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Need of the Hour / Diversification in Punjab

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Abstract: ***Punjab state has become prosperous only due to its agriculture sector especially after the adoption of first green revolution in mid sixties'. It has done remarkably well in terms of output growth, despite weather and price shocks in the past few years. Its main crops are wheat, rice, sugarcane, vegetables, fruits and cotton.. The better agricultural performance of the state is a result of: farmers' response to better prices, continued technology gains, appropriate and timely policies coming together. In the second green revolution Punjab has given much importance to Horticulture. The state is also making significant progress in the production of fruits, vegetables and flowers. Animal Husbandry, Milk production, Goat Rearing, Pig Farming, Bee Keeping, Fisheries and Poultry are allied sector of agriculture which can promote income of the farmers. There is need to have stable and consistent policies for better results. There is need to have stable and consistent policies where markets play a deserving role and private investment in infrastructure is stepped up.***

Keywords: Punjab, Agribusiness

1. Introduction

Punjab is the state which brought first green revolution by making tremendous progress in food grain output. Now Punjab is the main producer of wheat, paddy, cotton & sugarcane. It contributes great to central pool as far as the procurement of wheat & rice is concerned. The need of the hour is to diversity agriculture to bring second green revolution .The great potentiality and possibility is yet to be realized which will raise the level of the income of the farmers by raising farm productivity in non food crops .The enhanced consumption of high value crops like fruits, vegetables, milk production, pulses and processed food grain products will raise the efficiency and standard of living of the people. Changes in crop pattern, production of different crops or varieties of crops keeping in mind the needs, resources endowment and imperatives of growth may be referred to as diversification of agriculture. Area wise diversification is also a part of it. Diversification of agriculture is an integral part of the process of structural transformation of a country experiencing the process of economic growth. In Punjab, however, it has some different connotations as well realizing that to continue with the wheat-paddy cycle was neither remunerative nor sustainable in the long period. First Johl Committee organized in November 8, 1985 submitted its report in May 1986 and recommend that at least 20 percent area under wheat and paddy should be shifted to other crops especially fruits and vegetables. This change in cropping pattern was considered a pre-condition to improve the economic well being of a vast majority of farmers. Another objective of the adoption of diversification programme was to initiate the ecological sustainability of agriculture. Again in 2002, the report of second Johl Committee made 95 recommendations and warned that if these recommendations were not implemented, the Punjab agriculture will be in severe crisis. The feasibility aspect of the recommendations was also taken care of. The committee had suggested that these recommendations should be immediately and easily implemented without no foreseen adverse consequences. However, some economists like H.S. Shergil of Panjab University are highly doubtful of the success of diversification programme which has wide ranging implications for the economy. But besides the controversy the need of diversification has been realized by agricultural experts.

2. About Diversification: Indian Scenario

Over the last decade Indian agriculture has become more robust with record production of food grains and oilseeds. Increased procurement of wheat and rice, consequently, has added huge stocks of food grains in the ware houses and granaries. India is one of the world's top producers of rice, wheat, milk, fruits, and vegetables. But in India twenty five percent undernourished people of the world are still living here.

As a concomitant of growth, the share of agriculture and allied sector in gross domestic product (GDP) declined to 15.2 per cent during the Eleventh Plan and further to 13.9 per cent in 2013-14 .While it still accounts for about 54.6 per cent of total employment there has been a decline in the absolute number of cultivators, which is unprecedented, from 127.3 million as per Census 2001 to 118.7 million according to Census 2011. This is indicative of a shift from farm to non-farm employment, causing real farm wages to rise by over 7 per cent annually in recent years. The growth of Indian agriculture is evident in as in this sector there was negative growth in 2002-03 and has registered a remarkable average growth rate of 4.1 per cent during the Eleventh Five Year Plan .As per the provisional estimates for 2013-14, growth rate of agricultural sector GDP was 1.4 per cent and 4.7 per cent respectively during 2012 and 2013.In addition to sit there is a structural change in the composition of agriculture which has shown diversification in this sector into horticulture, livestock, and fisheries, which has been noticed by agricultural experts. The horticulture sector contributed 30.4 per cent to agricultural sector towards GDP, while the livestock sector contributed over 4.1 per cent of the total GDP in 2012-13. This improvement is due to the significant contribution of horticulture and livestock.The joint efforts of Centre and state governments have enhanced gross capital formation in agriculture and allied sectors.

