CHAPTER - 8

CONCLUSION AND POLICY IMPLICATIONS

Although agriculture is the backbone of the Indian economy, yet it has always been a way of life rather than a business in India. No doubt, the urban population has been increasing rapidly, but still 73.55 per cent of our population is rural. Agricultural performance except in the First Five Year Plan was very poor in our country right up to the mid-sixties since farming was done through traditional techniques only.

The state of Punjab contributes significantly in the agricultural economy of India. Despite having only a small geographical area of 1.5 per cent and agricultural area of 3.0 per cent to its credit, the state leads all other states of the country to contribute maximum production of wheat and rice in the central pool. It contributed 43.82 per cent of wheat and 25.39 per cent of rice to the central pool in 2008-09. The total contribution of wheat and rice to the central pool increased from 115.6 lakh tones in 1990-91 to 184.92 lakh tones during 2008-09 consisting of 99.39 lakh tones of wheat and 85.53 lakh tones of rice.

During the last three decades, the state of Punjab while contributing towards agricultural growth has not only set an example in India but in the whole world. Growth in Punjab has been closely associated with the well-known “Green Revolution” which saw the development and adoption of new high-yielding varieties of seeds, assured irrigation, use of chemical fertilizers, insecticides,
pesticides, herbicides, machinery and modern agricultural practices. It has helped in raising the income level of the farmers as well as total food grain production. The adoption of new agricultural technology has helped in transforming the subsistence agriculture into the commercial agriculture. But it cannot be denied that modern technology is expensive and consequently expenditure on crop production has also increased. It has also been found that since the early 1990s, the yield of major agricultural crops has been experiencing stagnation. The additional increments in yield are rising at a very high marginal cost. As a consequence, the per hectare net return is declining and this is the real crisis of Punjab agriculture. The ever-rising cost of cultivation and declining net return has resulted in heavy indebtedness of farmers.

Population of India is increasing alarmingly and according to 2011 Census the population level reached at 121.02 crores. Increase in population has caused more sub-division of landholdings, which has further increased the number of marginal and small farmers. The benefits of new agricultural technology in agriculture are mainly confined to the farmers with larger holdings and those with smaller holdings still continue to have traditional methods of cultivation, because they are unable to make heavy investment for better irrigation facilities, seeds, fertilizers and machinery. It is evident that the benefits of Green Revolution have not been reaped equally by all the farmers, the marginal and small farmers left to their plight of having almost the same level of living. This has pushed them into more poverty and indebtedness.
OBJECTIVES OF THE STUDY

The main objective of the present study is to analyse the poverty and indebtedness among the marginal and small farmer in the rural Punjab. In addition, an attempt has been made to analyse income pattern, consumption pattern, extent of poverty and nature and determinants of indebtedness of the marginal and small farmers in the rural areas of Punjab.

METHODOLOGY

It is a cross-section analysis related to the year 2007-08. The sampling design is a three stage stratified sample as under:

(i) Selection of districts;

(ii) Selection of villages; and

(iii) Selection of households.

The whole state on the basis of levels of agricultural productivity has been divided into three regions, viz. low, medium and high productivity regions. Agricultural productivity is estimated by aggregation of the output of ten major crops of the state for the year 2005-06 (GOP, 2006). Keeping in view the differences in agro-climatic conditions and to avoid the geographical contiguity of sampled districts, it is deemed fit to select, Hoshiarpur district from the low productivity region, Faridkot district from the medium productivity region and Ludhiana district from the high productivity region.
On the basis of random sampling method one village from each development block of the selected districts has been selected. Thus, in all, twenty-four villages were selected for the survey. Twelve villages from Ludhiana district, two villages from Faridkot district and ten villages from Hoshiarpur district have been selected. As many as 20 per cent farm households consisting of marginal and small farmers formed the sample for the survey. Out of 24 villages, 650 households in all, 250 households from Hoshiarpur district, 112 from Faridkot district and 288 from Ludhiana district were selected. Of the total households, 340 households were from the marginal farm-size category and 310 households from the small farm-size category.

Tabular analysis has been done using the standard statistical tools like mean values and proportions. Techniques like concentration co-efficient and multiple regression analysis have also been used to support the findings.

