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Viability of Punjab's Small Peasantry: Reflections from Field Data

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ABSTRACT

In the current scenario of agricultural economy of Punjab, the viability issue of farming, particularly of small land holders is being highlighted by the academicians and policy makers. A farm is considered viable when its income surpasses its expenses, proving its potential to not only cover operational costs but also provide a surplus. On the basis of this criterion, in Punjab 93 per cent of small farms were viable as they were able to cover the crop production costs. However, farm household viability is dependent on generating a positive economic surplus, which is calculated by combining off-farm revenue with farm business income and deducting the domestic expenditures of the farm household. In this way 68 per cent of farm household were viable as these were able to generate sufficient income to cater their farm as well as household needs. It is observed that some farm holdings were nonviable due to insufficient farm income from agricultural pursuits, while the viability of the farm household was attained through non-farm income of the household. So far as the income and expenditure level of small and marginal farmers is concerned, an average annual income of these farm household (Rs.102830) was much lower than their annual expenditure (Rs142568). The logit model infers that family size, food expenditure and non-food expenditure reduced the viability, whereas crop income, dairy income and off-farm income have positively affected the viability of these farms. To enhance the viability of these farms, it is crucial to focus on generating off-farm employment and income in rural areas.

Key words: Small peasantry, Viability, Income, Off-farm, Consumption, Punjab.

JEL: O13,O18, Q12, Q18

I

INTRODUCTION

Small peasantry account for 86 per cent of all operational holdings which operates around 47 per cent of total cultivated area in the country. With just an average holding size of 0.6 hectares, the 126 million small and marginal farmers produce around 40 per cent of total marketable surplus in the country (Government of India, 2017). It is believed that the small land holders cannot achieve adequate employment and income from crop cultivation (Rao *et al*., 1987; Dev, 2012). Even an unskilled worker with minimum wages in the service sector is economically better off than a farmer operating up to 2 hectares of land (Singh, 2005). The smallholders are usually more competent than the large farmers in terms of per hectare output and cropping intensity (Chand *et al.*, 2011) and production efficiency (Sekhon *et al.*, 2009; Sharma *et al*., 2021). Yet they find themselves at a competitive disadvantaged postition in terms of realising farm income necessary for the sustenance of the family (Ghosh, 1994). The major predicament of this group, which keeps these people below the poverty line, is surplus family labour and the ownership of un-economic size of farm holdings (Sharma and Sekhon, 2022). The consistent increasing costs of cultivation and reducing profit margins have pushed the farmers towards serious economic crisis (Singh and Kolar, 2001).

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At the time of green revolution's pinnacle, Punjab state was the leader and pioneer of Indian agriculture. Enhancement in technology coupled with favourable government policies led to the transformation of the agrarian economy of Punjab. As a result, agriculture in the state witnessed a high rate of growth up to early 1990s. However, thereafter the pace of growth slowed down which further resulted in swelling costs and downsizing the resources base (Kalkat *et al*., 2006). Despite considering so called success model of agricultural development, currently the farmers particularly small farmers have been experiencing diminishing farm profitability and rising indebtedness. A mismatch between consumption and income, and the consequent debt trap, has led to an alarming spike in suicides among the state's small peasants (Singh, 2018). The extent of debtedness of agricultural households was the highest in Punjab (NSSO, 2014) and per hectare debt amount is inversely related to the farm size (Singh *et al*., 2014). In this background, this paper attempts to examine various dimensions of viability issue of the small land holders in Punjab.

II

SAMPLING DESIGN

The analysis is centred on data collected for a primarily sponsored scheme of the Government of Punjab on 'General marketing and farm economic research'. This scheme caters to various aspects of Punjab agriculture and collects data with cost accounting method through a vast network of Agricultural Sub-inspectors from different agro-climatic zones of the state. Punjab is divided into three well-defined agro-climatic zones, namely sub-mountainous zone (zone I), central zone (zone II) and south-western zone (zone III). Using three stages stratified random sampling technique in this scheme, the data on different parameters was gathered from three districts in zone I, nine districts in zone II, and two districts in zone III. From these selected districts, 21 blocks were selected for the purpose of the study. Likewise, 21 villages were selected choosing one village from each block. In this way, the total sample of farmers was 280, which comprised of 121 marginal and 159 small farmers. The data relates to the agricultural years, triennium ending, 2016–17.