3. Production of Diversified Crops in India

India is the second largest producer of fruits in the world and holds first position in production of fruits like mango, banana, sapota, pomegranate and aonla .The area under fruits crops during 2011-12 was 6.7 million hectare with a total production of 76.4 million Metric Tonne. Vegetables are an important segment in horticulture sector, occupying an area of 9.0 million hectare during 2011-12 with a total production of 156.3 million tones and having average productivity of 17.4 tones /hectare. In fact vegetables constitute about 60 percent of horticulture production. India is the second largest producer of vegetables after China and is a leader in production of vegetables like peas and okra. India occupies the second position in production of brinjal, cabbage, cauliflower and onion and third in potato and tomato in the world. Vegetables such as potato, tomato, okra and cucurbits are produced abundantly in the country.

India has also made great advancements in production of flowers, particularly cut flowers which have a high potential for exports. Floriculture during 2011-12 covered an area of 0.25 million hactare with a production of 1.74 m.MT of loose flowers and 7507 million number of cut flowers. India is the largest producer, consumer and exporter of spices and spice products, the total production of spices during 2011-12 was 5.92 m. MT from an area of 3.21 million hectare. Horticulture crops covered an area of 23.2 million hectare in 2011-12 as compared to 20.2 million hectare in 2007-08 there by registering an increase of about 15 percent however ,the production which is 257.2 million MT in 2011-12 ,increased by about 22 percent during the period 2007-2008 to 2011-12.

The significant feature is that there has been improvement of productivity of horticulture crops, which increased by about 6.0 percent between 2007-08 and 2011-12 shown in table 1.

Table 1: Area, production and productivity of horticulture crops

Year	*Area(m.ha)*	*Production(m.MT)*	*Productivity(MT/ha)*
2007-08	20.2	211.2	10.46
2008-09	20.6	214.7	10.42
2009-10	20.8	223.0	10.72
2010-11	21.8	240.5	11.00
2011-12	23.2	257.2	11.08

Schemes Launched for the Development of Horticulture

For the development of horticulture number of schemes have been launched in various states like;

- National Horticulture Mission
- Horticulture Mission for Eastern and Himalayan States
- National Mission on Micro Irrigation
- National Bamboo Mission
- Schemes of The National Horticulture Board
- Integrated Development of Coconut including the Technology Mission on Coconut Development Board
- Central Institute of Horticulture

4. Cropping Pattern in Punjab

In the second green revolution Punjab has given much importance to Horticulture, Animal Husbandry, and Milk production, Goat Rearing, Pig Farming, Loose and Cut Flowers, Bee Keeping Aquaculture. On the one hand diversification is adopted within the crop system and on the other hand non- farm activities also help in diversification in agriculture allied sector. The state is also making significant progress in the production of fruits, vegetables and flowers. In Punjab now the people give more preference to nutrition food grain .The land of the Punjab is very fertile and its cropping intensity is 204 in 2010-11.In 2011-12 the production of food grain in Punjab was 29.22 million metric tons. The food grain production in Punjab is 11 percent of the production of India while the area of Punjab is only 1.5 percent of the India. Its share in country's production of crops are 18 percent of wheat (16 million tone), 11 percent of rice(10.8 million tone),7.5 percent of milk (9.5 million tone),10 percent of cotton(1.7 million bales), 75 percent of kinnow and oranges(0.95 million tone), 45 percent of mushroom(70,000 tone) and 26 percent in case of honey (14,000 tone).The state also helped a lot towards the policy of export promotion and import substitution. It has exporting products of more than Rs 2000 crore in 2011-12 .It is exporting 50 percent superior basmati rice to middle east, European Union and Asian markets .Many multinational companies like DCM , Mohindra and HUL with farmer partnership have created the high investment capacity environment by giving assurance to farmer of guaranteed purchase of their products at reasonable prices.