MAIN FINDINGS

The overall sex ratio goes against females in both the farm-size categories. It has been found that out of total sampled farm population of 3,002 persons, majority of them (85.23 per cent) are literates. Further, out of total 3,522 persons, 777 (22.07 per cent) are earners, 1,100 (31.23 per cent) earning dependents and 1,645 (46.70 per cent) dependents. Hoshiarpur district has the highest ratio of dependent persons, while Ludhiana district has the lowest ratio in this regard. However, Ludhiana district has the highest ratio of earning dependent persons, whereas Hoshiarpur district has the lowest ratio in this regard. Faridkot district has
the highest ratio of earning persons, followed by Ludhiana and Hoshiarpur districts with the respective percentages of 22.14 and 21.72. The average family size of the marginal and small farmers is 5.48 and 5.34 respectively. The average family size for both the categories taken together is 5.41. The average size of operational holdings of the small farmers (3.45 acres) is almost double than that of the marginal farmers (1.77 acres). The average size of operational holdings for both the categories taken together is 2.57 acres.

An average sampled farm household earns Rs. 63,372.87 annually in the rural Punjab. There are considerable variations in the income levels earned by the marginal and small farm-size categories. It is Rs. 48,094.90 and Rs. 80,129.32 for the marginal and small farm-size categories respectively. The study also reveals a positive relationship between farm-size and income levels. It is evident that as the farm-size increases, the average income of the farm households also increases. Farm business income is the most significant component of household income followed by income from milk and milk products, salaries and pensions.

An average sampled farm household earns per capita income of Rs. 11,695.72 annually. However, there are differences in the per capita income levels of the two farm-size categories. For example, per capita income of the marginal farm-size category is Rs. 8772.67; and it is Rs.14981.96 annually for the small farm-size category. The per capita income of small farm-size category is 1.70 times the per capita income of marginal farm-size category.
The income concentration among the marginal farm households is slightly greater than that of the small farm households. Gini coefficients also support this evidence. These are 0.2102 and 0.1797 for the marginal and small farmers respectively. Gini coefficient for all the sampled farm households is of the order of 0.3454, indicating a highly skewed distribution of income. The Gini coefficients are also higher than those of per household basis among the marginal and small farm-size categories. On an overall basis, the Gini coefficient is greater for per capita income vis-à-vis per household income. This shows that the concentration of per capita income is higher than the per household income.

There are considerable variations in the income levels of marginal and small farm-size categories across the three districts under study. It is the highest in the case of Ludhiana district, i.e., Rs. 71,322.03 annually. It is the lowest in the case of Hoshiarpur district, i.e. Rs. 53,222.72 annually. An average sampled farm household earns Rs. 65,588.62 in Faridkot district annually. An average sampled farm household’s income of the marginal farm-size category is the highest in Ludhiana district, i.e., Rs. 54,832.60 and the lowest, i.e., Rs. 40,612.50 in Hoshiarpur district. An average sampled farm household’s income of the small farm-size category is the highest in Ludhiana district, i.e., Rs. 88,753.74 and the lowest Rs. 69,013.97 in Hoshiarpur district. The major sources of income for the marginal and small farm-size category in all the three districts under study are farm business income, and milk and milk products.
The marginal and small farm households in all the three districts are supplementing their income from sale of milk and milk products, and hiring out labour in agricultural and non-agricultural sectors. The per capita income of an average sampled farm household is the highest in Ludhiana district (Rs. 12,992.23) followed by Faridkot district (Rs. 12,121.97) and Hoshiarpur district (Rs. 9,966.81). The marginal and small farm-size categories earn the highest per capita income in Ludhiana district, i.e., Rs. 9,908.67 and Rs. 16,306.45 respectively. In Hoshiarpur district, it is the lowest, i.e., Rs. 7,496.85 and Rs. 13,162.43 for the marginal and small farm-size categories respectively. The per capita income of the marginal and small farm-size categories in Faridkot district is Rs. 8876.39 and Rs. 15140.19 respectively.

The distribution of per household income among the marginal and small farm households in Hoshiarpur district is worse than that in the other two districts under study. The Gini coefficient shows that concentration of household income is higher in Hoshiarpur and Faridkot districts. An inter-district analysis shows that the farm households have a relatively less skewed distribution of income in Ludhiana district. The Gini coefficient shows that concentration of per capita income is slightly higher in Hoshiarpur district, followed by Faridkot and Ludhiana districts. It also shows that concentration of per household income is greater than the per capita income in all the three districts under study.

An annual consumption expenditure of an average sampled farm household is Rs. 74,272.29. However, there are variations in consumption expenditure of the
two farm-size categories. For example, households belonging to the marginal farm-size category have recorded annual per household consumption expenditure of Rs. 60,281.75, whereas the annual consumption expenditure for the small farm-size category has been Rs. 89,616.91. The study also revealed that higher the farm-size, higher is the consumption expenditure and vice-versa. The consumption expenditure of the small farm-size category is found to be 1.49 times the consumption expenditure of the marginal farm-size category.

