CHAPTER-2
REVIEW OF LITERATURE

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2.1 Introduction

This chapter depicts the review of existing literatures related to topic of study. This chapter is divided into six sections which consists global context, national context, and regional context, scope of the study, rational of the study and research gap. Literatures of global, Indian and regional context put light on different concepts and dimensions of development of agricultural productivity.

2.2 Review of Literature: Global Context

Wong (1987) analyzed productivity indexes labor, land, and total factor productivity indicators were estimated for China and India. The outcomes revealed that strong upward trends of labor productivity and land productivity in 1960-1983 but a strong downward trend of total factor productivity in the 1960s. China lacked the administrative personnel needed for the success of its collectivization movement, and India lacked the technology needed for the success of its cooperatives and Community Development Program. Further, suggested that increased land and labor productivity in China and India has been achieved at a relatively high cost. China and India are largely attributable to the increase of inputs used, technological advancement, expansion of cultivated areas, and institutional changes. The combination of these factors not only altered these countries' partial and total factor productivities but, also turned the two nations into net exporters of agricultural products.

Luh and Stefanou (1991) suggested that development measures of productivity growth appropriated to a more general structure of production than have been previously measured. The dynamic adjustment model provides a basis for explaining agricultural investment patterns and some of the adjustment problems experienced by the agricultural production sector. In addition, the traditional farm problem of low resource earnings can be addressed within the adjustment-cost framework because supplementary investment involves a positive adjustment cost. For these studies decomposing productivity growth by regressing total factor productivity indices on research, extension, and other variables, the contribution from public research and

extended to productivity growth is distorted when some of the inputs are not applied at their long-run equilibrium levels.

Mankiw, Romer and Weil (1992) estimate the findings of this empirical paper suggest Matsuyama's prediction regarding the relationship between productivity in the agriculture sector and growth is only partially consistent with the evidences from the contemporary developing countries. As the theory predicts the openness of economies negatively affects the gains in the economic growth from improvement in the agricultural productivity , however, this effect is not strong enough to cause either a long-run negative relationship between economic growth and agricultural productivity in the contemporary developing countries which are assumed to be open (which Matsuyama called welfare loss) or to bring large differences in the gains from agricultural productivity between the open and closed economies.

Ramaila (2011) used database for productivity estimates at provincial district level are not readily available in some parts of the World. In developed countries, database is constructed from district level and then aggregated to provincial level through to national level. Only a few countries in the developing world construct data at district level. Some countries in Asia and central-Asia (in particular in India) create a comprehensive and detailed on farm database production and input use. South Africa does have a very limited database at district level and provincial level.

Gollin, Lagakos and Michael (2011) argued According to national accounts data from developing countries, value added per worker is on average four times higher in the industrial sector than in agriculture. This agrarian productivity gap, when taken at face value, proposes that labor is greatly misallocated in emerging countries. In this paper we ask to what extent the gap is still present when better measures of inputs and outputs are taken into consideration. To do so we construct a new data set for a large number of emerging countries, with measures of hours worked and human capital per worker by sector, urban-rural cost-of-living differences, and alternative measures of value added per worker built from household income survey evidence.

Our results suggest that the typical resident of the developing world could roughly double her real income by moving out of the agriculture sector. Why don't workers in developing countries move out of agriculture to close this gap? Answering this question seems like an important step in understanding financial development.

2.3 Review of Literature: National Context

Parthasarathy (1984) computed the degree of instability as judged by percentage deviations is quite high in all the districts. It is higher for food grains than for all crops. North-coastal Andhra comprising Visakhapatnam, Srikakulam and Ananthapur in Rayalaseema are the most difficult districts since in these high instability in foodgrains is related with low growth. Nalgonda district in Telangana is rather exclusive with high growth rates of production and low instability. Sub-period 11 associated with the green revolution in general shows a higher degree of instability. There is also a recommendation that districts which have higher growth rates have higher instabilitv.

Joseph (2004) describe the northern states, which contribute near a half of the country's food grains production and over a four-fifths of milk, sugar cane and potato, have touched the limit of their agricultural growth for numerous reasons. This in turn has controlled to the falling growth of its industry and services sectors as well. Employment in agriculture has remained high at two-thirds of the labor force in the big states of Uttar Pradesh and Rajasthan. An attempt has been made in this paper to comprehend the various surfaces of underperformance of the northern states in comparison with other regions and to recommend the possible ways by which these states could improve their future economic and social performance.

