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PROBLEMS AND PROSPECTS OF AGRICULTURE IN INDIA: A STUDY

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ABSTRACT:

Agriculture is the mainstay of Indian Economy and about 65% of Indian population depends directly on agriculture. It supports about 17 percent of world population from 2.3 percent of world geographical area. The economic reforms, initiated in the country during the early 1990s, have put the economy on a higher growth trajectory. Though the contribution of agriculture to the overall Gross Domestic Product (GDP) of the country has fallen from about 30 percent in 1990- 91 to less than 15 percent in 2011-12, agriculture yet forms the backbone of economic development. Agriculture has vital supply and demand links with the manufacturing sector. On one hand it is facing the problem of declining productivity

and on 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.

KEYWORDS: Agriculture, Gross Domestic Product, Indian Economy, Public Private Partnership.

INTRODUCTION :

Knowledge of the extent of existing infrastructure and natural resources is one of the most basic pre-requisites to utilize them effectively and in a sustainable manner. Agricultural Science endeavours to develop technologies for enhancing productivity and reducing the cost of cultivation. In recent years, agriculture sector in India has witnessed spectacular advances in the production and productivity of food grains, oilseeds, commercial crops, fruits, vegetables, food grains, poultry and dairy. Adoption

of high yielding varieties by farmers coupled with the use of higher doses of fertilizer and assured irrigation through tube wells accelerated the pace of progress in agriculture. As a result of adoption of improved inputs and management practices, the total food grain production increased from a mere 50.8 million tonnes in 1950-51, to 217 million tonnes in 2010-11 and productivity increased from 522 kg/ha to more than 1709 kg/ha. The productivity of wheat, rice and oilseeds increased to a greater extent than other crops.

The increase in production of food grain was possible as a result of adoption of quality seeds, higher dose of fertilizer and plant protection chemicals, coupled with assured irrigation. India has emerged as the second largest producer of fruits and vegetables

in the world in addition to being the largest overseas exporter of cashews and spices. Further, India is the highest producer of milk in the world. India has Monsoon climate in which a year has been divided into two distinct seasons of summer and winter. Rainfall occurs mainly in summer. India has a strong weather forecasting system developed and maintained by Indian Meteorological Department (IMD). Apart from weather forecasting and severe weather warning, it also gives agro meteorological services to farmers in India. India has diverse agro-climatic zones from north to south and from east to west. It has been divided into fifteen different agro-climatic zones, which signifies its diversified agricultural production from tropical to temperate crops.

Indian Agriculture is characterized by small and marginal operational holdings. About 85% of total cultivated land has been fragmented into less than 10-hectare land. About 60% of farmland is less than 4 hectare in size. India ranks first in the world in milk production, which was around 100 million tonnes in 2010-11. Strong networks of Milk Cooperatives, have been instrumental in this phenomenal performance of dairy sector in India. Presently, 1.13 lakh village level cooperative societies spread over 265 districts in the country form part of the national Milk Grid. This Grid links milk producers throughout India and consumers in 700 towns and cities.² De-licensing of dairy sector in 1991 has directed considerable amount of private funds both from inside and outside country in this sector especially in manufacturing facilities while investment in cooperative sector are concentrated largely in procurement and processing of milk.

Livestock sector contributes about 27% of the G.D.P. from agriculture and allied activities. This sector has excellent forward and backward linkages, which promote many industries and increase the incomes of vulnerable groups of the society such as agricultural labourers and small and marginal farmers. Livestock plays an important role in the socio- economic life of India. It is a rich source of high quality foods such as milk, meat and eggs and a source for income and employment to millions of rural farmers, particularly women. With a large human population and more than 250 million economically strong potential consumers, the domestic demand for these food products are increasing rapidly, the demand often exceeding the supply. India possesses the second largest livestock population in the world.