An average sampled farm household non-durables consumption expenditure accounts for a major proportion of the total consumption expenditure followed by durable commodities, services, marriages and other socio-religious ceremonies. An average sampled farm household spends 54.46 per cent on non-durable items. A large proportion of the total expenditure, i.e., 55.39 per cent of the marginal farm-size category is accounted for by non-durables and the same for small farm-size category is 53.71 per cent. This proportion decreases as farm-size increases. Among non-durables milk and milk products is the important item of consumption and an average sampled farm household spends 10.65 per cent of total consumption expenditure on this item. This proportional share decreases as farm-size increases.

For an average sampled farm household 16.74 per cent of total consumption expenditure is incurred on durable items. 16.79 per cent of the total expenditure of the marginal farm-size category is accounted for by durables and the same for small farm-size category is 16.72 per cent. Among durables a major
share, i.e., 10.57 per cent goes to house construction and repairs accounting for an average sampled farm household. For an average sampled farm household 14.96 per cent of total consumption expenditure is incurred on services. This proportion decreases as farm-size increases. Among services a major share goes to healthcare accounting 4.39 per cent for an average sampled farm household. This is followed by education expenditure, i.e., 4.20 per cent which comprises of 4.38 per cent for the marginal farm-size category and 4.08 per cent for the small farm-size category. This proportion decreases as farm-size increases. Marriages and other socio-religious ceremonies account for 13.84 per cent of the total consumption expenditure for an average sampled farm household. This proportion is 12.20 per cent for the marginal farm-size category and 15.05 per cent for the small farm-size category. There is a positive relationship between farm-size and the relative share of consumption expenditure on marriages and other socio-religious ceremonies. Regarding the relative share of consumption expenditure on non-durables and durables the marginal farm-size category is spending a little more as compared to the small farm-size category.

The per capita consumption expenditure of an average sampled farm household is Rs. 13,707.11. However, there are considerable variations in the per capita consumption expenditure across the marginal and small farm-size categories. For instance, per capita consumption expenditure is higher for the small farmers (Rs. 16,755.75) and lower for the marginal farmers (Rs. 10,995.41). Per capita consumption expenditure of the small farm-size category is found to be
1.52 times the per capita consumption expenditure of the marginal farm-size category.

For an average sampled farm household, the average propensity to consume comes to 1.17. It is more than one for both the farm-size categories. It is 1.25 for the marginal farm-size category and 1.12 for the small farm-size category. This implies that the marginal and small farm households try to maintain a minimum level of consumption whether they can afford it or not.

Gini coefficient of the marginal farm households indicates a worse pattern of distribution. The Gini coefficient of the small farm households depicts some fair distribution of consumption expenditure. The value of Gini coefficient for both the categories taken together is 0.3332 that indicates a worse pattern of distribution than within the individual categories.

The household consumption expenditure of Rs. 85,872.73 is the highest in the case of Ludhiana district followed by Faridkot and Hoshiarpur districts with the consumption expenditure of Rs. 74,507.28 and Rs. 60,803.51 respectively. Per household consumption expenditure on non-durables, durables, services, marriages and other socio-religious ceremonies increases with an increase in the farm-size in all the three selected districts. The non-durable consumption expenditure accounts for the major proportion of the total consumption expenditure followed by durables, services and marriages and other socio-religious ceremonies. In the case of marginal farm-size category, relative share of consumption expenditure on non-durables is the highest in Hoshiarpur district.
(60.48 per cent) and the lowest in Faridkot district (52.00 per cent). In the case of small farm-size category, this proportion is the highest in Ludhiana district (56.36 per cent) and the lowest in Faridkot district (46.77 per cent). Proportionate consumption expenditure on durable items is the highest in Ludhiana district (17.27 per cent) followed by Faridkot district (17.11 per cent) and Hoshiarpur district (15.68 per cent). Consumption expenditure on services is the highest (16.14 per cent) in Faridkot district and the lowest (12.87 per cent) in Hoshiarpur district. In Ludhiana district, this proportion is 15.90 per cent. The expenditure on marriages and other socio-religious ceremonies accounts for 17.84 per cent of total consumption of the sampled farm households in Faridkot district, whereas it is 14.81 per cent and 11.89 per cent for Hoshiarpur and Ludhiana districts respectively. The proportionate expenditure on non-durable items has a negative relationship with farm-size and the proportionate expenditure on durables and marriages and other socio-religious ceremonies bears a positive relationship with farm-size in all the three districts under study. In all the three selected districts, the pattern of consumption of the marginal and small farmers is subsistence based.