The last decade or so, following reforms, saw an improvement in economic growth and social development in the country as a whole. The performance of all states, yet, has not been uniform during this period and a number of states have underachieved. While southern states and, to some extent, western states forged ahead, northern states in overall did not do well. This has pushed down their relative position vice-versa other states and sharpened inter-state disparities. This is a matter of serious concern for organizers and policy-makers. The past warm performance of northern states is reflected in a number of areas and has important implications for the ability of the country to rice further up the development ladder. An attempt has been made in this paper to understand the various facets of underperformance of the northern states in comparison with other, regions, and to suggest the possible ways by which these states could improve their future economic and social performance.

Kumar and Mittal (2006) surest the sustainability issue of the crop output is fast emerging. The Productivity achieved during the 1980s has not been sustained during the 1990s and has posed a challenge before the academics to shift the production

function by improving the technology index. It has to be over by suitable technology interferences, judicious use of natural resources and harnessing biodiversity. Throughout the Green Revolution era, big investments were made on research and development for the irrigated agriculture. The promotion of HYV seed - fertilizer - irrigation technology had a high pay-off and quick strides of improvement were made in food production. Though, in recent years, agriculture has been undergoing diminishing returns to input-use and important proportion of the gross cropped area has been facing stagnation or negative growth in TFP.

The problems of waterlogging and soil salinity may grow sooner or later in many irrigation project areas due to over-irrigation and deep filtration and seepage losses in the absence of a appropriate drainage system. More than half of the mandatory growth in yield to meet the target of demand must be achieved from research labors by developing location-specific and low input-use technologies with stress on the region/sub-regions/districts where the present yields are below the potential nationwide average yields. The districts/ sub-regions/regions where TFP stagnation or decline has taken place, as identified in the paper, must get importance in agricultural research and development.

Sujata & Kannan (2006) urged used modern verities, irrigation and fertilizers were important aspects of higher growth in crop production in the country. The crop output growth model indicates that the enhanced capital formation, improved irrigation facilities, normal rainfall and better fertilizer consumption will help to improve crop output in the country. However, technological and institutional supports for a few crops like rice and wheat have brought important changes in crop area and composition in some regions. Rice accounted for only 15.4% of GCA in 1962-65 and it increase to 23% in 2003-06 in North West India.

Tripathi (2008) analyzed our estimation showed that amongst 1969 and 2005, agricultural growth relied almost completely on increased in conservative factors while growth in productivity was negative. For only initial periods of reforms, agrarian TFP growth is positive. Whereas a careful examination of the underlying causes of the productivity go-slow in Indian agriculture is beyond the scope of this study, we can propose some probable causes. Perhaps a more important explanation for the productivity slowdown is a relative decline in public investments in the agricultural sector. The public investment in agriculture in India fell in the 1990s as a percentage of agricultural GDP (Raghabendra Jha 2007). Approved (domestic and

foreign) private investment in agriculture increased rapidly but unevenly until the macro economic crisis of 1997-1998 and has not yet recovered. The stagnation of TFP growth has serious implications for the long-term performance of Indian agriculture. As we move into the 21st Century, it will be increasingly difficult to expand convention factors of production such as agricultural land and labor, and without growth in TFP, agricultural output will continue to stagnate or grow only very slowly. This will further erode the profitability of agriculture and speed the drain of resources away from agriculture and rural areas to other sectors of the economy. It will undermine the important role of agricultural growth in reducing poverty and generating broad-based economic growth for the Indian economy.

Jha, Tripathi and Mohanty (2009) considering the multidimensional importance of agricultural diversification, the present study assesses the determinants of resource diversification at different levels: country, state (Haryana) and farms in the Kurukshetra district of Haryana. The study considers alternate approaches to resource diversification namely; first, the concentration index as measured by Simpson Index and second, percent area under non-food crops. These alternate measures of diversification have been regressed separately on a set of independent variables like the size and the quality of land, institutional credit, road density, (market, urbanization) and income at the country level.