III

VIABILITY OF SMALL PEASANTRY: LEVELS AND CONSEQUENCES

The concept of viability relates to a situation where the particular economic unit under the study is capable of sustaining itself. The present study assesses the viability at two levels, at farm level as well as at household level. A farm is said to viable, when it is capable of producing positive income after covering all the costs incurred for cultivation of crops. In order to examine the viability of marginal and small farms of Punjab, the returns on these farms at different cost components are analysed. It was observed that the gross returns on small farms came out to Rs. 209387 per farm. The returns over cost A1, (all actual expenses in cash and kind incurred in production) was Rs. 152596 whereas at cost A_2 (cost A_1 plus rent paid for lease in land) was Rs. 147918 and at cost C_2 (comprehensive total cost), the returns turned out to be negative (Table

1A). In a simple manner, it can be concluded that after taking into consideration all the costs at farm level (C_2), the farm became non-viable. This implies that farms may lose their sustainability and may not be able to carry over crop cultivation in the long run. Already, the process of depeasantisation is witnessing in the Punjab state (Singh and Bhogal, 2014). This situation confers that at prevailing conditions of farming, small peasantry in Punjab is earning meagre returns from the crop farming.

TABLE 1A: RETURNS FROM CROP PRODUCTION ON SMALL FARMS IN PUNJAB

(*Rs. per farm*)

Particulars	Marginal	Small	Overall
(1)	(2)	(3)	(4)
Gross returns	127983	271336	209387
Returns over cost A1	91429	199145	152596
Returns over cost A2	89267	192552	147918
Returns over cost C1	79910	176503	134761
Returns over cost C2	-3469	-2539	-2940

In Punjab, a large number of marginal and small farms are able to cover the cost of crop cultivation and falls in the viable farm category. At cost $C_{1,}$[1] as much as 97 per cent of these farms were viable whereas at C_2 costs, these figures slightly reduced to93 per cent (Table 1B).

TABLE 1B: LEVEL OF VIABILITY ON SMALL FARMS AT DIFFERENT COSTS IN PUNJAB

Particulars	Number	Viability of farms			
		Cost C_1 Basis		Cost C_2 Basis	
		No.	Per cent	No.	Per cent
(1)	(2)	(3)	(4)	(5)	(6)
Marginal Farms	121	118	98	113	93
Small Farms	159	155	97	148	93
Overall	280	273	97	261	93

*Viability of Farm Household***:** Likewise, the farm household is economically viable when it generates sufficient income. In the current scenario, an economically viable farm household is one that creates adequate income not just to cover farm expenses but also to meet the customary level of consumption needs of the family. The household's financial security is not primarily dependent on the farm holding; rather, it can also benefit greatly from additional revenue from non-farm pursuits or employment that occurs away from the farm.

(I) Income Level of Small Peasantry

Farmers' earnings mainly depend upon income from agriculture, which is the amount remaining after meeting farm expenditure. To determine the income level, the gross returns are first adjusted by subtracting the returns over cost A1, followed by further deductions for expenditure. It is worth noting that the income of small and marginal farmers is supplemented by revenue from sources other than agriculture. One interesting result from the study of farmers is that some people held lower level jobs in the government, like peons, a few persons employed at higher-level jobs depending on their academic credentials. Some farmers found work in the private sector as well,

with some working in tiny industrial units, private schools as peons or security guards, and some running their own stores inside villages. This varied range of revenue streams indicates farmers' efforts to complement agricultural incomes while mitigating hazards. An average smallholder in the state recorded an annual income of Rs 1,02,830 of which Rs 61,542 was from agriculture and Rs 41,288 from non-farm income (Table 2). The highest income of Rs 1,17,780 was observed in zone II with Rs 82,901 earning from agriculture and Rs 34,878 from other sources. This was because the major cropping pattern in zone II is paddy-wheat, which are high-yielding crops. Farmers in zone III, on the other hand, had a total income of Rs 76,623, of which Rs 39,519 came from agriculture and remaining Rs. 37104 from non-farm activities. Because of the prevalence of poor return yielding maize crop in the state's sub-mountainous zone (zone I), the income level of the farmers of this zone was lower (Rs 65,749) than that of other zones.

TABLE 2: INCOME LEVEL OF SMALL FARM HOUSEHOLDS IN PUNJAB

(Rs./household)

Zone	Particulars	Marginal	Small	Average
(1)	(2)	(3)	(4)	(5)
Zone I	Income from crops and dairy	-22798	28217	2290
	Non-Farm Income	48183	79243	63459
	Total income	25385	107460	65749
Zone II	Income from crops and dairy	10265	133430	82901
	Non-Farm Income	47139	26349	34878
	Total income	57405	159780	117780
Zone III	Income from crops and dairy	-29858	89075	39519
	Non-Farm Income	49150	28500	37104
	Total income	19291	117575	76623
Overall	Income from crops and dairy	-1521	109534	61542
	Non-Farm Income	47573	36505	41288
	Total income	46051	146039	102830

*Non-farm income includes income earned from service, business, pension and wages.