There are considerable variations in the per capita consumption expenditure across the districts. For example, an average sampled farm household in Ludhiana district spends Rs. 16,259.94 per capita and the corresponding figures for Faridkot and Hoshiarpur districts are Rs. 13,770.28 and Rs. 11,386.44 respectively. The per capita consumption expenditure increases with the increase in farm-size in all the three districts under study. Per capita consumption expenditure on non-durables,
durables, services, marriages and other socio-religious ceremonies increases with an increase in the farm-size in all the three selected districts. There is much similarity in the per capita consumption expenditure pattern of the marginal and small farm-size categories across the districts under study.

The highest average propensity to consume, i.e., 1.20 is observed for Ludhiana district and the lowest, i.e., 1.13 for Faridkot district. The average propensity to consume is 1.14 for Hoshiarpur district. For the marginal farm-size category, the highest average propensity to consume is 1.29 for Faridkot district followed by 1.25 for Hoshiarpur district and 1.24 for Ludhiana district. For the small farm-size category, the highest average propensity to consume is 1.18 in Ludhiana district followed by 1.06 for Hoshiarpur district and 1.05 for Faridkot district. The marginal and small farm-size categories in all the selected districts are in deficit. They try to maintain a minimum level of consumption whether they can afford it or not. The field survey clearly brought out that to overcome this problem the marginal and small farmers in all the three selected districts have to take loans from various sources.

The Gini ratio is observed to be the highest (0.3215 per cent) among the sampled farmers of Hoshiarpur district and the lowest (0.3023 per cent) among the sampled farmers of Faridkot district revealing worse and better patterns of distribution of per capita consumption expenditure respectively. When we compare the per household and per capita consumption expenditure distribution
we find that the distribution is slightly fair in per capita consumption expenditure in all three districts under study.

The study revealed that as per the poverty line worked out on the basis of the Expert Group criterion taking into account the per capita income of the marginal and small farm households in rural Punjab, as many as 65.23 per cent of the farm households appear under the poverty line. However, the independent percentages for the marginal and small farm-size categories falling below the poverty line are 72.35 per cent and 57.41 per cent respectively.

By using the second method, i.e., 50 per cent of the state PCI, 86 per cent of the marginal and small farmers taken together in the rural Punjab live below the poverty line. However, the independent percentages with respect to the marginal and small farm-size categories are 91.17 per cent and 80.32 per cent respectively.

If we take into consideration only 40 per cent of per capita income of the state instead of 50 per cent to identify the below poverty line households in the rural Punjab. By using this method, 75.69 per cent of the marginal and small farm households live below the poverty line.

Another method to measure the poverty is $ 1.25 per day. As per this method, 75.23 per cent of the marginal and small farm households in the rural Punjab live below the poverty line. However, the marginal and small farm-size categories falling below the poverty line are represented by 81.17 per cent and 68.70 per cent respectively.
The percentage of persons living below the poverty line by taking into consideration an income of $2 per day, as many as 98.30 per cent of the marginal and small farm households in the rural Punjab live below the poverty line. All the marginal farmers are living below the poverty line as per this method. This percentage is 96.45 per cent for the small farm-size category. All the poverty measures establish an inverse relationship between the population below the poverty line and farm-size.

The district-wise percentage of persons living below the poverty line, which was worked out on the basis of income as per the Expert Group criterion, the incidence of poverty is high in the case of Hoshiarpur and Faridkot districts, i.e., 75.60 and 65.18 per cent respectively. It is relatively low in the case of Ludhiana district, i.e., 56.25 per cent. In the case of the marginal farm-size category, this percentage is also high in Hoshiarpur district (80.57 per cent) and low in Ludhiana district (64.19 per cent). In the case of small farm-size category, a similar trend is noticed as for the marginal farm-size category. The above analysis shows that the incidence of poverty is inversely related with the agricultural productivity.

By using the second method, i.e., 50 per cent of the state PCI, the incidence of poverty is high in the case of Hoshiarpur district, i.e., 91.20 per cent and it is relatively low in Ludhiana district, i.e., 82.29 per cent. This percentage for Faridkot district is 83.92 per cent. In the case of marginal farm-size category, 97.84 per cent population is living below the poverty line in Hoshiarpur district.
However, in Faridkot and Ludhiana districts, these percentages stand at 90.56 and 85.13 respectively. In the case of small farm-size category, this percentage is again the highest (82.88 per cent) in Hoshiarpur district and the lowest (77.96 per cent) in Faridkot district. However, Ludhiana district has registered a percentage of 79.28.

