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Regional Dispersal of Green Revolution and Regional Inequalities

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ABSTRACT :

The basic cause of income inequalities in the rural sector of the developing countries in the extreme inequalities in land ownership. Since a majority of the population lives in rural areas, we can regard inequalities in land ownership as the basic cause of income inequalities in the developing countries. Therefore extensive land reforms and redistribution measures can help in reducing income inequalities significantly a study by William dive showed that land redistribution is the policy most likely to achieve both production increases and a narrowing of income inequalities.

KEY WORDS :

National Income, HYVP, Unbalanced Growth, Irrigation, Fertilizers, Pesticides, Inequalities, Potential, productivity, hectare.

INTRODUCTION

Indian agriculture had reached the stage of development and maturity much before the now advanced countries of the world embarked on the path of progress. At that time, there was a proper balance between agriculture and industry and both flourished hand-in-hand. This situation continued till the middle of the eighteenth century. The interference from the alien British government and its deliberate policy of throttling the village handicrafts and cottage industries destroyed the fiber of balance and the economy of the country was badly shattered. Britishers pursued a typical colonial policy in India and did nothing to develop (or restore) agriculture. Instead, they created a class of intermediaries known as seminars who sucked the very Wood out of the rural poor. A substantial part of the produce was taken away by this parasitic class and the actual cultivator was left only with subsistence income. The cultivators had neither the resources nor the incentive to invest in agriculture. Therefore, Indian agriculture in the pre-Independence period can be correctly described as a "subsistence' occupation. It was only after the advent of planning (and more precisely after the advent of green revolution in 1966) that some farmers started adopting agriculture on a commercial basis. Let us now discuss the role of agriculture in Indian economy.

Reginald dispersal

As stated earlier, HYVP was initiated on a small area of 1.89 million hectares in 1966-67 and even in 1998-99 it covered 78.4 million hectares which is only about 40 per cent of the gross cropped area (date for later period are not available). Naturally, the benefits of the new technology remained concentrated in this area only. Moreover, since green revolution remained limited to wheat for a number of years, its benefits mostly accrued to areas growing wheat. Even this in an overstatement because within the ares under wheat in HYVP, only regions having assured water supply and a package of other imports on whens availability the success of HYVP crucially depends) derived benefits from the new agricultural strategy These were the regions of Punjab, Haryana and western Uttar Pradesh. As a result, the benefit of new technology was limited to wheat and the north-west region of the country in the initial period of the green revolution. However, gradually the new technology spread to rice and some other crops and its geographical coverage extended from the north-western region to many other parts of the country. According to GS Bhalla and Gurmail Singh, "By 2003-06, despite considerable inter-State variations, most States in Indis were able to share the gains of the new technology. The deepening and extension of new technology led to significant growth of agricultural output."

Initial Period of Green Revolution (1960-65 to 1980-83)

During 1962-65 to1980-83, all states in thenorth-western region, in particular Punjab and Haryana, registered high growth The rate of growth of agricultural output. The rate of growth of agricultural output in Punjab was as high as 5.58 Per cent per annum while that of Haryana was 3.74 per cent per annum. As a result, the rate of growth of agricultural out in the north-west region was much higher than in other regions.In the eastern region except for Assam, the growth performance of other States was rather modest with Bihar recording a rate of growth of only 0.27 per cent per annum. In the central region, the crop output was hardly influenced by the new technology and agricultural output in that region was characterized by sharp weather-induced year-to-year fluctuations. In the southern region, all States, except Tamil Nadu, were able to register medium growth rates of output.

Maturing of Green Revolution (1980-83 to 1990-93).

As noted by G.S. Bhalla and Gurmat Singh "The period from 1980-83 to 1990-93 marks a turning point in India's agricultural development at the all / India level, the growth rate of crop output accelerated from 2.24 per cent per annum to 3.37 per 1980-83 to 1990-93. During the period of 1980s agricultural growth permeated to all regions in India. An important development was the acceleration of growth in the eastern region. In West Bengal, the growth ass increased to 5.98 per cent per annum during 1980-83 to 1990-93 as compared with a growth rate of 14 cent per annum during 1962-65 to 1980-83. Bihar and Odisha also recorded an acceleration in their outpost growth rates. The central region also recorded an accelerated growth during this period.