It is worrisome to note that the marginal farmers in sub-mountainous and south-western zones were unable to recover even their out-of-pocket expenses. As a result, these farmers suffer losses because their income from farming and dairying has been found to be negative. This mainly happened due to low fertility of land, cropping pattern and quality and level of ground water in these areas. Even in some cases, if income is positive, it is not enough to push the family above the poverty line.

(ii) *Consumption Level of Small Peasantry*

The consumption level of a family is key factor which determine the living standard of the household. Table 3 reveals that the annual consumption expenditure of an average marginal and small farm household was Rs 131565 and Rs 150940. It is imperative to know that for an average small household, food consumption expenditure accounts for the major proportion (52.02 per cent) of the total expenditure. From the non-food items, education was the most important component on which 12.07 per cent of the total expenditure was incurred. Next important components were

the fuel and lighting, clothing and conveyance and communication expenditure which recorded 9.39 per cent, 6.07 per cent and 5.90 per cent of the total expenditure.

TABLE 3: AVERAGE HOUSEHOLD DOMESTIC EXPENDITURE OF SMALL PEASANTRY IN PUNJAB

(Rs/household)

Particulars	Zone I		Zone II		Zone III		Overall		
	Marginal	Small	Marginal	Small	Marginal	Small	Marginal	Small	Average
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Total expenditure	95833 (100.0)	111420 (100.0)	144932 (100.0)	159107 (100.0)	135401 (100.0)	168542 (100.0)	131565 (100.0)	150940 (100.0)	142568 (100.0)
Food items	44987 (46.94)	53716 (48.21)	72944 (50.33)	83328 (52.37)	82603 (61.01)	108421 (64.33)	66580 (50.61)	79951 (52.97)	74172 (52.02)
Non-Food items	50846 (53.06)	57703 (51.79)	71988 (49.67)	75778 (47.63)	52797 (38.99)	60121 (35.67)	64985 (49.39)	70989 (47.03)	68395 (48.08)
(i) Fuel and lighting (per cent)	11.98	12.23	9.59	8.60	7.85	7.67	9.88	9.01	9.39
(ii)Education (per cent)	10.99	12.86	12.63	12.85	8.19	5.87	11.94	12.16	12.07
(iii) Health expenditure (per cent)	4.50	4.51	3.74	4.18	3.50	2.42	3.86	3.57	3.69
(iv) Social ceremonies (per cent)	8.52	6.44	6.02	8.78	3.85	3.91	6.30	4.47	5.26
(v) Conveyance and communication (per cent)	6.64	4.16	5.78	6.56	3.72	4.18	5.77	5.99	5.90
(vi) Clothing and footwear (per cent)	5.96	6.75	6.27	5.71	6.70	6.48	6.25	5.93	6.07
(viii) Others* (per cent)	4.47	4.84	5.64	6.18	5.18	5.15	5.38	5.90	5.67

*Others include toiletries, litigation and tailor charges

However, in this consumption pattern some variations are pragmatic in different zones of the state. In zone II marginal farms has the highest annual domestic expenditure (Rs. 144932), whereas in zone III the small farm families incurred the highest domestic expenditure (Rs.168542). Unlike the general perception that the farmers of the state have been incurring hefty amounts on social celebrations, our field data reveals that these farmers manage their social obligations by spending just 5.26 per cent of the total expenditure.

Extent of Viability of Farm Households

An economically viable farm household is not just one which generates a little higher than subsistence level of income. Basically a family needs income not only for meeting its consumption requirements, but also for facing emergencies like illness, accident, drought, flood, crop failure etc. In addition there has to be some savings to make investment for future growth. Both the production and marketing shocks have serious impact on this vulnerable section. A farm household is considered viable when

it generates a positive economic surplus. This surplus is calculated by combining off-farm income with farm business income (gross returns minus cost C2) from crop and dairy production. Deducting the domestic expenditure from this total determines the economic surplus. If the economic surplus is positive, it indicates that the farm is generating enough income to cover expenses and have a surplus remaining.

