Agricultural Diversification Can Play a Vital Role in the Development of Himachal Pradesh: An Empirical Evidence

Shiv Dayal Sharma

ABSTRACT

The concept of diversification conveys different meaning to different people at different levels. For example, with respect to the national economy, it generally conveys a movement of resources, especially labor, usually out of agriculture to industry and services, a sort of structural transformation. Many economists advocate diversification as a tool of risk management. It is a strategy that involves doing more than one activity at any given time. It involves in mitigating price risks and production risks of falling output. Within agriculture, however, diversification is considered a shift of resources from one crop (or livestock) to a larger mix of crops and livestock, keeping in view the varying nature of risks and expected returns from each crop/livestock activity, and adjusting it in such a way that it leads to optimum portfolio of income. This definition of diversification needs to be distinguished from movement of resources from low value commodity mix (crops and/or livestock) to a high value commodity mix (crops and/or livestock), as it may often be reflected in an increasing degree of specialization (reducing diversity) to high value activities, especially at the farm level. And it is precisely the movement to high value agriculture that indicates yet another way to augment income, besides the traditional ways of increasing yield, area or cropping intensity. Crop diversification is a strategy for ensuring food and nutritional security, alleviation of poverty, natural resource management for sustainable agricultural development and proper agricultural planning for different regions with varied resource bases. In this study agricultural diversification means diverting from traditional crops to cash crops such as vegetables and floriculture.

Himachal Pradesh has emerged as a leading economy in the country and is also a leader in Hill Area Development , Agriculture and Horticulture revolution. Himachal is an ideal destination for investment in Power and Tourism sector. Responsive administration and conducive macro economic conditions have induced a competitive environment in the economic performance in the state of Himachal Pradesh. The economy of the state has been progressing at a uniform pace and it is expected to achieve a high growth rate of 7.6 percent in the

current financial year which is comparatively better than the national growth of 6.9 percent. Seventy five awards bagged by the state is the result of this extraordinary performance of the economy. Our expenditure is still higher than income as a result Himachal economy is facing deficit problem. Of course Power and Tourism sector are doing well to overcome the deficit problem of this state economy. Agricultural diversification such as growing cash crops in stead of traditional crops can play a vital role in the state of Himachal Pradesh. This paper is based on the empirical investigations carried out in two blocks namely Tissa and Salooni in Chamba district of Himachal Pradesh.

OBJECTIVES OF THE STUDY

The main objective of the study was to examine the impact of agricultural diversification i.e. impact of growing floriculture and vegetables in stead of traditional crops on the levels of living of households in Chamba district of Himachal Pradesh.

METHODOLOGY AND SAMPLING PROCEDURE

The empirical investigation about the impact of floriculture and vegetables growing on the levels of living of households in Chamba district of Himachal Pradesh was done by collecting primary information from the selected households in two blocks of Chamba district. There are seven development blocks in Chamba district namely Chamba, Mehla, Tissa, Salooni, Bhatiyat, Bharmour and Pangi. For the study of floriculture Tissa block was selected mainly due to the reason that only in this block floriculture has been adopted by the households for their livelihood. For further empirical evidence Salooni was selected to examine the impact of vegetables growing on the levels of living of the households mainly due to the reason that only this block has adopted vegetables growing for their livilihood. With the help of multi-stage random sampling a total sample of 90-90 households from Tissa and Salooni blocks were selected. The required information from these two blocks had been collected with the help of pre tested schedule by conducting personal interviews of the informants during the year 2009-10.

LITERATURE REVIEW

Economists, agronomists and other scholars have properly highlighted various issues and factors related to diversification of agriculture in general, and crop sector in particular. South Asian countries are gradually diversifying with some inter-country variations in favor of high value commodities, namely fruits, vegetables, livestock and fisheries. While in eastern and north-eastern regions of India are experiencing increasing share of crops and livestock products sub-

sector at the cost of fisheries and forestry, by and large, Indian scenario reveals shifts from crop to livestock products during eighties and nineties.

Some scholars have identified the pattern of the diversification in different regions. The cultivation of superior cereals is spreading across different agro-climatic regions while the crops requiring very less water tend to concentrate in even narrowing pockets in India (Ghosh 2005). Oilseeds are more diversified with an enhanced balance in their area composition during the post-Green Revolution period. Cereals tend towards specialization with an increasing imbalance in their area composition while pulses tend to diversify with a decreasing one (Hazra 2001).Regional variation in the pattern of agricultural diversification is an important issue discussed in literature. Due to both improved yields and increases in area, wheat and rice experienced the highest growth in output. Their production is spread over all regions of Punjab with 80% of aggregate output. Undulating land, deep water table of some districts made the crop system relatively less diverse (Singh & Sidhu 2004).Agricultural diversification towards fruit and vegetable crops started flourishing in Himachal Pradesh, especially in the districts of Shimla, Kullu, Solan and Lahaul &Spiti (Sharma 2005). This started in late sixties, gathered pace in seventies and eighties, has gained further momentum in the late nineties and is spreading to many new areas in the low and mid-hill districts.