According to 40 per cent of the state PCI measure, the incidence of poverty is the highest in case of Hoshiarpur district, i.e., 84.00 per cent, whereas it is the lowest in Ludhiana district, i.e., 69.09 per cent. This percentage is 74.10 for Faridkot district. In the case of marginal farm-size category, this percentage is the highest (89.20) in Hoshiarpur district and the lowest (73.64) in Ludhiana district. This percentage is 83.01 for Faridkot district. The small farm-size category also shows a similar trend as noticed in the case of marginal farm-size category. The above analysis shows that the incidence of poverty is inversely related with the agricultural productivity. The analysis shows that the incidence of poverty is inversely related with the agricultural productivity.

According to $1.25 per day measure, the incidence of poverty is high in the case of Hoshiarpur district, i.e., 83.60 per cent. It is relatively low in the case of Ludhiana district, i.e., 68.75 per cent. This percentage is 73.21 for Faridkot district. In the case of marginal farm-size category, this percentage is the highest (89.20 per cent) in Hoshiarpur district and the lowest (73.64 per cent) in Ludhiana district. The small farm-size category has shows a similar trend as noticed in the
case of marginal farm-size category. The analysis shows that the incidence of poverty is inversely related with the agricultural productivity.

By using the $2 per day measure, all the marginal and small farmers are living below the poverty line in Hoshiarpur district. 97.32 per cent and 97.22 per cent of the population below the poverty line represent Faridkot and Ludhiana districts respectively. In the case of marginal farm-size category, the total population under study is living below the poverty line in all the three districts. In the case of small farm-size category, the total population under study living below the poverty line in Hoshiarpur district. However, the percentage of such persons is 94.91 per cent in Faridkot district and 94.28 per cent in Ludhiana district. It is clear that there is also an inverse relationship between the population below the poverty line and farm-size and a large majority of the marginal and small farmers are not able to satisfy minimum desirable level of living.

In the case of both farm-size categories taken together, the contribution of the explanatory variables such as family-size, income from subsidiary occupations, number of earners and farm-size are positive and statistically significant, whereas the regression coefficient pertaining to expenditure on education is positive and not statistically significant. The value of $R^2$ is 0.88.

The factors like income from subsidiary occupations, farm-size and number of earners appear to have a positive contribution in explaining the per capita income differentials. The analysis leads us to conclude that better employment
opportunities extended to the marginal and small farmers can help to improve their level of income.

The estimates of regression coefficient suggest that the variations in per capita income are explained by family-size, income from subsidiary occupations and farm-size in the case of sampled farmers in all the three selected districts. The regression coefficients for family-size are negative in all the districts under study. The contribution of expenditure on education is positive in all the three districts and statistically significant in Hoshiarpur and Ludhiana districts only. The number of earners is positive in all the districts under study and statistically significant in Faridkot and Ludhiana districts only. The values of $R^2$ are 0.85, 0.79 and 0.82 for the sampled farmers in Hoshiarpur, Faridkot and Ludhiana districts respectively.

According to the Expert Group criterion, 55.53 per cent of the marginal and small farm households in the rural Punjab live below the poverty line on the basis of consumption expenditure. As many as 63.23 per cent and 47.09 per cent of the population living below the poverty line belong to the marginal and small farm-size categories respectively. Population below the poverty line is found to be negatively related to the farm-size.

By using the second method, i.e., 50 per cent of the state PCI, 78.15 per cent of the marginal and small farmers taken together in the rural Punjab live below the poverty line, while these figures work out to be 82.64 per cent and 73.22 per cent for the marginal and small farm-size categories respectively. Population below the poverty line is found to be negatively related to the farm-size.
By taking only 40 per cent of per capita income of the state, the incidence of poverty is 68.61 per cent of the marginal and small farm households in the rural Punjab on the basis of their consumption expenditure. There is considerable variation in the percentages of households living below the poverty line for the two farm-size categories. It is reflected by the percentages of 74.70 and 61.93 for the marginal and small farm-size categories respectively. There is also an inverse relationship between the population below the poverty line and farm-size.

By using $ 1.25 per day measure, 67.53 per cent of the sampled farmers in the rural Punjab live below the poverty line. The percentages for those in the marginal and small farm-size categories living below the poverty line are 74.10 per cent and 60.32 per cent respectively. There is also an inverse relationship between the population below the poverty line and farm-size.