The question is: what were the causes of the upturn of growth in the central region and the charge transition in the growth environment in the eastern region? In this context, one may point out many factors associated with the wider adoption of new technology such as expansion in irrigation and extension services, development of infrastructure required for distribution of seeds, fertilisers, credit, etc. A study by S.D. Sawant and C.V. Achutan particularly refers to the role of irrigation. Table 6 of this study reveals that whereas the expansion in net irrigated area in the eastern region was just 3 per cent between 1970-41, was as high as 40 per cent between 1980-91. As a result, the share of the region in all-India increase irrigation jumped from 2 per cent in the 1970s to 24 per cent in the 1980s. This must have contributed significantly in improving growth environment in addition to increased spread of new technology"

The southern region also exhibited a marked acceleration in growth rate. From 1.82 per cent per annum during 1962-65 to 1980-83, the growth rate in this region accelerated to 3.41 per cent per annum during 1980- 83 to 1990-93. According to Sawant and Achutan, the main reason for this was the faster growth of non food grains. The performance of almost all non-foodgrains in all the four States in this region during 1980-83 to 1990-93 was satisfactory and far better than of foodgrains as a whole, as also than their own performance in the earlier period 21

Post-Liberalization Phase.

The study of G.S. Bhalla and Gurmail Singh presents information for the period 1990-93 to 2003-06 while the Twelfth Plan document presented information for the period 2005-06 2011-12. Accordingly, we divide the discussion for the post-liberalisation phase below into these two sub periods.

1. **The period 1990-93 to 2003-06**.

Agricultural growth during 1990-93 to 2003-06 reflects the impact of economic reforms on agricultural performance. This period was marked by sharp deceleration in agricultural growth rate at the all-India level and in all regions. At the all-India level, the output growth decelerated from 3.37 per cent per annum during 1980-81 to 1990-93 to only 1.74 per cent per annum during 1990-93 to 2003 06. At the regional level, during the same period, the growth rate of agricultural output decelerated from 3.55 present per annum to 1.58 per cent per annum in the north-western region, from 3.61 per cent per annum to 1.00 per cent per annum in the eastern region, from 3.27 per cent per annum to 3.15per cent per annum in the central region and from 3.41 per cent per annum to only 0.48 per cent per annum in the southernregion. All States, except Gujarat and the same extent, Maharashtra, Registered a Sharp decline in their output growth rates in this period. Gujarat registered a massive increase in the rate of growth of agriculturist 0.90 per cent per annum

during the period 1980-83 to 1990-93 to 3.33 per cent per am period 1990-93 to 2003-06. According to G.S. Bhalla and Gurmail Singh, this remarkable permanent primarily because of the very rapid spread of Bt cotton in the State during the last triennium."

2. The Period since 2005-06.

The period since 2003-08 (specifically the period of the Eleventh spanning the years 2007-08 to 2011-12) has seen remarkable recovery of agricultural growth Andhra Pradesh, Pad Gujarat, Maharashtra, Arunachal Pradesh, Chhattisgarh, Jharkhand, Karnataka Maniper, Mizoram Rajasthan and Tripura all recorded a 5 per cent plus growth rate in agriculture. In addition, Assam, Haryana, Madhya Pradesh and Tamil Nadu recorded 4 per cent plus growth rate in agriculture. According to Ramesh Chand and ShinoyParappurathu, this recovery could be attributed to a conscious hike in public and private investment and a substantial improvement in terms of trade in favour of the agriculture sector. According to them, "More than a matter of chance or a brief spell of improvement, the recovery can be considered the result of a significant change in strategy. This saw a rapid expansion of agricultural credit reinvigorated growth in the distribution of quality seeds and substantial public and private investment in the agricultural sector. The spurt in farm production was partly driven by the favourable prices of form products Such price-led growth is a morale booster for the farming community and has positive implications for m income and profitability..."

