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Crises of Agriculture in Punjab: Setbacks to Diversification and Role of State

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Abstract

Agriculture sector in India especially in Punjab (one of the most developed agricultural state) is passing through crises of deepening of water resources, polluted air and water, declining farm incomes, farmers indebtness leading to number of farmers committing suicides every day. This paper aims to identify the extent and magnitude of crises of Punjab agriculture with the help of secondary data. This paper worked out the economics of Basmati rice for three years i.e. 2013-14, 2014-15, 2015-16 on the basis of primary data and showed that once profitable crop became a source of huge losses for farmers. Study worked out the economics of peas and potatoes cultivation on the basis of primary data. This paper with the help of various case studies tries to bring out the fact that in the absence of minimum support prices for crops other than wheat and rice along with non intervention of the government in the market, leads to setbacks for the diversification. The effort of crop diversification to cure the crises needs active support and planning from the government

Key Words:- *crises, diversification, Punjab, government*

1. Introduction

The State of Punjab Commonly known as food basket of the country is the major surplus state in food grains production. It accounted for 1.5 percent of total area of the county with 5.03 million hectares of land. Of the total land, almost 83 percent of area is net cultivated area. It had cropping intensity of 190 percent, with the cropped area of around 8 million hectare (4.5 percent of the total cropped area) in the country (Johl *et al*., 2012)

After the green revolution, agriculture sector (including live stock) had highest growth rates in sixties (5.5 percent). It shrunk to 3.7 percent in seventies, recovered in eighties with 4.6 percent but declined to almost half to 2.4 percent in nineties and 2.3 percent in 2000's. Population dependent upon agriculture remained almost same to approximately 40 percent in 2001 whereas their aggregate income assessed in the form of net state domestic product (NSDP) from agriculture and livestock continued to decline from 58 percent in 1970-71 to 44 percent in 1980-81, 42 percent in 1990-91 and 2000-01 and as low as 22.9 percent in 2010-2011. Above scenario justify the dictum of 'Punjab farming progressed but not its farmers or rather the farmers remained or even become poorer' (Singh Karam 2002)

2. Dimension and Magnitude of Crises

Before the green revolution the cropping pattern of Punjab was fairly diversified. The cereals and pulses accounted for 45.95 percent and 19.08 percent respectively in the total cropped area during the sixties. But in 2010-11 wheat and paddy both contributed as high as 82 percent of the total cropped area. Over the years, Punjab agriculture has attained the characteristics of monocropping.

The state had 13 lakh 81 thousand tube well and 4 lakh 34 thousand tractors in the year 2010-11. As per the estimates of Punjab State Farmers Commission, number of tractors in the state is double than required. A tractor in the state is used on an average for 450 hours per annum, which is quite low than the minimum 1000 hours of use in agriculture. (Punjab Profile, 2014).

Further 87 Percent of paddy and 52 percent of wheat area in the state is being harvested by combine harvestors. " More than 80 percent of paddy straw and about 50 percent of wheat straw was being burnt by the farmers" (Sidhu *et al*., 1998).Water intensive crop Paddy uses 1800 mm water whereas the total water requirement of wheat is about 500mm. In Punjab, water level is falling by up to one meter per year (www.earth-policy.org) Already 90% of the 138 block of the state have been declared black as the water table is falling at an alarming rate in these areas (Sidhu, 2002). " If paddy wheat cycle goes on then by 2023 the water table depth in centered Punjab is projected to fall below 70 feet in 66 percent area, below 100 feet in

34 percent area and below 130 feet in 7 percent area" (Sidhu *et al*., 2010)

In the starting years of green revolution, productivity of major crops increased at faster rates causing decline in the cost of production of output. "During the period of 1971-74 to 1985-88, the increase in total cost of production of wheat, rice and cotton was slower than the rise in the use of inputs like fertilizer, machinery and fuel etc. This resulted in decline in total cost of production at constant prices of 1971-72. But during the period 1985-88 to 1993-96, total cost showed a marginal increase. The reason for this increase was the sharp rise in fixed cost (due to over capitalization) of wheat and rice, But in case of cotton both fixed and variable cost have increased during this period." (Sidhu and Johl 2002). And as no breakthrough in yield were taking place but cost of inputs was increasing even in the decade of nineties and 2000. MSP for these crops have compensated the farmers for rise in cost of production.

There is a major threat to the minimum support price (MSP) for paddy and wheat crops in Punjab and Haryana including their procurement by Government agencies. It was only due to sustained effort and mobilization of the farmers' organizations in Punjab in particular and in Haryana as well that forced the central, state government and procurements agencies to restore to MSP. There is every fear that having a state government in Punjab of different Political ideology may further worsen the problem.

Over capitalization in Punjab Agriculture coupled with stagnated yield rate, crop failures due to weather wiggeries', price instability in case of glut production have led to low level of income of farmer leading to indebtness, Punjab agriculture has become highly resource centric. Fertilizer consumption in the state is second highest in India at 216 kgs. Per hectare.

The rate of increase in cultivation cost has been much faster than that of produce prices. Therefore the increase in income from farming has not been sufficient to meet the domestic and farm expenditure which led a large number of farmers in a debt trap and forcing many to commit suicide. In a study by PAU, of the sampled farmers, "88 percent had an average debt of Rs. 2,18,092 per household. The amount of debt per hectare was inversely related to farm size". (Singh, 2012).

