Agriculture sector, the backbone of an economy, provides the basic ingredients to mankind and raw material for industrialization. It plays a strategic role in the process of economic development and growth. Leading industrialized countries of today were once predominantly agricultural economies and still have the dominance of agriculture. Agricultural sector contributes a major proportion of the national income and caters to a large segment of workforce. India a predominantly agricultural economy, has primarily concentrated on increasing the food production to cope with a burgeoning population. In India, 60 per cent of the population owes its livelihood to agriculture which contributed 14 per cent of gross national product of our country. An increment of 2.2 per cent per annum is estimated to sustain the ever increasing population (Nasurdeen and Balakrishan, 1996). Therefore, the growth in the agricultural sector is a must to have a more balanced and progressive economy. As per the 2011 census of India, 53.65 per cent of the total workforce was engaged in agriculture and allied activities primarily as cultivators and agricultural labourers (GoI, 2011).

Majority of the farmers in India belong to the category of marginal and small farmers (80 per cent of the total operational holdings in the country, cultivating about 36 per cent of the total area) and the number and proportion of such farmers have been growing over time. The rapid increase in population, sub-division and fragmentation of land holdings (2.7 fragments/holding) and the changed family system from joint to nuclear families in rural India have made the size of holdings smaller (1.16 hectare average). The major problems facing this group are low saving, low investment, low returns, surplus family labour, malnutrition and the possession of un-economic size of farm holdings (Pandey and Kaushal, 1980). The general notion is that with technological changes in agriculture and the trend of income distribution is widening the gap between the rich and the poor (Noor and Rao, 1987).

Marginal and small farmers in our country face numerous problems both social and economic, and they have nothing to fall back upon except the small piece of land they possess. Diversification in their production activity is limited because of
poor land base. Further, many subsidiary occupations cannot be adopted by the marginal and small farmers owing to the fact that land is a pre-requisite for their successful adoption. One of the serious and unrelenting problems faced by the Indian farming households has been indebtedness. Institutional credit and enhanced agricultural output owing to the introduction of the new agricultural technology resulted in widespread indebtedness among the farmer households (Vaidyanathan, 2006). The agricultural activities are mainly seasonal affecting the repaying capacity of the farming community. Generally, borrow from non-institutional sources of credit at very high rate of interest and exploitative terms and conditions and consumptive unproductive loans have resulted in persistence of indebtedness. As the surplus income generated through crop cultivation is not assured and is often inadequate, the farmers are unable to repay the loan in time and the burden of debt goes on increasing. As a consequence, many farmers are committing suicides and this number is increasing day by day (Gill and Singh, 2006).

The Punjab state has presented to the world a show case model of agricultural modernization. This model was based on a set of measures aimed at technological up-gradation of traditional modes of production along with a set of compatible institutional and policy changes following which the agricultural production process of the state became highly mechanized and capital intensive. There are 4.77 lakh tractors in agriculture, 14 lakh tube wells, 6.23 lakh threshers and about 13 thousand harvesting combines in the state (PAU, 2015). The heavy farm investment made by farmers in the state is facilitated by easy availability of institutional credit through a widespread network of cooperatives and commercial banks. Having only 1.53 per cent of country’s total geographical area, the state caters to the food security of the nation by contributing about 34 to 75 per cent and 25 to 45 per cent of wheat and rice, respectively to the central pool of foodgrains. Punjab agriculture enabled the food production of the country to keep pace with the growing population by pioneering the process of agricultural modernization. In the economic context, Punjab is one of the most progressive states of India and the agricultural sector influences the pace of growth and development of its economy.