The Twelfth Plan document pointed out that the success achieved on the agricultural growth for during the period of the Eleventh Plan was due to the fact that the strategy in this Plan focused basicity on yield gaps within existing technologies, rather than emphasizing new technologies and supporting these. The growth acceleration since 2005 has therefore been much stronger in States with lower productivity and less imitation (where the yield gaps were high). However, to the extent that available technology potential growth, it will be difficult to maintain high growth rates where productivity has increase close to potential levels. According to the Plan, "clearly, growth is more difficult to accelerate at higher productivity levels without new technology, particularly if past patterns of growth have taken tall resources." Natural Thus, sustaining high growth rates in agriculture will be a challenging task and will require increased focus on new technology and new methods to push up the yield levels.

Interpersonal Inequalities

Whether interpersonal inequalities have increased or not due to the adoption of new agricultural strategies not easy to determine. This is due to the reason that studies conducted by different scholars have yielded different results. Probably this is due to the reason that the studies relate to different regions States, different time-periods and use different sources of data. Moreover, the conclusions are often coloured by the preferences and biases of the researchers. However, there seems to be a general consensus that in the early period of the green revolution, large farmers benefited much more from new technology as compared with the small and marginal farmers. This was not unexpected as the new technology called for substantial investments which were generally beyond the means of a majority of this country's small and marginal farmers. Only relatively rich farmers who were in a position to afford the new strategy which is a package programme involving the use of high-yielding varieties of seeds in combination with other inputs like irrigation, fertilizers, pesticides, etc. adopted it. This shifted the advantage of productivity per acre in favourof big farmers. This got advantage in the farm forwards in This gun, go reflected in the dissolution of bees to new technology in that split Such ends were clearly test in the studies conducted by Francine R.Frankel, G.R. Saini and PranabBardhan covering the early years of the green revolution. There is a difference of opinion as far as the later phase of the green revolution is concerned. According to the economists with the passages of time , the supply of installation credit of small farmers improved (Although a major share continued to be cornered by the large farmers). As a result of this and also because of improved extension servers small farmers started adopting new technology rapidly. Thus, over a period of time, green revolution started benefiting small farmers as well. UshaNagpal, George Blyn, John Richard Westly, G.S. Bhalla and GKChandha subscribe to this view. For instance, in a study on the effect of green revolution on the small and and marginal farmers conducted for Punjab, G.S. Bhalla and G.K. Chandha

concluded that "the advent of the green revolution in Pujab has a brought overall prosperity to its peasantry." However, the same study admitted that about one third of the marginal farmers continue to live below the poverty line. In a study published in 2005, Francine R. Frankel argued that larger farmers continued to make greater absolute gains in income because of lower costs per acre and by reinvesting earnings in non farm and farm assets including purchase of land from the smaller cultivators who could not make the transition to the new technology. As a result of the impact of the new agricultural strategy on rural income disparities among Stares, and the growing differential in compound growth rates between districts, the gap between households operating medium and large holding on the one hand (above 2 hectare) and households cultivating marginal and small holdings on the other hand, widened. As a result, "the size structure of operational holdings at the all-India level became further skewed, as a large majority of operational holdings clustered in the categories of marginal and small farmers For example, the percentage of marginal holdings (less than one hectare) 7 rose from 54.6 per cent in 1976-77 to 57.8 per cent in 1985-86 and 67.0 per cent in 2010-11. The percentage of small and marginal holdings together (ie, less than 2 hectares) rose from 72.7 per cent in 1976-77 to 76.2 per cont in 1985-86 and further to 84.9 per cent in 2010-11.

As far as the fate of agricultural workers is concerned, all observers agree that money wages have increased. However, there is difference of opinion regarding the trends in real wages. In his study Land Labour and Rural Poverty (1984) P.K. Bandhan used data of Rural Labour Enquiries for 1964-65 and 1974-75 and concluded that the average daily earnings in agricultural operations by men belonging to agricultural labour households had declined by 12 per cent in real terms for the whole of rural India. At the State level real wages declined in all the States, except in Punjab, Haryana, Uttar Pradesh, and Jammu & Kashmir (where it rose) and Karnataka (where it stayed the same). However, some economists have argued that inter-State disparities in agricultural wages started declining since the mid-seventies. For instance, A.V. Jose concludes in his study that the disparities in real wages in agriculture between Punjab on the one hand and Bihar on the other, started coming down since the mid-1970s.

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