In a census based study of farmer suicides in six districts of Punjab during 2011, It was found that the largest number who took their own lives, belonged to the category of small farmers.

3. Diversification; Case Studies

The agrarian crises in the state is well recognized at the state level as well as at the national level, Punjab State farmers commission prepared a draft agricultural policy. It recognized that any strategy for further agricultural development need to tackle sustainability issue along with overall growth objectives. The draft policy envisages substantial crop diversification (from paddy and wheat) as a solution for Punjab's agrarian crises. But these announcements of diversification of cropping patterns will not be able to solve the problem. In the absence of MSP for crops other than wheat and paddy, it is quite risky for the farmers to switch to other crops.

3.1 Crop Diversification: Losses of Basmati Growers In 2013 season, farmers who had grown Basmati and 1121 variety of rice had earned good profits as both these varieties were sold at remunerative prices in market. Further the export of these varieties to Arabian countries gave good returns. But in the subsequent season of 2015-16, these two varieties were sold at lower prices which not even covered the cost of production leading huge losses to the farmers. A field survey by the author regarding the Economics of Basmati rice depicted that year 2013 gave profit of Rs. 28,280 Rs. per acre whereas 2014 yielded profit of 10,000 per acre and year 2015 yielded loss of about 12,500 per acre (considering that the farmer had paid the very high rent of (35,000 to 40,000) per year per acre.

3.2 Economics of potatoes and Peas

The recent season of 2016-17, 2017-18 clearly indicated the bad plight of peas and potato growers who had to bear huge losses. A field survey by author regarding the economics of Peas and Potatoes is given below.

Table 1

Economics of Potatoes (per Acre in Rs.)

Seed Cost	8000/-
Fertilizer	8000/-
Insecticides and Pesticides	4000/-
(Labour charges including sowing, uprooting, hoeing and loading)	120 00/-
Tractor expenses including diesel	3000/-
Irrigation charges	1000/-
Transportation Charges	Rs. 10 per bag (2000/-)
Cost of Bag unloading	20 Rs. per quintal (2000/-)
Charges in Market	Rs. 6 per quintal (600/-)
Yield	100 quintals
Price	240/- per quintals
Gross returns	24000/-
Total Cost	40,600/-
Loss	16,600
Loss %	40.89%

Table 2

Economics of Peas (per Acre in Rs.)

Seed Cost	6000/-
Fertilizer	3500/-
Insecticides and Pesticides	5000/-
(Labour charges including sowing, uprooting, hoeing and loading)	13500/-
Tractor expenses including diesel	2000/-
Irrigation charges	500/-
Transportation Charges	Rs. 10 per bag (600/-)
Cost of Bag	12 Rs. per quintal (360/-)
Charges in Market (unloading)	Rs. 6 per quintal (180/- quintal)
Yield	30 quintals
Price	600/- per quintals
Gross returns	18000/-
Total Cost	31640/-
Loss	13640/
Loss %	43.1%

Above examples of Economics of Peas, Potatoes and Basmati Rice gave clear indication that diversifications of agriculture without the fixation of minimum prices of these crops can further deepen the crises of agriculture sector, leading to huge losses to the farmer driven to the only solution of suicides.

4. Demonetization and other factors

It is important to mention here that the demonetization further added to the crises of the farmers as the traders who earlier use to purchase these crops in order to earn profit from them in past, were not able to do so due to cash crunch in 2016..

In case of potatoes, due to glut in the market, various contract farming firms like Pepsi Cola etc. who sold their seeds at high rates to the farmer for a special variety of potatoes, solely meant for chips, also broke their contracts on the ground of high quality standards which cannot be met even by the experts, what to talk about the ordinary farmers.

In such a situation fanner stands nowhere as this variety is not much suitable for general consumption. Big farmers may be able to bear such loses but small farmers economics may collapse due to such unprecedented fall in the prices

5. Conclusions and Policy implication: Role of State

On the basis of cost of Production of such crops, MSP may be fixed by the government with the effort to export such production by government, itself so as to ensure a minimum income for the farmers (Satish, 2006). Government's decision to export 500 tones of potato to Russia may save the farmers from the losses to some extent.

More cold storage capacity needs to be established by the people's co-operation with the financial help from the government. Use of solar energy for cold storage may reduce the cost of such ventures.

State agriculture department and agriculture development offices should play a more important and active role in imparting technical educations to the farmers regarding crop growing techniques. They can guide the farmers regarding the proper usage and timing of chemical fertilizer, insecticides and pesticides so as to reduce cost of production and hence enlarging the profits.

Another possible solution to reduce the glut of production in the market is to allocate the specific area to the production of particular crop in strict sense by the agriculture department.

Diversification of agriculture as suggested by the Johl committee (Govt, of Punjab 1986) is desirable and will be highly beneficial but only if Taiwan model is strictly followed. Process agriculture produce at farm gate and plow back surpluses to expand rural industrial activities and private firms as middle man in the process are discouraged (Gill Anita, 2009)

Equally necessary is the quality control on inputs, seeds, fertilizer and Pesticides so that farmers do not waste their resources in purchasing substandard or fake inputs and suffer losses in productivity too.

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