IMPACT OF FLORICULTURE ON THE LEVELS OF LIVING OF HOUSEHOLDS:

This study is based on an empirical investigation carried over in Tissa Block of Chamba District in Himachal Pradesh. It has been selected purposely mainly due to the fact that this is one the most backward block in the district. With the help of multi-stage random sampling a total sample of 90 households have been selected. The required information on the impact of floriculture on the levels of living among the selected households have been collected with the help of pre tested schedule by conducting personal interviews of the informants during the year 2009-10.

The per household net change in the value of household assets, income and employment due to adoption of floriculture is presented in **Table-1**. This table shows that the percentage value of household's productive assets, percentage increase in household income as well as the percentage increase in the employment opportunities indicate an increasing tendency with an increase in the size of holdings. The percentage increase in the value of households assets

has been worked out7.51, 9.47 and 13.04 on the marginal, small and medium size of holdings, respectively, whereas the percentage increase in household

Table-1

Sr. No.	Items	Marginal Farmers	Small Farmers	Medium Farmers
1.	**Household Assets (Rs.)**			
(a)	Value of assets before the adoption of floriculture	573957.50	742261.60	1021558.85
(b)	Value of assets after the adoption of floricultute	617087.60	812588.55	1154723.25
(c)	Net Change in the value of household assets(b-a)	43130.10 (7.51)	70326.95 (9.47)	133164.40 (13.04)
2.	**Household Income (Rs.)**			
(a)	Household income before the adoption of floriculture	3790.10	4593.06	6878.90
(b)	Household income after the adoption of floriculture	4290.92	5387.13	8807.17
(c)	Net Change in household income (b-a)	500.82 (13.21)	794.07 (17.28)	1928.27 (28.03)
3.	**Household Employment (Standard Mandays**			
(a)	Number of mandays employed before the adoption of floriculture	139.32	146.18	163.15
(b)	Number of mandays employed after the adoption of floriculture	169.58	186.99	218.48
(c)	Net Change in household employment (b-a)	30.26 (21.72)	40.81 (27.92)	55.33 (33.91)

Note:- Figures in parentheses denote percentage increase.

income accounts for13.21, 17.28 and 28.03 percent on these holding groups respectively. The percentage increase in employment, in terms of standard mandays, has been worked out 21.72, 27.92 and 33.91 percent on the marginal, small and medium size of holdings, respectively. It is evident from Table-1 that the better-off households falling under the larger size of holding group, income have been benefited the most on account of high literacy percentage, regular and sound sources of household income and the least better-off households falling on the uneconomic size of holdings benefited the least from the adoption of floriculture in the backward area of district Chamba in Himachal Pradesh.

IMPACT OF VEGETABLES GROWING ON THE LEVELS OF LIVING OF HOUSEHOLDS:

This study is based on an empirical investigation carried over in Salooni block of Chamba District in Himachal Pradesh. It has been selected purposely mainly due to the fact that only in this block vegetables growing was adopted by the households for their livilihood. With the help of multi-stage random sampling a total sample of 90 households have been selected. The required information

on the impact of vegetable growing on the levels of living among the selected households have been collected with the help of pre tested schedule by conducting personal interviews of the informants during the year 2009-10.

Table-2

Sr. No.	Items	Marginal Farmers	Small Farmers	Medium Farmers
1.	**Household Assets (Rs.)**			
(a)	Value of assets before the adoption of vegetable growing	842484.25	1019737.41	1565965.40
(b)	Value of assets after the adoption of vegetable growing	959812.00	1164997.00	1919711.00
(c)	Net Change in the value of household assets(b-a)	117327.75 (13.93)	145259.59 (14.24)	353745.60 (22.59)
2.	**Household Income (Rs.)**			
(a)	Household income before the adoption of vegetable growing	10500.42	13627.91	17515.80
(b)	Household income after the adoption of vegetable growing	15458.75	21064.18	28624.38
(c)	Net Change in household income (b-a)	4958.33 (47.22)	7436.27 (54.76)	11108.58 (63.42)
3.	**Household Employment (Standard Mandays**			
(a)	Number of mandays employed before the adoption of vegetable growing	146.45	158.26	176.46
(b)	Number of mandays employed after the adoption of vegetable growimg	186.32	212.54	243.15
(c)	Net Change in household employment (b-a)	39.87 (27.22)	54.28 (34.30)	66.69 (37.79)

Note:- Figures in parentheses denote percentage increase.