Production and export of poultry products have shown considerable growth in the recent decades. Export of such products to countries including Bangladesh, Srilanka, Middle East, Japan, Denmark, USA, and Angola augers well for this industry. Fishing, aquaculture and a host of allied activities are a source of livelihood to over 14 million people and a major source of foreign exchange earner. In 2010-11, this sector contributed about 1% of G.D.P. and 5.3% of G.D.P from agricultural sector. 8,118 KM of coastline gives geographical basis for the development of marine fishery sector and cultural factor boosts the inland fishery sector in India.³

MAJOR PROBLEMS OF INDIAN AGRICULTURE

The major problems faced by the Indian agriculture are those of population pressure, small holdings, depleted soils, lack of modern technology and poor facilities for storage.

- **Population Pressure:** India has a huge population of over one billion and it is increasing at a very fast rate. According to 2011 census figures the overall density of population is 382 persons per sq. km. This has created great demand for land. Every bit of land has been brought under the plough. Even the hill slopes have been cut into terraces for cultivation.
- **Small and Fragmented Land Holdings:** The pressure of increasing population and the practice of dividing land equally among the heirs has caused excessive sub divisions of farm holdings. Consequently, the holdings are small and fragmented. The small size of holdings makes farming activity uneconomical and leads to social tension, violence and discontentment.
- **Inadequate Irrigation Facilities:** By and large the irrigation facilities available in India are far from adequate. So for half of the total area under food crops has been brought under irrigation and the remaining half is left to the mercy of monsoon rains which are erratic in time and space.
- **Depleted Soils:** Indian soils have been used for growing crops for thousands of years which have resulted in the depletion of soil fertility. With deforestation the sources of maintaining natural fertility of soil has been drying out. Lack of material resources and ignorance of scientific knowledge have further depleted the soils of the natural fertility. Earlier only animal waste was enough to maintain soil fertility.
- **Storage of Food Grains:** Storage of food grains is a big problem. Nearly 10 per cent of our harvest goes waste every year in the absence of proper storage facilities.⁴ This colossal wastage can be avoided by developing scientific ware-housing facilities. The government has taken several steps to provide storage facilities.

- **Farm Implements:** Although some mechanisation of farming has taken place in some parts of the country, most of the farmers are poor and do not have enough resources to purchase modern farm implements and tools. This hampers the development of agriculture.

STRUCTURE OF INDIAN AGRICULTURE

The agriculture sector in India has undergone significant structural changes in the form of decrease in share of GDP and State of Indian Agriculture indicating a shift from the traditional agrarian economy towards a service dominated one. This decrease in agriculture's contribution to GDP has not been accompanied by a matching reduction in the share of agriculture in employment. About 52% of the total workforce is still employed by the farm sector which makes more than half of the Indian population dependant on agriculture for sustenance. The average size of operational holdings in India has diminished progressively from 2.28 ha in 1970-71 to 1.55 ha in 1990-91 to 1.21 ha in 2005-06. As per Agriculture Census 2005-06, the proportion of marginal holdings (area less than 1 ha) has increased from 61.6 percent in 1995-96 to 64.8 percent in 2005-06. This is followed by about 18 percent small holdings (1-2 ha.), about 16 percent medium holdings (more than 2 to less than 10 ha.) and less than 1 percent large holdings (10 ha. and above).⁵ With the declining share of agriculture to GDP, the continuing high pressure of population on agriculture and the increasing fragmentation of land holdings leading to decreasing availability of cultivated land area per household, the agriculture sector alone would hardly be in a position to create additional employment opportunities to sustain the livelihood of the rural households. This fragmentation of land has serious consequences in terms of owning and using modern technology and farm equipments, and also in provision of inputs including agricultural credit and extension. The consequences are high transaction cost for farmers, banks and service providers, inability to own or finance farm equipment because of fluctuating incomes of tiny farmers and viability considerations, smaller volumes of produce reducing ability to negotiate at market place etc. Higher cost of cultivation and lower incomes are a serious disincentive for farmers to continue farming. There is a need to find ways that enable these small ownership holdings aggregate to minimum viable size of operating farms without the individual landowners losing their ownership rights.

