultural growth and development.

Shahoo and Mahapatra (2008) in their study concomitant to the determinants of state domestic production for the period 1981-82 to 2002-03, said thatthere is strong inequality of agricultural income among the states of India. Better performing states are mostly in the western and

southern regions. On the other hands poor performing states are from eastern and northern regions. Further, their study also reveals that agricultural growth rate has been decelerated in the states like Punjab, Haryana, and Western Uttar Pradesh in the post reform period. Regression results of the study show that disparity in the agricultural output is significantly determined by variation in the fertilizer use and length of Pucca Road.

Dev and Rao (2010) related to the effectiveness of agricultural Price Policy (APP) in enabling farmers get sufficient profits to promote investment, technology and productivity and thereby to the Food security of the country. The policy frame work has been largely successful in playing a major role in regard to providing a reasonable level of margins of around 20 percent in both rice and wheat enabling the massive tasks of procurement and distribution that are crucial for poverty reduction. The increasing cost of production due to the overemphasis on getting prices right is the major factor that led to higher support prices. Another factor is the percolation of volatility in global prices through trade liberalization. Because of this, wheat support price had to be kicked steeply in recent times so that sufficient quantities are procured. This has distorted parity between the prices of Rice and Wheat. It is argued that the balance between price and non-price interventions has to be brought back as in the decades prior to nineties. The yield agricultural growth is preferable to reduce price and simultaneously enhance welfare of the farmers and poor.

HanumanthaRao (1968) in his study states that inputs like fertilizers and improved seeds if used under the conditions of assured irrigation may promote growth with stability, but if used under the conditions of uncertain rainfall may increase the range of fluctuations in output with growth. Since jowar, bajra and almost all the pulses crops are grown on marginal lands under rain fed conditions; these crops have shown very high degree of instability/fluctuation in output with positive and high growth. Thus, the above statement undoubtedly holds good for Maharashtra.

Minhas and Srinivansan (1968) in their treatise related to the estimation of the compound growth rates of food grains production in Indian agriculture. Their study concludes that the rate of growth of food grains production has not declined but in fact remained constant at 3.20 percent per annum.

Gangwar and Singh (1972) in their study pertaining the trends in agriculture production of Haryana and India, exhibit that the growth rates of area and production of principle crops (Wheat, Rice, Jawar, Bajra, Gram, Pulses and oilseeds) in Haryana are much higher than the rest

of the country. However, the situation in case of gram, pulses, and oilseeds was not promising in Haryana, indicate an unbalanced growth rate of agriculture.

Kahlan, A.S. and Bal, H.K.(1977) in their study by implementing Cobb-Douglas production functions at all India level for two periods representing pre green revolution periods (1960-61 to 1964-65) and the post-Green Revolution periods (1967-68 to 1972-73) to compare factor shares. They took the value of agricultural production as dependent variables and net sown area, proportion of irrigated area, tractors, bullock labour, human labour, fertilizers, rainfall as explanatory variables. Their study concludes that the highest contribution is made by human labour followed by the net sown area in both periods. The shares of fertilizers however increased from 7.20 percent in period first to 15.56 percent period second while labour shares declined from 48.55 percent to 46.03 percent.

Aiyasamy, P.K. and Subramanian, V. (1979) in their treatise related to the estimation of the compound growth rates in area, production and productivity of rice in different district of TamilNadu for the two periods viz. pre green revolution period (1965-66 to 1973-74). Their study also concludes that the green revolution had ushered in a phase of breakthrough in TamilNadu's rice production through the growth rates of productivity were not uniform among the districts.

Singh, H. and Bokil, S.D. (1980) estimates the compound growth rates of area, production and yield of wheat in India and other wheat growing states for the periods 1954-55 to 1964-65 and 1967-68 to 1977-78. They concluded that the growth rates of wheat with respect to area, production and yield were higher in the post- high yielding variety period.

Pandy, U.K., Suhag, K.S. and Manocha, V. (1983) investigate the factor shares of output in Haryana agriculture under three periods: pre green revolution period (1956-57 to 1965-66), Green revolution period (1966-67 to 1973-74) and post Green revolution period (1974-75 to 1981-82) with the help of secondary data. In this study an attempt has been made to study the impact of the technology change on factor proportions and their share in output based on total factor productivity approach. Their study reveals that the traditional inputs accounted for the bulk of total factor inputs during pre- Green revolution period, while in the subsequent periods. The shares of modern inputs has considerably increased among districts which had better resources had realized the benefit of technological change in the state of Haryana.

Singh (1989) decipher that during 1969-86, the cropping pattern had changed sharply in favor of wheat and rice in Punjab and Haryana stated that factors affecting the cropping pattern are HYV, relatively profitability, value productivity, irrigation facilities and farmer's harvest prices. Wheat and Rice are relatively more profitable than coarse cereal, pulses and oil seeds. So the cropping pattern has become most favorable for these crops. The production of oil seeds and pulses has declined due to less profitable than competing crops. Gram shows just decline in both states. Rapeseed and mustard are only gainer- crops among oil seeds in these states.

Chand et al. (2007) in their study related to the trend in agricultural underlying slowdown in agriculture and explore – ways and means to bring about acceleration. They point out that the growth rate analysis show that the initial for agricultural growth, but the post WTO period witnessed a sharp decline in the growth, rate almost all sub-sectors and commodity groups in the agricultural sector. At the state level, the growth rate has turned negative. The main reasons for deceleration and stagnation agricultural output (after 1995-96) is a slowdown in growth of fertilizer use, irrigation, and energy (electric power) in some cases and stagnation ever a decline in other cases. Crop intensity and area under cultivation have also shown either a poor growth or a decline. Diversification towards high-value crops has also slowed down in some cases farmers have been diversifying away from the high-value crops towards low value, less risky and loses input demanding crops. The terms of trade for agricultural have shown a deterioration and agricultural income faced and increased instability in the recent years. Low level of input use and low productivity in most of the states offer some ray of hope to receive agricultural growth, but this would require simultaneous effects on several fronts. These include (a) stepping un investment and putting in place suitable institutional mechanisms to exploit irrigation potential that exists in most of states ; (b) increasing power supply to the sector; (c) Promoting fertilizer use by expanding the distribution network and improving credit facilities for farmers; (d) establishing competitive seed markets and ensuring attracting price for seeds ; (e) improvement in terms of trade for agriculture; (F) Measures to Mitigate risk in farming.