By using $ 2 per day measure, 97.23 per cent of the sampled farmers in the rural Punjab live below the poverty line. However, the independent percentages for the marginal and small farm-size categories are 99.70 and 94.51 respectively. Hence, an inverse relationship is found between the population below the poverty line and farm-size.

According to the Expert Group criterion, the incidence of poverty is the highest (65.60 per cent) in the case of Hoshiarpur district, whereas the lowest (47.22 per cent) in Ludhiana district. This percentage is 54.46 for Faridkot district. In the case of the marginal farm-size category, this percentage is the highest (70.50 per cent) in Hoshiarpur district and the lowest (56.60 per cent) in Faridkot district.
Similarly, in the case of small farm-size category, this percentage is the highest (59.45 per cent) in Hoshiarpur district and the lowest (35.00 per cent) in Ludhiana district.

By using the second method, i.e., 50 per cent of the state PCI, 78.15 per cent of the marginal and small farm households in the rural Punjab live below the poverty line. The incidence of poverty is the highest (84.80 per cent) in the case of Hoshiarpur district and the lowest (73.21 per cent) in the case of Faridkot district. This percentage is 74.30 for Ludhiana district. In the case of marginal farm-size category, 92.08 per cent rural population is living below the poverty line in Hoshiarpur district. However, Ludhiana and Faridkot districts represent such percentages as 77.02 and 73.58 respectively. In the case of small farm-size category, this percentage is again the highest (75.67 per cent) in Hoshiarpur district and the lowest (71.42 per cent) in Ludhiana district. This percentage is 72.88 for Faridkot district. The above analysis brings out that the incidence of poverty is inversely related with the agricultural productivity.

According to 40 per cent of the state PCI, the incidence of poverty is the highest (79.20 per cent) in the case of Hoshiarpur district and the lowest (60.76 per cent) in the Ludhiana district. It is 65.17 per cent in Faridkot district. Similarly, in the case of marginal farm-size category, this percentage is the highest (84.89 per cent) in Hoshiarpur district and the lowest (66.03 per cent) in Faridkot district. This percentage is 68.24 for Ludhiana district. In the case of small farm-size
category, this percentage is again the highest (72.07 per cent) in Hoshiarpur district and the lowest (52.85 per cent) in Ludhiana district. This percentage is 64.40 for Faridkot district. Thus, the analysis provides that the incidence of poverty is inversely related with the agricultural productivity.

By using $1.25 measure, the incidence of poverty is the highest (78.40 per cent) in the case of Hoshiarpur district and the lowest (59.02 per cent) in Ludhiana district. While it is 65.17 per cent in Faridkot district. In the case of marginal farm-size category, this percentage is the highest (84.89 per cent) in Hoshiarpur district and the lowest (66.03 per cent) in Faridkot district. In the case of small farm-size category, this percentage is again the highest (70.27 per cent) in Hoshiarpur district and the lowest (50.71 per cent) in Ludhiana district. However, this percentage is 64.40 for Faridkot district. Thus, the analysis establishes an inverse relationship between the population below the poverty line and farm-size.

By using $2 per day measure, the incidence of poverty is the highest (99.20 per cent) in the case of Hoshiarpur district and the lowest (95.48 per cent) in Ludhiana district, while it is 97.32 per cent in Faridkot district. In the case of marginal farm-size category, the whole population under study is living below the poverty line in Hoshiarpur and Faridkot districts. This percentage is 99.32 for Ludhiana district. In the case of small farm-size category, this percentage is the highest (98.19 per cent) in Hoshiarpur district and the lowest (91.42 per cent) in Ludhiana district. This percentage is 94.91 for Faridkot district. The above
analysis leads us to the fact that the incidence of poverty is inversely related with the agricultural productivity.

The contribution of explanatory variables such as number of dependents, income level and repayment of loans is statistically significant in the case of all the sampled farmers. The regression coefficient for educational level is statistically non-significant. The coefficient of multiple determination shows that 82 per cent variations in per capita consumption expenditure are explained by the explanatory variables.

Variations in per capita consumption expenditure of the marginal and small farmers taken together in all the three districts under study are accounted by the number of dependents, income level, educational level and repayment of loans. The numbers of dependents bear negative and significant contribution in consumption differentials in all three districts, whereas income level appears to have a positive and significant contribution in Hoshiarpur and Ludhiana districts. While the regression coefficient for repayment of loans is negative and statistically significant in all the districts. The regression coefficients for educational level are positive in all the regions and statistically significant in Hoshiarpur district only. Together, all the explanatory variables explain 89, 88 and 84 per cent variations in the consumption level for all the sampled farmers in Ludhiana, Hoshiarpur and Faridkot districts respectively.