The per household net change in the value of household assets, income and employment due to adoption of floriculture is presented in **Table-2**. This table shows that the percentage value of household's productive assets, percentage increase in household income as well as the percentage increase in the employment opportunities indicate an increasing tendency with an increase in the size of holdings. The percentage increase in the value of households assets has been worked out13.93, 14.24 and 22.59 on the marginal, small and medium size of holdings, respectively, whereas the percentage increase in household income accounts for47.22, 54.76 and 63.42 percent on these holding groups respectively. The percentage increase in employment, in terms of standard mandays, has been worked out27.22, 34.30 and 37.79 percent on the marginal, small and medium size of holdings, respectively. It is evident from Table-2 that the better-off households falling under the larger size of holding group, income have been benefited the most on account of high literacy percentage, regular and sound sources of income and the least better-off

households falling on the uneconomic size of holdings benefited the least from the adoption of vegetable growing in this block of district Chamba in Himachal Pradesh.

CONCLUSIONS AND POLICY IMPLICATIONS

Agricultural is still the vital sector of Indian economy as it contributes around one Seventh to the GDP and employs more than 50 percent of its population. Growth of agricultura1 sector is contingent upon several instruments that include quality and quantity of land, technological progress, market development and crop diversification. The slowdown in agricultural growth after mid 1990s was attributed to increased pattern of specialization, higher orientation towards a few food grains, incomplete agricultural transformation and fatigue in major components of growth. These reflected in the growth rates of area and productivity. Recently, diversification has assumed high importance in the policy pertaining to growth of the sector. Policy makers have been tracking the factors provoking diversification towards high value crops in the face of stagnant yields of food-grains. The impact of crop specialization on environment has dampened the agricultural growth, and slow down in other instruments of growth. Interestingly, this slow down forced a change and the shift is also necessitated by the opening up of the market to the world. Sustained economic growth, rising per capita income and growing urbanization have been causing a shift in the consumption patterns in favour of high value food commodities like fruits, vegetables, dairy, poultry, meat and fish products from staple food such as rice, wheat and coarse cereals. All these situations made crop diversification as an important buzz word in the agricultural sector in India.

Crop diversification is one of the sub-sets of a larger matrix of production alternatives in the cropping sector that has several sub-components. These components include first the diversity in the cropping pattern or spread of crops, and land allocation to high value crops. It also includes change in the cropping pattern among different crops. These components together and not in isolation affect the economy of the farmer in terms of income and risk outcomes. It can be argued that a mere increase in the total number of crops or more diversity in the cropping pattern may not promise more income or less risk. But, it is also specificities of diversification that decide on the income and risk effect. At the same time, impact of other components of diversification on growth of output is dependent on several factors. The differences in dimensions of diversification and its varying relationship with growth raise

some important questions: Why do farmers need diversification, and under what context? What provokes diversification? Secondly, as there could be either growth inducing or depressing effects of diversification, under which circumstances diversification assume more importance? Which is better process of diversification take place, and in which direction it must move i.e. at the crop and regional level? What are the areas of diversification and finally, diversification at what level?

HIGH VALUE CROPS AS A CASE FOR DIVERSIFICATION IN INDIA

In India, after independence, both market and technology were under developed and these were responsible for low income and higher variability in the returns to food and non-food crops. It was then diversification was viewed primarily from the angle of *risk and food security.* Diversification, in terms of diversity of cropping pattern, was thought of as one of the means to minimize risk and overcome food insecurity. The introduction of Green Revolution was one of the steps towards changing the orientation of farmers in India towards adoption of new and better technology. The Technology Mission on Oilseeds (TMO) in late 1980s was an additional effort to improve the technology in another crucial sector of agriculture in India. A mechanism of price support and subsidies was operationalized to improve such *technology-led diversification.* This led to reduction in the level of diversity among crops and increased concentration of cropping pattern as large area was diverted towards a few prominent crops i.e., rice and wheat. Such development initiative or policy came under critical lens, particularly after the introduction of World Trade Organization (WTO) in 1995. Higher economic growth and increased per capita income during 1990s, favored the process of *price-led diversification* as it was based on shifting of area towards crops whose demand and consequently price were increasing at a faster rate. There are many additional justifications for emphasizing on diversification towards high value crops in India. On the basis of supply side conditions, the major factor that raises the need for diversification is the poor performance of agricultural sector in the recent past. Policy initiatives in the past were blamed for present picture of gloom in agricultural sector (Hazra, 2003, and Rudra, 1982). The emphasis on cereal production over the last three decades in India has resulted in low output prices and profitability for cereals which led to dampened agricultural growth (Barghouti et aI. 2004). As significant amount of area was shifted towards high value food-grain crops including rice, wheat and maize, it led to emerging scenario of specialization in many states. The increased