Punjab excelled in this agricultural development model conforming to certain pre-conditions viz. critical minimum size of the holdings, assured irrigational
facilities and overall entrepreneurial traits of the population. The benefits of new farm technology have been cornered much more by the large farmers as compared to the marginal and small farmers owing to viable farm sizes. Over the millennia, Punjab farming sector has undergone huge structural changes. During 1970s and 1980s the productivity of important crops grew significantly, the income of farmers’ improved, agricultural employment increased and the national food economy turned from being deficient to self sufficient. This period is often referred to as the golden period of agricultural economy of the state. However, the period of 1990s was critical for the farming economy of the state, due to severe insect-pest attack (Sidhu et al., 2005), particularly on cotton crop. The growth rate of agriculture sector of Punjab, which was 6.63 per cent per annum in the first decade of green revolution, decelerated to 4.74 per cent per annum between mid-1970s to mid-1980s. It further came down to 3.87 per cent between mid-eighties (Sidhu, 2002). During the period 1997-98 to 2001-02, the Punjab agriculture grew at an abysmal rate of 1.90 per cent per annum, which was less than the overall average growth (3.84%) of Punjab economy.

The green revolution helped the farmers to achieve high standards of living, which increased the financial liabilities regarding socio-cultural obligations. The indebtedness of the farming community in general and small peasantry in particular increased faster than their repaying capacity due to non-institutional debt incurred and their weak economic base. Historically, indebtedness of farmers has been a serious problem, as brought out by M.L. Darling in his classic work on Punjab’s rural economy in early 1920s wherein it is reported that“80 per cent of the Punjab peasantry was under heavy debt to the tune of 5-6 times of their annual income”. He famously remarked that, “Punjab peasant is born in debt, lives in debt and dies in debt” (Darling, 1925). The survey undertaken by the National Sample Survey Organization on rural indebtedness (1950-52) revealed that 63 to 78 per cent farmers of the Punjab State were indebted (NSSO, 1956) and that the farmers’ debt continued to increase. The indebtedness was correlated with the institutional loans which gave a fillip to agriculture during 1970s and 1980s. The decade of 1990s however, showed a slow down not only in institutional credit but also in the growth rate of agriculture (Singh, 2009). The distress in agrarian economy was aggravated
during early 2000s. The distress made the farmers to look for other avenues, as 40 per cent of the Indian farmers and 37 per cent of the Punjab farmers expressed their desire to leave farming, for it was turning to be a non-profitable occupation” (NSSO, 2005). The major victims of agrarian distress were farmers, especially marginal and small farmers which are finding it continuously hard to sustain on farming and are getting pushed out from agriculture (Gill, 1994). The average farmer in Punjab was indebted up to 64 per cent of his annual income but the farmers up to four hectares were indebted to the tune of 90 per cent of their annual income (Singh et al. 2007a). The indebtedness started approaching the stage of bankruptcy in which the loan amount was even more than double the total annual income of the farmers. This stage of economic position can be called as distress stage.

Agriculture in the state has become cost ineffective over a period of time due to intensive use of different inputs. The cost of cultivation per unit area of principal crops, i.e., wheat and paddy is the highest in the country. According to Kaur et al. (2001) “the cost of cultivation on small farms is high due to machinery and others costs as compared to large farmers. The on-farm employment for an average farm operator is not enough to keep him busy throughout the year. An average whole time farm operator in the state of Punjab operates on about two hectares of land. In case the entire land is under paddy-wheat rotation, it is estimated that these two crops generate a total employment of 300 man days per annum. On an average, two-thirds of this employment goes to hired labour leaving only 100 man days for the farm operator himself.” This shows that human labour employment has been declining in the agricultural economy of the state.

Degradation of natural resources is another manifestation of rapid development of agriculture in Punjab. The two most crucial resources, soil and water, are under stress because of excessive and non judicious use of chemical fertilizers and over exploitation of ground water for frequent irrigation (especially for paddy crop). The alarming decline in underground water table has necessitated that the farmers install submersible pumps at a huge costs which are usually beyond the reach of marginal and small farmers. The declining soil fertility and deepening
water table led to increase the cost of cultivation. Therefore, it was presumed that “the falling water table is not only threatening to seriously disturb the ecological balance which would make much of the Punjab land barren, but also affect the marginal and small farmers from making use of this common resource leading to tension and social strife” (Sidhu, 2002).