Slightly more than 83 per cent of sampled farm households are under debt. There are certain variations across the farm-size categories. The percentage of
indebted households of the marginal farm-size category is 82.35, while it is 84.51 in the case of small farm-size category.

The average amount of loan per indebted sampled farm household is Rs. 77,418.31, while the average amount of loan per sampled farm household is Rs. 64,554.95. It is pertinent to note that the amount of loan per indebted household and per sampled household increases as farm-size goes up. This reveals that the needs of farmers increase with an increase in the farm-size, because without investing in operational as well as fixed costs, the share of income cannot be enhanced.

For an average sampled farm household, the amount of loan per owned acre is Rs. 28,256.38 and per operated acre Rs. 25,081.12. The category-wise amount of loan per owned acre and per operated acre is relatively more among the marginal farm-size category. The analysis shows that the burden of debt is greater on the marginal farm-size category as compared to the small farm-size category.

An average sampled farm household in the rural Punjab has taken Rs. 26,570.78 of total debt from non-institutional agencies, while that from the institutional agencies, it is Rs. 37,984.17. The institutional agencies are playing a more significant role in providing loans to the marginal and small farm-size households as compared to the non-institutional agencies. It is clear from the above analysis that institutional agencies are the main source of credit, providing 58.84 per cent of the total debt. This proportion increases with the increase in farm-size. The remaining 41.16 per cent of the total loan is taken from non-
institutional agencies. This proportional share is inversely associated with farm-size. Further, 57.76 per cent of the total loans are taken for productive purposes. This proportion increases as the farm-size increases. Among the different purposes the highest share goes to the purchase of agricultural inputs and this proportion is positively associated with the farm-size. An average 47.95 per cent of the total loans have been taken at the rate of interest ranging from 10 to 20 per cent. This proportion decreases as farm-size goes up.

The regression coefficients for income from subsidiary occupations and education level are negative which indicate that indebtedness decreases as education level of the head of family increases or the income from sources other than agriculture increases. The regression coefficients for family-size, farm-size and expenditure on unproductive purposes are positive. This implies that with the increase in expenditure on family maintenance the indebtedness also increases. Positive relationship between farm-size and indebtedness shows that the capacity to take loans increases as farm-size increases.

The indebted households range from 80.80 per cent in Hoshiarpur district to 85.41 per cent in Ludhiana district. The highest proportion of the marginal farmers under debt (84.90 per cent) is in Faridkot district followed by Hoshiarpur and Ludhiana districts. The highest proportion of the small farmers under debt (90.00 per cent) is in Ludhiana district followed by Faridkot and Hoshiarpur districts.

The amount of loan per operated acre is the highest (Rs. 28,129.23) in Ludhiana district and the lowest (Rs. 18,913.94) in Faridkot district. An average
sampled farm household in Ludhiana district avails 43.77 per cent of the total loans from non-institutional agencies, while the corresponding figures for Faridkot and Hoshiarpur districts are 41.97 per cent and 36.95 per cent respectively. In the case of marginal farm-size category the proportional share of non-institutional agencies is as high as 48.00 per cent and 47.01 per cent in Faridkot and Ludhiana districts respectively. The corresponding figure for Hoshiarpur district is 38.33 per cent. The share of non-institutional agencies in the case of small farm-size category is 42.00 per cent for Ludhiana district, 38.64 per cent for Faridkot district and 35.99 per cent for Hoshiarpur district. Commission agents come out to be the largest contributor towards loans for the marginal and small farm-size categories.

The share of institutional sources is 63.05 per cent for an average sampled farm household in Hoshiarpur district followed by Faridkot and Ludhiana districts. The co-operative societies/banks come out to be the largest contributor towards loans in all the districts under study. The marginal farm-size category in Hoshiarpur district has availed 61.67 per cent loan from institutional agencies. The corresponding figures for Ludhiana and Faridkot districts are 52.99 per cent and 52.00 per cent, respectively. The share of institutional agencies in the case of small farm-size category is 64.01 per cent for Hoshiarpur district, 61.36 per cent for Faridkot district and 58.00 per cent for Ludhiana district. An average sampled farm household in all the selected districts is spending the highest proportion of loans on productive purposes. This proportion is the highest (60.30 per cent) in Hoshiarpur district followed by Ludhiana and Faridkot districts. The major
proportion of loans spent on productive purposes is for the purchase of agricultural inputs. This proportion ranges from 37.34 per cent in Hoshiarpur district to 42.99 per cent in Ludhiana district. The share of non-productive loans ranges from 39.70 per cent in Hoshiarpur district to 45.23 per cent in Faridkot district. The major proportion of non-productive debt is accounted for purchase of consumer goods by an average sampled farm household in all the districts under study.