Based on the total family income which includes income from farming as well as non-farm income, it is revealed that, about 48 per cent of the marginal farmers and about 84 per cent of the small farmers were viable in Punjab (Table 4). This implies that the remaining around 52 per cent of marginal and about 16 per cent of small farmers do not have the level of income with which they can lead a reasonable level of living after catering for the farm and domestic commitments of the family.

TABLE 4: VIABILITY LEVEL OF SMALL FARM HOUSEHOLD IN PUNJAB

Particulars	Zone I	Zone II	Zone III	Overall
(1)	(2)	(3)	(4)	(5)
i) Viability with crop income on				
Marginal farm household	2	14	0	16
	(6.45)	(17.50)		(13.22)
Small farm household	16	79	8	103
	(53.33)	(68.70)	(57.14)	(64.78)
Overall	18	93	8	109
	(29.03)	(44.69)	(33.33)	(38.92)
i) Viability with crops and dairy income on				
Marginal farm household	3	30	2	35
	(9.68)	(37.50)	(20.00)	(29.93)
Small farm household	17	95	8	120
	(56.67)	(82.61)	(57.14)	(75.47)
Overall	20	125	10	155
	(32.78)	(64.10)	(41.66)	(55.35)
ii) Viability with total family income on				
Marginal farm household	14	41	3	58
	(45.16)	(51.25)	(30.00)	(47.93)
Small farm household	26	98	9	133
	(86.67)	(85.22)	(64.29)	(83.65)
Overall	40	139	12	191
	(65.57)	(71.28)	(50.00)	(68.21)

Figures in the parentheses indicate percentages to the total

However based on the income from crops and dairy (Farm income) it is observed that 30 per cent of the marginal farmers and 75 per cent of the small farmers have attained economic viability. The comparison of viable and non-viable marginal farms reveals a crucial factor underlying the viability: their holding of a greater number of livestock units (3.43 against 3.16 on non-viable farms). This indicates that successful farmers earn the revenue potential of raising livestock as a secondary source of income. More animal units allow these farmers to make more cash from dairy products, particularly milk, improving total farm profitability. Additionally, viable farms, although slightly larger in average size (1.87 acres compared to 1.75 acres of non-viable farms), have significant advantage. The study reveals that viable marginal farmers had higher education level. This education empowers them to farmers to make informed decisions, employ more efficient farming techniques, and optimize their crop yields. It was seen in the study that some of the viable farmers were obtaining more yield per

hectare on their farms resulting in enhanced productivity and, eventually, higher agricultural income. Furthermore, these successful farmers displayed astute financial management by devoting less money to both food and non-food goods, allowing them to prioritize critical expenses and dedicate resources to farming operations. In essence, the higher number of livestock units and efficient agricultural practises, greater education, more yield and wisely expenditure patterns make these farmers viable.

Similarly, the analysis of small farm households indicates that about 75 per cent of them are viable in terms of farm income. The viability of these farmers is linked to several factors. Firstly, the average land holding size of viable farmers is higher, standing at 3.88 acres, compared to nonviable farmers (3.51). Some of the viable farmers were found to be adopting diversified cropping practices with vegetables, and intercropping, which contributes to increased farm income. Furthermore, non-viable farm households often come from larger families, (average family size of non- viable farmers was more) which further lowered per capita income and decreased investment on the farm. Additionally, viable farmers have a higher average number of livestock units (4.65) compared to non-viable farmers (4), which contributes to their enhanced farm income. Furthermore, higher education levels and lower expenditures on both food and non-food items are contributing factors that lead to the viability of 75.5 per cent of the small farm households. It was also seen that the head of the non-viable farm households of small farm category was less educated as compared to viable farmers. They were unable to adopt modern farming practices, adjust to market fluctuations, or use new technology because of this unwillingness to change. In a nutshell one-fourth of the farm household were non-viable due to insufficient farm income, while they tend to attain viability through non-farm income.

The zone-wise comparison of this aspect depicted that the marginal farmers were viable to the tune of 45.16 per cent in zone I, 51.25 per cent in zone II and 30 per cent in zone III. The position of small farmers was better as 86.67 per cent, 85.22 per cent and 64.29 per cent of the small farmers in zone I, zone II and zone III, respectively were found to be viable. On overall basis, the percentage of viable farmers was observed the highest in wheat-rice zone (zone II), followed by wheat-maize zone (zone I) and wheat-cotton zone (zone III). It is ascertained that smallholders are non-viable on their own and even if farmers cultivate the best possible crops or combination of crops, the returns still remain meagre. Thus, small farms, *per se*, are not viable unless they are supported with some supplementary income. Even the support and assistance provided by the government is not sufficient to address the viability of these farms. During 2016-17, the total power subsidy of Rs. 4945 crore, fertiliser subsidy of Rs. 4900 crore and irrigation subsidy of Rs. 1000 crore was provided by the Government to the farm sector, out of which small farmers (34 per cent of the land holdings) barely got around 7 per cent (Singh, 2018).