specialization patterns resulted in the emergence of environmental concerns and sustainability issues that expounds on the need for diversification towards other high value crops. Additionally, as rising population pressure has been squeezing agricultural land for cultivation (Joshi et aI., 2006) and several states in India are now hitting the upper limit in use of fertilizers and irrigation; therefore there is need to look for diversification towards high value crops as a policy option (Chand, 2005).

Diversification in favour of high value crops is also advised on account of several demand-side factors. The present stage of poor performance in agriculture along with structural changes taking place in the economy provided a new opportunity for diversification. The consumption patterns in India has been shifting towards high-value commodities like fiuits, vegetables, dairy, poultry, meat and fish products from staple food such as rice, wheat and coarse cereals.

RESEARCH ISSUES AND GAPS

Studies dealing with diversification cover a wide range of aspects and at the same time there are plethora of ways to interpret the significance of changing diversification. While dealing at macro level, the major debate is about the quantification and significance of crop diversification in the growth of output. As noted, there are several components of diversification and each component affects growth in a different way. In terms of diversification towards high value crops, many researchers argue that a silent revolution of shift in cropping pattern towards high value crops is already under way (Joshi, 2006, Vyas, 1996, Chand, 2005, Rao et aI, 2004, Birthal et al,. 2007). But, how the process of diversification has affected the growth of output in India. While dealing with this issue, many studies have dealt with the static aspects of diversification, without emphasizing the dynamic aspect. Actually, diversification affects growth both through static and dynamic effects; a positive static effect of diversification would show a shift of crop pattern in favour of high initial productivity crop. This does not, however, capture developments in the technology of crops that changes over time and may alter relative values of crops. Hence, it is important to consider the dynamic effects of diversification that capture the concomitant movements of yield and cropping pattern change.

Any decision-making in the process of diversification towards high value crops could be analyzed at both macro (state or district) and micro (farm) levels.

POLICY IMPLICATIONS

The specific policy implications of the results are as follows:

I. Diversification indeed has become an important source of agricultural growth in India as well as in Himachal. Increased significance of diversification towards high value crops in output growth is accompanied by the slow productivity growth of high value crops. There is need to emphasize on government intervention in the technology development of high value crops in Himachal Pradesh also which was otherwise being neglected by the policy makers. Diversification towards high value crops is not sufficient for inducing growth but it is also important that these crops remain remunerative over a period of time. That requires proper technological and market development, otherwise the gains from diversification will be negligible.

2. Both economic and non-economic factors influence farmers' decision of reallocation of land from food crops to high value commercial crops. Irrigation is vital for diversification towards vegetable crops, whereas availability of labour is crucial for diversification towards fruit crops ,vegetables and floriculture. Therefore, there is a need for distinct policies for fruits and vegetable sectors. Policy makers need to account for differences in the nature of the crops while designing policies for enhancing diversification towards horticultural crops, vegetables and floriculture.

3. Development and integration of markets are vital to increase farmer's welfare. High price expectations are positively linked with the prices received by fanners over a period of time. Though it is dependant on market structure and integration. High price expectations by farmers directly influence their input use behavior in addition to improving the aggregate productivity and output. Additionally, better market integration influences the net focused gain by the fanners which in turn affects farmers' decision of land allocation towards high value crops.

4. Price stabilization is more important for vegetable crops than fruit crops primarily due to the higher level of perish ability and. lack of marketing options for vegetable crops. A policy of price stabilization will be more effective to increase farmers' orientation towards allocating more area to vegetable crops, whereas, for fruits, yield stabilization is more important.

5. Farmers are concerned not only about crop-specific risk but also about their aggregate production and consumption risk. So improving farmers' orientation towards high value crops require intervention in food grain markets by improving the technology. Better technology in food crop can lead to increase in the productivity of food crops which would help in reducing consumption constraints for higher allocation of land to high value non-food crops. In addition, development of labour market can be critical for land allocation decisions by farmers as it would help farmers to earn more income and alleviate income constraints for diversification.

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