The regression results with diversification indices start becoming clearer from the state-level analysis. A negative relationship of alternate measures of diversification with irrigation intensity clearly shows that an increase in irrigation is leading to specialization under paddy and wheat crops. This process is strengthened with the penetration of the regulated market. In

Farm level diversification suggests that the small farm is less diversified in the Kurukshetra district of Haryana. Interestingly, diversification with crops is increasing risk in the farm portfolio; whereas, diversification with livestock reduces risk in farm income.

Ravi (2009) urged **t**he nation is string to find away and means to keep its increase rapidly population adequately fed. On the one hand, it is facing the problem of declining productivity and one the other, challenges posed by liberalization. In such a scenario, leveraging the available natural resources and existing infrastructure is the only way to make the ends meet.

Chaudary (2012) describe it is a matter of serious concern that efficacy decline is observed in nearly fifty percent of the states. This implies vast potential increase in production even with current technology. Some of these states do not report general productivity regress only due to the fact that technical progress outweighs the impact of decline in efficacy. The technical stagnation and near-stagnation is observed in utmost of the states. Demand for food would continue to rise and food supply has to keep pace in order evading shortages. This requires production to increase manifold. Since net area below cultivation has almost exhausted, productivity levels have to upsurge by leaps and bounds. It is essential to reverse the efficacy decline that is exhibited by many states and achieve a faster and superior scale of diffusion of technical inventions across states.

Lagakos and Waugh (2013) they argue that cross-country productivity differences are superior in agriculture than in non-forming in part because of cross-country differences in the selection of heterogeneous employees by sector. In poor countries, where economy-wide efficacy is low, subsistence food provisions lead workers that are relatively unproductive in agricultural work to nevertheless select into the primary sector. In rich countries, in contrast, those few workers self-selecting into farming are those who are relatively most productive at farm work.

Quantitatively, we find that the selection canal leads agricultural output differences to be about twice as large as those of the non-agricultural sector. This outcome was found both in isolation and in the presence of rival mechanisms such as exogenous sector specific output differences and capital and land differences. The key challenge our model faces is that for selection to work, it still requires large, exogenous output differences either of a general or agriculture specific nature to draw labors into agriculture. Of course, what explains these differences is still an open question that both better dimension and theory can hopefully address.

Aayog (2015) computed this paper has concentrated on a select but important set of policy issues confronting Indian agriculture to come up with recommendations that would help bring about a second Green Revolution in India and sustain robust growth in agriculture. Five such issues have been chosen: measures necessary to raise productivity, policies ensuring remunerative prices for farmers, reforms necessary in the area of land leasing and titles, a mechanism to bring quick relief to farmers hit by natural disasters, and initiatives necessary to spread Green Revolution to eastern states. In the post-reform era, India has relied more heavily on prices to expand

agricultural production with technology and other non-price factors taking backseat. This has had the unhappy side effect of relatively high food inflation and cyclical growth pattern. In the process, the technological factors have been neglected. The imbalance must be corrected. Organic farming in eastern and north-eastern States could be rewarding. The appropriate support for quality input supply, quality testing and certification and processing would be pre-requisites. Value addition in the produce can be achieved with appropriate branding for ex

2.4 Review of Literature: Regional Context

Vamsi (2000) estimated that seeds, fertilizers and pesticides, there has been a rapid increase in the use of high yielding verity (HYP) seeds, artificial fertilizers and pesticides in Telangana. First, from the mid-1980s ahead, there has been a change away from the practice of buying HYP seeds from last year's crop to that of buying seeds from the market. Second, the use of pesticides was nearly absent till 1980 in the villages surveyed. This has been transformed with about 10-15 per cent of the input costs in production, now rising due to pesticide use in the commercial crop.

Subrahmanyam and Sekhar (2003) analyzed special consideration for accelerating agricultural growth. North Telangana shows poor performance in cotton and jowar and short rainfall zone is covering in the yields of groundnut and cotton. The high rate of groundwater exploitation without sufficient measures for recharge has been resulting in a decline in the water table. Though some shortfall from the suggested doses exists, it is only due to insufficient damp conditions. Improvement in the soil moisture conditions through watershed programs, proper maintenance of irrigation infrastructure, and raising yield possible through agricultural research and extension should be the focus of agricultural development in the state. Expenditure on agricultural research and extension is found have been almost stagnant in the 1990s. Whereas soil and climatic conditions seem to be the major factors for low yields of cotton and groundnut, poor irrigation in terms of quantity and quality are responsible for low yields of rice and sugarcane.