Factors Affecting Viability: Results of Logit Model

The results of logit model explained the determinants of viability of small farmers. The family size, food expenditure and non-food expenditure have negative and significant impact on the viability of small farms. However, income from crops,

dairy and off-farm has positive and significant impact on the viability of these farms (Table 5).

TABLE5: FACTOR AFFECTING THE VIABILITY OF MARGINAL AND SMALL FARMERS IN PUNJAB

Particulars	Viable	Non-viable	Mean Difference	Coefficients	Odds Ratio
(1)	(2)	(3)	(4)	(5)	(6)
Constant				-6.411**	
Age(Years)	47.32	47.99	-0.66	0.110	1.12
Family Size(No.)	4.87	4.90	-0.03	-0.705**	0.49
Education(Years)	7.01	5.96	1.06	-0.091	0.91
Crop expenditure (Rs.)	61269.42	44092.61	17176.81	-0.00001	0.99999
Food expenditure (Rs.)	71559.80	81239.13	-9679.33	-0.00013***	0.99987
Non-Food expenditure (Rs.)	62860.33	84303.33	-21444.00	-0.00016***	0.99984
Off-Farm Income (Rs.)	51896.29	11208.22	40688.07	0.00021***	1.00021
Crop-income (Rs.)	17139.32	98313.70	73425.62	0.00014***	1.00014
Dairy income (Rs.)	62931.34	10139.50	43791.83	0.00007***	1.00007
R^2			0.87		

***, ** and * represents statistical significance at 1,5 and 10 per cent levels, respectively.

IV

CONSEQUENCES OF NON-VIABILITY OF SMALL FARMS

The non-viable state of small farmers leads to many consequences. Due to lower level of income, in many situations, they fell into the state of poverty, debt, depeasantisation and suicides.

(i) Magnitude of Poverty Amongst Small Peasantry

Poverty is regarded as a matter of low absolute income. On the basis of farm income, 7.5 per cent of the small farmers were living below the poverty line in the Punjab state. After including off-farm income to the net farm income, the percentage of marginal farmers living below poverty line in Punjab declined to 3.21 per cent (Table 6). The highest incidence of poverty among marginal farmers was seen in zone I followed by Zone II of Punjab.

TABLE 6: MAGNITUDE OF POVERTY AMONGST SMALL PEASANTRY IN PUNJAB

Criterion	Farm category	Zone I	Zone II	Zone III	Overall
(1)	(2)	(3)	(4)	(5)	(6)
Poverty on the basis of farm income	Marginal	12(38.71)	6 (7.50)	2 (20.00)	20(16.53)
	Small	1(3.33)	0	0	1(0.63)
	Overall	13(21.31)	6(3.07)	2(8.33)	21(7.5)
Poverty on the basis of family income	Marginal	6(19.35)	2(2.50)	0	8(6.61)
	Small	1(3.33)	0	0	1(0.63)
	Overall	7(11.47)	2(1.02)	2(8.33)	9(3.21)

Figures in parentheses are percentages to the total

*According to S D Tendulkar committee's report on'Methodology of estimation of poverty', the poverty line was Rs. 816 per capita per month for rural Punjab during 2011-12. This poverty line was estimated for the year 2016-17 by using general consumer price Index. Based on this index the poverty line for rural Punjab was estimated as Rs. 1090.62 per capita per month, which comes to be Rs. 13087.47 per capita per annum.

(ii) Debt and Suicide Among Small Peasantry

The farmers' plight in Punjab has been caused by a variety of factors like increasing production costs, stagnated yields, and falling profit margins. The debt on farmers, particularly on small farmers grows over time, and owing to diminishing crop yields, the farmers find it difficult to repay the borrowed sum. In the era of globalisation, the rate of increase in the cultivation costs remained much faster than that of crop prices which further pushed the peasantry under mounting debt. The study of Punjab state reported that the amount of debt per hectare was inversely related to the farm size. It was the highest among marginal farmers (Rs. 1,70,184), followed by small farmers (Rs. 1,04,155), and other farmers (Rs. 44,069) (Singh *et al.*, 2014). This shows that the relative indebtedness of marginal and small farm households were many times higher than that of large farm households. The size and gravity of the farm issue might be gauged by the fact that 6926 farmers committed suicide in the state between 2000 and 2010, out of which 79 per cent were small farmers who operate less than two hectares of land (Singh, 2018, Singh *et al.,* 2018).