The above analysis shows that due to the application of new farm techniques the marginal and small farmers have to borrow funds to meet their requirements. The marginal and small farmers are unable to meet their consumption expenditure with their income. To bridge this gap, these farmers borrow mainly for the purchase of consumer goods.

An average sampled farm household in Ludhiana district has taken the highest share of total loans (49.92 per cent) at the rate of interest ranging from 10 to 20 per cent. The marginal farm-size category in all the selected districts has taken the highest share of total loans at the rate of interest ranging from 10 to 20 per cent. This proportion is the highest (53.43 per cent) in the case of Faridkot district and the lowest (44.73 per cent) in Hoshiarpur district. The small farm-size category in all the three districts has also taken the highest share of total loans at the rate of interest ranging from 10 to 20 per cent. This proportion is the highest (49.20 per cent) in the case of Ludhiana district and the lowest (44.79 per cent) in Faridkot district.
The regression coefficients for income from subsidiary occupation and educational level of the head of the family are negative and statistically significant in all the three selected districts. This reveals that income from subsidiary occupations has an inverse relationship with indebtedness as this income increases the capacity to repay loans. The educational level of the head of the family has inverse relationship with indebtedness.

The regression coefficient for family-size is significant in Hoshiarpur and Ludhiana districts. The variable of expenditure on unproductive purposes bears a direct relationship with indebtedness implying an increase in indebtedness with the increase in expenditure on unproductive purposes. Farm-size has a significant positive relationship with indebtedness. This indicates that the capacity of the farmers to take loans increases as the farm-size goes up.

**POLICY IMPLICATIONS**

The conclusions drawn from the study reveal that the income generated from the farming activities by the marginal and small farmers is quite insufficient to satisfy their needs. The study has also brought out that more than three-fourths of them in rural Punjab live below the poverty line. The different criterions used to measure poverty also establish an inverse relationship between the percentage of the marginal and small farmers living below the poverty line and farm-size. To overcome the gap between consumption expenditure and income, the marginal and small farmers have to borrow from both the institutional and non-institutional sources. The average propensity to consume is more than unity in the case of
sampled farm households. They try to maintain a minimum level of consumption whether they are able to do so or not. To overcome this problem, they need to increase their income through different measures. Since a positive relationship between farm-size and farm business income has been found, this makes a strong case for the land reforms in favour of the marginal and small farmers. The government should introduce necessary land reforms by lowering the ceiling level of landholdings, acquiring the surplus land and distributing this land to such farmers. Secondly, the remunerative minimum support prices of the different crops grown should be fixed on the basis of cost of production and consumer price indices in a manner that these farmers are able to meet their basic needs of food, shelter, clothing, education, healthcare and clean environment in a respectable manner.

Taking into account the fact that the marginal and small farmers are under high burden of debt the government should take necessary steps to regularise and continuously monitor the functioning of non-institutional sources of finance, improve the functioning and lending procedure of the commercial banks and strengthen the functioning of co-operative banks. To raise the level of income and productivity of the marginal and small farmers, it is essential that adequate and timely supply of modern inputs like HYVs of seeds, fertilizers, pesticides, assured irrigation water and credit should be ensured to them. Educating the marginal and small farmers about the subsidiary occupations, providing interest free loans or at reasonable rates of interest, creating sufficient employment opportunities,
reasonable fixation of prices of agricultural commodities, assured purchase of agricultural produce, subsidising the agricultural inputs, providing insurance cover to agriculture, establishing agro-based industries in the rural areas and enforcing of already existing special programmes for the rural development in a proper perspective taken on priority basis can help in minimising some of the existing problems of the small and marginal farmers.

The enterprising farmers have already switched over to the diversification in agricultural practices. However, there is need to encourage and support the small and marginal farmers in the diversification of agriculture so that their income base is widened. A mass campaign should also be launched against the use of intoxicants and some of the social evils like dowry and too much expenditure on socio-religious ceremonies.

The welfare schemes initiated by the government for the marginal and small farmers need to be implemented in their true spirit with zeal by the block and district level officers, allowing no laxity in their efforts to make such schemes successful. Such steps taken on priority basis can help to lessen the economic and other problems of the marginal and small farmers.