5. Punjab and Horticulture

The growth and diversification of agriculture is the vital problem. The agriculture sector is facing many problems such as low productivity, low production, and poor quality of products, poor marketing facilities etc. G S Kalkat chairman Punjab state farmer commission has analyzed the problem of farmers of Punjab and he stated that it is time to think beyond crop diversification as small and migrant farmer will not adopt new crops for the replacement of wheat and paddy unless they are assured of marketing of their produce. The bountiful production of Wheat and Paddy led to glut in the market which due to limited storage capacity has spoiled the millions of tons of food grain and even the Supreme Court had to intervene into the matter.. In Punjab the diversification of the cropping pattern has been started at slow pace. Sun flower, mushrooms, baby corn cultivation had been adopted by some of the rich farmers. Papaya and Banana farming has been started in 2006 which gives a flip to the socio-economic status of the farmer as the income generated from these fruit crops is more than the double of the income from wheat and paddy. Similarly with the better technology, training and credit and marketing facilities the farmers can earn rupees 1 lakh to 3 lakh per acre from

single vegetable crop and the cultivation of fruit and vegetable will also benefit the small and marginal farmers. It will reduce the cost of cultivation by using less water and cutting the powers bill of the farmers. It will maintain the ground water balance in the state. Soya cultivation will also be helpful for the farmers. In Punjab the horticulture basket mainly comprises of fruits ,vegetables ,root and tuber crops ,flowers ,aromatic and medicinal crops ,spices and plantation crops .Due to its vast diversity ,horticulture facilities diversification in agriculture The state cultivates different varieties of fruits and vegetables for domestic and foreign markets .In 2012-13 the area under vegetables and fruits in the state were respectively 2,00,00 hectare and 75000 hectare. The main vegetables sown in Punjab are potatoes which cover 43 percent area of total vegetables.

Table 2: The Area Under Vegetables

Vegetables	*Area in %age*
Potatoes	43
Peas	10
Roots	10
Cauliflower	5
Onion	4
Chilies	4
Tomatoes	4
Other	20

Table 3: The Area under Fruits (2012-13)

Fruits	*Area in % age*
Kinnow	61
Guava	13
Mangoes	9
Pears	4
Oranges	3
Grapes	7
Others	5

The production of fruits in the state was about 118 MT in 2008-09 of vegetables 341 MT, of spices 24000 MT and of loose flowers was 82 lakh.

The Allied Sectors of Agriculture in Punjab

Animal Husbandry: In the allied sector of agriculture animal husbandry is the main source which generates revenue to the farmers. It has contributed 7.25 percent in the total production of the country in 2011-12.

White Revolution: The milk production in Punjab is 262 lakh kilograms daily and the state is one of the top five producer's states of the country contributing much in white revolution.

Goat Rearing: The increased demand of goat milk and meat goat rearing is becoming very popular in Punjab. But unfortunately due to shortage of green pasture the number of these animals had decreased from 4.5 lakh in1999 to 1.5 lakh during 2008.Timely steps should be taken in this field.

Pig Farming: Nowadays pig farming is also considered as a profitable business due to its increased demand as the food habits of the people have changed. The demand of these animals is 70000 per annum while the supply is only 8000.

Bee Keeping: Due to earnest efforts of Government Punjab Agriculture University and Punjab technical University are providing subsidies, training and guidance to farmers to promote this occupation. This profession is flourishing in Punjab with low investment and more income and more profit. It is very beneficial for small and marginal farmers.

Floriculture: Like Himachal Pradesh, Punjab is also promoting floriculture especially with NABARD sponsored schemes. Cultivation of loose and cut flowers has created more avenues of exports in Punjab.

Natural Essence, Nutraceuticals and Organic Farming: Organic farming is also becoming popular to avoid the side effects of pesticides and insecticides. Natural essences is being prepared from flowers which is useful in medicines and cosmetics.

The progress in second green revolution can give good results if like wheat and paddy assured and guaranteed market facilities are provided by the government to horticulture and substitute crops which bring crop diversification.

6. Conclusion

Punjab agriculture is broadly a story of success. It has done remarkably well in terms of output growth, despite weather and price shocks in the past few years. It is producing wheat, rice, sugarcane, vegetables, fruits and cotton and is making progress in livestock, fisheries and poultry. The better agricultural performance is a result of: farmers' response to better prices, continued technology gains, appropriate and timely policies coming together. Yet Punjab is at a juncture where further reforms are urgently required to achieve greater efficiency and productivity in agriculture for sustaining growth. There is need to have stable and consistent policies for crops other then wheat and rice where markets play a deserving role and private investment in infrastructure is stepped up.

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