(iii) *Depeasantisation*

Punjab is a mechanised agricultural economy, but it faces the challenge of absorbing labour on small farm landholdings leading to non-viable situation, which has resulted in a decline in the number of smallholders over time. The phenomena of leaving farming escalated since 1990s. The number of small land holdings declined from about 5 lakhs in 1990-91 to about 3 lakhs in 2000-01 and further remains at 3.61 lakh during 2015-16. Among these depeasantised farmers, large number have left farming due to crises-led factors such as declining profitability, increasing costs, decreasing returns, crop failure, unemployment and underemployment, increasing indebtedness and even suicides (Singh *et al.,* 2007). This distress induced transformation from agriculture to other sectors is based on hardships or crises driven factors. These factors push the workers towards non-farm activities to eke out their livelihood. The decline in the number of smallholdings divulges that these holdings are no longer sustainable considering current capital-intensive technology (Singh and Bhogal, 2014). After leaving agriculture in distress these farm families adopt lower level of activities due to scarcity of capital and technical skills. Although the average size of holding improves from 0.64 during 1990-91 to 1.05 ha during 2015-16 in Punjab, households with holdings of up to four hectares are finding it difficult to cover their living expenditures solely via farming (Singh *et al.,* 2009). Unlike the Punjab situation, the percentage of marginal and small farmers at the all-India level rose from 78.20 per cent in 1990-91 to 86.21 per cent in 2015-16. This shows that the trend in Punjab is the reverse of that in the country as a whole. Those small and marginal farmers left farming in distress majority of them face decline in income, dissatisfied with their new occupation and again get entrapped in distress. The study by Singh et al (2007) highlighted that the farmers who had left farming, among marginal (47 per cent) and small (28 per cent) turned as wage labourers, which is psychological painful given the state's sociocultural traditions. The major causes of depeasantisation were smaller landholdings, higher fixed costs, low income, limited public support like

institutional credit and subsidies. Likewise, half of the farmers who quit farming had completely or partially sold their land, and one-third of those who sold their land were worse off as a result of their decision (Singh *et al.,* 2009). These are the main consequences of non-viability of small farmers.

VI

THE WAY AHEAD

The viability issue of small peasantry is crucial and can be addressed through various policy initiatives. First, our analysis conferred that crop income is the major determinant which enhanced the viability of small farms; therefore, the profitability of small farms must be increased by reducing the cultivation costs and improving the market efficiencies through large public investment. Secondly, dairy income is the important source for enhancing the viability of the farmers. It was seen that percentage of the non-viable farmers decreased when dairy income was included in the household income. Dairy sector not only provide employment opportunities but also generates additional income and thereby contributes positively towards the farm economy. Thirdly, off-farm income is a significant tool for reducing the poverty and improving the viability of small farms. Next issue is related with subsidies, risk and uncertainties in agriculture. It is imperative to note that out of total subsidy given to farm sector, marginal and small farmers (33 per cent) barely get around seven per cent of the total farm subsidies. Therefore, the rationalisation of subsidies, particularly in favour of small farmers, may help manage the rising agricultural costs and make small farming viable. Moreover, the subsidies for resource saving technologies and for quality farm inputs (seed, fertiliser and pesticides) should be provided to these farmers. Likewise, price risk needs to be lowered down by establishing the remunerative crop prices to the farmers. It is evident that Punjab economy has been unable to make human resource development transition as the surplus labour from the agricultural sector is failing to absorb by the industrial and service sector. The solution did not lie in leaving farming but some supporting plans/initiatives should be set up to supplement the income of marginal and small farmers in agriculture. In such a situation, the rural non-farm sector should be developed in the state in order to create different job options for the rural workforce.

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NOTE

[1]1. Cost A_1 = All actual expenses in cash and kind incurred in production by the owner operator including interest on working capital**;** Cost A_2 = Cost A_1 + Rent paid for leased in land**.** Cost B_1 = Cost A_2 + Interest on value of owned fixed capital assets (excluding land); Cost B_2 = Cost B_1 + Rental value of owned land**;** Cost C_1 = Cost B_1 + Family labour (imputed value). **Cost C_2 =** Cost B_2 + Family labour (imputed value).

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