Leasing out agricultural land is not permitted in most of the major agricultural states such as Bihar, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Odisha, Uttar Pradesh, Telangana area of Andhra Pradesh, Himachal Pradesh, Jammu and Kashmir, etc. except by Defence personnel, minors, disabled persons and the like. This calls for creation of additional employment opportunities in the non-farm and manufacturing sector, especially in agro based rural industries which have area specific comparative advantage in terms of resources endowment and development possibilities. This would require suitable skill development of the people so as to gainfully employ them in non-farm activities. This alone would be able to make agriculture viable in a sustainable manner. In addition, by creating more employment and absorbing some of the surplus labour in agriculture, this will contribute to achieving our objective of inclusive growth. Fragmentation of operational holdings has widened the base of the agrarian pyramid in most states. Empirical studies have, however, demonstrated that agricultural productivity is size neutral. Factors that determine productivity favourably include among others an easy and reliable access to modern inputs, access to suitable technology tailored for specific needs, the presence of support infrastructure and innovative marketing systems to aggregate and market the output from such small holdings efficiently and effectively. In agricultural technology, the use of high yielding varieties as in the case of Bt cotton and maize, economy in input use, the availability of quality seeds and farming techniques such as system of rice intensification enabled finally by marketing links all have high potential to improve yield. The growth performance of the agriculture sector has been fluctuating across the plan periods. It witnessed growth rate of 4.8 per cent during the Eighth plan period (1992-97). However, the agrarian situation saw a downturn towards the beginning of the Ninth plan period (1997-2002) and the Tenth plan period (2002-07), when the agricultural growth rate came down to 2.5 percent and 2.4 percent respectively. This crippling growth rate of 2.4 percent in agriculture as against a robust annual average overall growth rate of 7.6 per cent for the

economy during the tenth plan period was clearly a cause for concern. The trend rate of growth during the period 1992-93 to 2010-11 is 2.8 percent while the average annual rate of growth in agriculture & allied sectors GDP during the same period it was 3.2 percent. Agricultural GDP growth has accelerated to an average 3.9 percent growth during 2005- 06 to 2010-11.

VARIATION AT STATE LEVEL

The Indian agriculture growth pattern has been highly varied at the state level. Since agriculture is a state subject, the overall performance of the agriculture sector in India largely depends on what occurs at the state level. There is a wide variation in the performance of different states. During 2000-01 to 2008-09, the growth performance of agriculture in Rajasthan (8.2%), Gujarat (7.7%) and Bihar (7.1%) was much higher than that of Uttar Pradesh (2.3%) and West Bengal (2.4%).⁸ The recent dynamics of erstwhile poor performing states like Orissa, Chhattisgarh and Himachal Pradesh showing strong growth in agriculture can be seen from Crop-Specific Growth. During 2010-11, food grains production was 244.78 million tonnes, comprising of 121.14million tonnes during Kharif season and 123.64 million tonnes during the Rabi season. Of the total food grains production, production of cereals was 226.54 million tonnes and pulses18.24 million tonnes. Production of rice is estimated at 102.75 million tonnes, Wheat 88.31 million tonnes, coarse cereals 42.08 million tonnes and pulses 17.28 million tonnes. Oilseeds production during 2011-12 was 30.53 million tonnes, sugarcane production at 347.87 million tonnes and cotton production is at 34.09million bales (of 170 kg. each). Jute production has been 10.95 million bales (of180 kg each). Despite inconsistent climatic factors in some parts of the country, there has been a record production, surpassing the targeted production of 245 million tonnes of food grains by more than 5 million tonnes during 2011-12.²⁵ Growth in the production of agricultural crops depends upon acreage and yield. Given the limitations in the expansion of acreage, the main source of long-term output growth is improvement in yields. In the case of wheat, the growth in area and yield have been marginal during 2000-01 to 2010-11 suggesting that the yield levels have plateaued for this crop. This suggests the need for renewed research to boost production and productivity. All the major coarse cereals display a negative growth in area during both the periods except for maize, which recorded an annual growth rate of 2.68 per cent in the 2000-01 to 2010-11 period. The production of maize has also increased by 7.12 percent in the latter period. In pulses, gram recorded a growth of 6.39 percent in production during the same period driven by expansion in the area under cultivation. Soya bean has recorded a high rate of growth in production in both the periods, driven primarily by expansion in area under cultivation. In fact oilseeds as a group have shown some significant changes in the two decades: the production growth rate has more than doubled in the decade of 2000s over the previous decade, driven both by productivity gains (eg. groundnut and soya bean) as well as by area gains. The average annual growth rates of production and productivity of groundnut during 2000-01 to 2010-11 are abnormally high due to high fluctuations in the production and productivity during the years 2002-03, 2006-07 & 2007-08. The trend growth rates in the production and productivity of groundnut during 2000-01 to 2010-11 work out to 1.66 per cent and 2.63 per cent respectively. Fruits & vegetables have shown a higher growth in production and area in 2000-01 to 2010-11 as compared to 1990-91 to 1999-201. The biggest increase in the growth rates of yields in the two periods, however, is in groundnut and cotton. Cotton has experienced significant changes with the introduction of Bt cotton in 2002 .By 2011-12, almost 90 percent of cotton area is covered Structural change in the composition of agriculture leading to a diversification of Indian agriculture into horticulture, livestock and fisheries since the 1990s is a landmark development with great challenges and unlimited opportunities.