Reddy (2007) analyses the onwards formation of united Andhra Pradesh in 1956 at district level, by using Malmquist productivity indices. Overall TFP growth in agriculture and allied activities in Telengana is about 1.3% per annum, the same are 1.1% per annum in costal, while TFP growth in Rayalaseema is stagnant. It indicates

that, there is a convergence in TFP growth among districts of developed coastal and less developed Telengana regions. Another most important finding is that irrespective of region most backward district in agriculture, that is Mahbubnagar, Nizamabad, Nalgonda of Telengana state and Vishakhapatnam , Anantapur and Srikakulam of Andhra Pradesh.

Sihmar (2014) analyzed in Haryana, the growth rate of agricultural output shows changes in spatial pattern of different harvests. On the one hand some crops like rice and wheat show a very satisfactory presentation in their production in all the three periods (1980-81 to 1989-90, 1990-91 to 1999-2000 and 2000-01 to 2006-07). On the other hand, crops like Gram, Massar, Maize, Sesame, groundnut, showed unsatisfactory presentations in their production. All these yields registered negative growth rate in production ended the periods.

The instability has been low and also declined over the time in wheat and rice and there are clear evidence of crop diversification towards paddy, wheat, cotton and other harvests. Instability is declining in a few crops such as wheat, rice, Sugarcane not in India however it is in Punjab, five more states; viz., Haryana, J and K, Kerala, Bihar and Rajasthan recorded a statistically significant declining trend(S Mahendradev 1987). The instability in wheat, paddy and sugarcane has been low, while in gram, moong, massar, it has been high in all the periods. The result shows that the trend of instability is still high in many yields like gram, moong, massar. That was why the production of jowar augmented later and with this result the instability declined and it became low instability crops throughout 2000-01 to 2006-07.

District-wise, it is found that the instability is low in wheat in all the districts over time period. The instability in Rice is also low, though only in those districts which are relatively advance in agriculture e.g. Karnal, Kurukshetra. The changeability in production of paddy is declining in karnal, Kurukshetra, Ambala, Jind, Hisar, Sirsa and Faridabad throughout the study period. This study finds out that there is a very positive impact of green-revolution and new economic reforms on total food grain production. But it has it create big trench between larger crops such as wheat, paddy, Sugarcane and coarse cereals such as Bajra, Jawar, Maize and pluses crops.

Kirschke and Häger (2011) argued that future technological progress and productivity increase, too, are widely predictable and demanded, and are credited to improved breeding activities and improved agronomic practices and farm management. However, following this discussion, they have tried to shorten the

recent scientific discussion on technological options in farming by grouping the many proposals under breeding (genetic) options and agronomic (non-genetic) options.

Meteorological Centre Chandigarh (2013) estimate that throughout current monsoon season 18 western disruption namely upper air system, Trough in westerly's, Induced cyclonic circulation travelled eastward and were also in interaction phase with monsoonal flow, Seven low pressure area travelled west/northwest ward along monsoon trough affected this region, 14 cyclonic circulation embedded in the region of monsoon trough were observed. Detailed analysis observational aspects and interpretation of various model output indicate that possible reason for heavy to very heavy rainfall conditions in Haryana during the monsoon 2013 was due to interaction westward moving monsoonal low pressure system with westerly filed viz, cyclonic circulation, trough in mid and upper tropospheric westerly and also due to positions of seasonal trough near its mean position along with cyclonic circulation embedded therein.

2.5 Scope of the study

Agricultural productivity may have wider scope in Telangana because it has abundant natural resources which can successfully increase productivity in any field. Haryana has more opportunities and also focusing on agriculture production.

2.6 Rational of the Study and Research Gap

Haryana is one the oldest state of India, formed in 1966, whereas Telangana is a new state formed in 2014. Haryana has become one of the richest states in India by focusing and improving agriculture production whereas Telangana has yet to learn a lot from Haryana in the field of production and other areas of agriculture.

Haryana is in the northern part of India and is one of the richest states of rest of the 29 states whereas Telangana state is recently framed. Agricultural productivity in Telangana comparison to Haryana is very less and it is main reason it is considered as one of the poorest state in South India. This kind of comparative study has not yet happened until now which makes this comparative study different from others.