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Lack of Diversification and Declining Growth Profitability & Surpluses of Punjab Agriculture



* Gurdas Singh

* Research Scholar, Singhanian University (Rajasthan)

The state of Punjab has achieved significant strides in the development of agriculture. The present level of prosperity in the state is one of the highest with highest per capita income and consumption in the country. It is all due to the spectacular progress made in agriculture by the farmers of Punjab. The Punjab with 1.53 per cent of the total geographical area of the country is consistently contributing 60-70 per cent of wheat and about 45-50 per cent rice to the central pool. The production of wheat has increased from 24.51 lac tones in 1966-67 to 144.60 lac tones in 1998-99. In fact if we compare the production of wheat in 2000-01 with the production wheat in 1960-61 than during these forty years it has gone up by more than nine times.

Similarly the production of rice has gone up from 3.38 lac tones in 1966-67 to 79.40 lac tones in 1998-99. The production of Rice which is the major crop of Punjab has gone up more than thirteen times between 1970-71 and 2000-01. Total food grain production in the state has also increased by more than three and half times. The production of wheat and rice during these thirty years has increased more than double. Production of cotton has also increased from 0.67 lac tones in 1966-67 to 3.95 lac tones in 1998-99. The growth in the production of these crops has been achieved by increase in both in area under crops and productivity. The proportion of area irrigated has gone up from 71 percent to 94 per cent of the GCA.

The use of chemical fertilizer per hectare was 38kg/hectare in 1970-71 which has increased to 179 kg/hectare in 2000-01. Intensity of cropping has jumped from 140 in 1970-71 to 186 by 2000-01. Rice productivity was increased from 1000kg/ha to 3465kg/ha in 1997-98 as compared to mid sixties. The productivity of wheat has registered several fold increase from 1200kg/ha in the early sixties to 4333kg/ha in 1998-99. Similarly the productivity in case of sugarcane, cotton and sunflower has shown a consistent and continuous increase over time.

The paper is to provide the explanation that Lack of Diversification of agriculture in Punjab leads to Declining Growth Profitability & Surpluses of Punjab Agriculture which further affected the structure of Punjab's agrarian economy.

Growth Rates of Production and Productivity:

The compound growth rate of production of rice, wheat, and cotton which are the major crops of Punjab are quite impressive during the period 1966-67 to 1993-94. However, the CAGR of these crops for the entire period is also quite spectacular.

The data shows that the CAGR for rice declined from 4.16 per cent in the period 1971-72 to 1980-81 to 0.73 per cent during the period 1981-82 to 1990-91 and to -0.18 per cent during the period 1991-92 to 1996-97. The decline in wheat productivity was from 2.41 per cent in the first period to 1.86 per cent during the third period.

The most worrisome feature of Punjab economy is the drop in its annual growth rate, from 5.3 per cent during 1980-81 to 4.7 per cent during 1991-92 to 1997-98. By comparison, growth rate at the national level moved from 5.6 per cent during the same period.

Lack of Diversification of Agriculture:

It is not only the growth rates of agricultural production and yield have decelerated but also there is hardly any major diversification of Punjab's agricultural cropping pattern since 1981-82. The present cropping pattern in the state is not independent chosen by farming community.

It has been promoted by the Union Government to meet food shortages in the past. The state has become grainary of the country. This cropping pattern has destroyed the ecosystem of the state. The subsoil water level has alarmingly gone down making several shallow tubewells ineffective.

See Table 1

2. Punjab Govt. Online (Punjab agriculture: crop statistics)

However, during the period 1960-61 to 1970-71 that is the period of green revolution brought significant changes in the cropping pattern of Punjab's agriculture. In 1960-61, about 29.6 per cent of the gross cropped area was under wheat, which increased to 43.6 per cent in 1990-91 and remains stable around 43 per cent thereafter. Similarly Paddy, which occupied around 4.8 per cent of the gross cropped area in 1960-61, increased to over 26.9 per cent in 1990-91, and then increased further to near about 31.3 per cent

Table 1 Shift in Cropping Pattern in Punjab 1950-51 to 2001-02 (% Area under Crops)