PUBLIC-PRIVATE PARTICIPATION IN INDIAN AGRICULTURE

The private sector involvement in Indian agriculture is a recent development. It is apparent in initiative such as infusion of new technologies like BT cotton, hybrid seed technology in maize; in a mainstreaming of the fragmented small holders by integration of rural business/ service hubs (RBHs) at the back end and agro-processing industry and organized retailing at the front end. Successful

examples like Bt cotton, hybrid maize, pusa basmati rice, etc. suggest beneficial outcomes comes from public sector partnership with the private sector farmer groups and the like. The government has to play a more proactive role as coordinator, facilitator and also as a regulator. Higher investment in basic infrastructure like roads, canal waters, watersheds, check dams, etc. will attract private investment in other areas of the supply chain. Future breakthrough technologies in agriculture will come increasingly from the private sector, and India's private sector has the strength to multiply those technologies and to reach millions of farmers (big and small) in the fastest possible way. There is a need to channelize these sources in an orderly manner, so that in the process, apart from the private sector profitability, the farming community is also benefited. This will assist in pushing Indian agriculture to a higher and more sustainable growth which would be the most powerful engine for poverty reduction. For areas where the private sector has not shown much interest such as rain fed areas, tribal areas, natural resource management, pulses, millets, the role of public research system would continue to be critical.

CONCLUSION

Though with economic liberalization and gradual integration with the world economy, relaxation of export controls on several agricultural products since 1991 have helped agricultural exports, there are still occasional interventions by the government, for example, export bans on wheat and rice, or limits on the stocking of grains by private trade that dissuade the private sector players from investing in the agri-system. However, one of the main government interventions in the agricultural markets currently is its policy of Minimum Support Prices (MSP) for agricultural commodities. For procurement of horticultural commodities which are perishable in nature and not covered under the Price Support Scheme, with a view to protect the growers of these commodities from making distress sale in the event of bumper crop during the peak harvesting periods when the prices tend to fall below the economic cost of production, a Market Intervention Scheme (MIS) is implemented on the request of a State /UT Government which is ready to bear 50 percent loss.

After achieving near self sufficiency in staple food, the Indian government has launched a number of programmemes for increasing production through the Department of Agriculture and Cooperation as also distribution and consumption through the Department of Food and Public Distribution. India has made substantial progress in terms of overcoming national food insecurity by giving priority to self-sufficiency in food grain production through Green Revolution. As a result, the food grain production increased from 82.02 million tonnes in 1960-61 to 250.42 million tonnes in 2011-12.

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