Crop	1950-51	1960-61	1970-71	1980-81	1990-91	2001-02
Paddy	2.9	4.8	6.9	17.5	26.9	31.30
Maize	6.3	6.9	9.8	5.6	2.5	2.07
Bajra	5.2	2.6	3.7	1.0	0.2	0.09
Wheat	27.3	29.6	40.5	41.6	43.6	43.09
Barley	2.4	1.4	1.0	0.9	0.5	0.29
Total Pulses	23.8	19.1	7.3	5.0	1.9	0.61
Total Oil seeds	3.3	3.9	5.2	3.7	1.3	1.05
Sugarcane	2.2	2.8	2.3	1.0	1.3	1.79
Cotton	5.4	9.4	7.0	9.6	9.3	7.64
Total Vegetables	1.2	1.2	0.9	1.1	0.7	1.28
Total Fruits	0.8	0.6	0.6	0.4	0.8	0.46
Other Crops	19.2	17.7	14.8	12.6	11.0	10.26
Total Cropped Area	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1. Statistical Abstract of Punjab, 1971, 1981, 1991 and 2001

Table 2-Distribution Holdings among Different Categories of Farmers in Punjab

Category	Farm Size	No. of Holdings(000) & % of farm holding	1980-81	1990-91	1995-96	2000-01
Small	Less than 2 hectare		396 (38.6)	500(44.7)	387(35.4)	296 (29.69)
Medium	2-4 hectare		287(28.0)	289 (25.8)	320 (29.28)	328 (32.9)
Large	More than 4 hectare		342 (33.4)	328 (29.5)	386 (35.32)	373 (37.41)
Total			1025(100.00)	1117 (100.00)	1093(100.00)	997 (100.00)

Source: 1. Statistical Abstract of Punjab, 1981 and 1991
2. Department of Agriculture, Government of Punjab, 2005.

in 2001-02. But during the period 1980-81 to 2001-02, almost all the crops, on an average, occupy the same percentage of area. This shows that Punjab has failed to achieve any degree of crop diversion during the said period. Diversification has become a slogan, which is chanted by everyone. Some times, the farmers of Punjab are blamed for their lack of interest in shifting to more value added crops.

This is an insult to the intellect and entrepreneurial ability of Punjab farmers. Lack of diversification shows that Punjab has failed to develop crops, which are more remunerative and beneficial for the farmers of the state.

Declining Growth Profitability and Surpluses of Punjab Farmers:

Since the introduction of the green revolution technology, the agrarian structure of Punjab has witnessed interesting changes.

2. Department of Agriculture, Government of Punjab, 2005.

The table No. 2 shows that the per cent of small and marginal farmers in Punjab is increasing over time during 1980-81 to 1990-91 from 38.65 per cent to 44.7 per cent. However, the share of same category

recorded a decline in 1995-96 to the figure 35.4 per cent and further to 29.69 per cent in 2000-01. The number of medium and large farmers has increased over the said period of time. The data shows that the share of medium and large farmers has increased to 32.9 per cent and 37.41 per cent in 2000-01 respectively. This is because of active land marketing for leasing and selling of land to big farmers.

Further, the non-farming activities encouraged the small and marginal farmers to sell their land and finally, the new technology was not suitable to the small and marginal farmers.

Wheat-Rice Rotation:

The peculiar cropping pattern of wheat-rice rotation covers 70 per cent of net sown area in Punjab. So the high yield of wheat and rice compared to the other crops and along with that the input/output price structure, wheat and rice started replacing other crops in a massive way and at present wheat and rice account for nearly three fourth (43+31.3 per cent) of the total cropped area of the state as shown in the table No.3 .

See Table 3

The typical wheat-rice rotation in Punjab has

Table 3: Area and Production of Wheat and Rice in Punjab

Year	Wheat		Rice		Total Cropped Area
	Area (000)hec.	Production (000) tons	Area (000)hec	Production (000)tons	
1960-61	1400	1742		227	229
1970-71	2299 (40.5)	5145		390 (6.9)	688
1980-81	2812 (41.6)	7677		1183 (17.5)	3233
1990-91	3273 (43.6)	12159		2015 (26.9)	6506
2001-02	3420 (43.0)	15499		2487 (31.3)	8816

Source: Statistical Abstract of Punjab of various years.

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created many problems. Both wheat and paddy are water intensive crops as a result of this rotation, there is large scale depletion of ground water in Punjab. Since wheat and paddy are heavy guzzlers of micro-nutrients, with the result soil starts degrading gradually. Further this rotation has adversely affected soil's physical characteristics.

Heavy doses of fertilizer and pesticides are also creating ecological problems in terms of environmental pollution.

Conclusion:

So in the light of above discussed issues like deceleration in growth rates of production and pro-

ductivity, lack of proper diversification of agriculture, declining growth of profitability, emergence of new agrarian structure and wheat-paddy rotation, serious doubts have been raised whether even the present low growth rates in production and productivity can be maintained in Punjab.

Thus the agricultural development in Punjab which is facing serious challenges, the planners and the policy makers need to think over the above discussed issues in order to make agriculture more profitable for the farmers as well as it can contribute for the development of the nation as a whole.

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