There is a decline in the proportion of cultivating workers in the total workforce of the Punjab state that have joined to the rank of unemployed and semi-employed workforce, which has in turn built a pressure on an already overcrowded agricultural labour market. According to the “law of the increasing division of the labour in society, small scale peasant agriculture must inevitably give way to large scale capitalist agriculture” (Thorner, 1966). Karl Marx (1963) endorsed the scenario by stating that “the peasant who produces with his own means of production, will either gradually transform into a small capitalist who exploits the labour of others, or he will suffer the loss of his means of production and be transformed into a wage worker”. Currently, the Punjab state has also reached at the stage where the small farmers are leaving out the farming. As a result number of operational holding has declined. During 1990-91, out of 11.17 lakh operational holdings, 2.96 lakh holdings (26.5%) were marginal farms and 2.04 lakh holdings (18.3%) were small farms in the state. The total land holdings declined from 11.7 lakh in 1990-91 to 9.97 lakh in 2000-01. As such, the number of marginal holdings declined to 1.23 lakh (12.3%) and that of small farmers declined to 1.73 lakh (17.4%). During the year 2010-11, of the total 10.53 lakh holdings, the number of marginal land holdings was 1.64 lakh (15.26 %) and that of small farmers was 1.95 lakh (18.57 %). “The overall decline in proportion of marginal and small holdings may be due to the operation of reverse tenancy and leasing out land by small land owners/farmers as farming is becoming less remunerative and there is hardly any scope left for improving the incomes from tiny holdings” (Kaur et al., 2001). Various studies have brought out from time and again that small farms are non-viable units on their own. Though the farmers may cultivate the most suitable crops or a combination of crops, but the returns will
remain small. It has been computed by the Commission for Agricultural Costs and Prices that in Punjab, the total net returns were only Rs 12000 for the two crops i.e. paddy and wheat in a year and were Rs 20000 after excluding the cost of family labour. The small farms are not viable and offer returns below the minimum wages/annum required for a living (Chandra, 2001).

In Punjab, small holdings are witnessing rapid change in costs and returns over the last one decade and they have reached such a stage where the future potential for improving returns of the farmers seems to be limited. The plight of small farmers in particular has become vulnerable as there is a lot of literature highlighting that the economic condition of these farmers is in a critical stage. The production pattern of marginal and small farmers is dominated by paddy-wheat crop rotation. The existing system has enhanced the dependence of marginal and small farmers on the market. Even the commodities, which can be produced at the farm for self-consumption at little cost, are being purchased at a higher rate. The liberalization of agricultural economy has been going to severely affect the marginal and small farmers because the support of the state with provision of assured procurement through minimum support price and input subsidies are presumably being reduced in near future.

With the advent of new agricultural technology in mid 1960s, the productivity of major crops in Punjab state increased which turned the national food deficient economy into food surplus country. As a result, income and employment of farmers increased. “Punjab is an agriculturally developed but land scarce economy. The number of operational holdings in the state decreased from 11.17 lakh in 1990-91 to 9.97 lakh in 2000-01 and slightly increased to 10.53 lakh in 2010-11. The maximum decline was observed in case of marginal and small farmers. The number of marginal and small farmers was about five lakh in 1991 which declined to about three lakh in 2001” (GoP, 2007). Majority of these farmers were pushed away from farming. “The plight of two lakh marginal and small farmers who left farming can be understood from the fact that about 22 per cent of these farmers joined the labour market either as agricultural labour or industrial wage workers” (Singh et al., 2007b). During 1981 the percentage of cultivators in the total rural workforce was 46.1 which declined to 31.7 in 2001(GoP, 2007). This shows that the employment
opportunity in the farm sector has squeezed, as a result, the income of the farmers declined. “The mis-match of input-output prices resulted in decline in the farm profitability. Consequently, majority of the farmers fell under heavy debt. The relative intensity of debt burden was very high among marginal and small farmers as per their hectare debt was 4-5 times than that of medium and large farmers” (Singh et al., 2007a). Three census based studies conducted by Punjab Agricultural University, Ludhiana, Punjabi University, Patiala and Guru Nanak Dev University, Amritsar revealed that “a total number of 6926 farmers and agricultural labourers committed suicides during the years 2000 to 2011 in Punjab” (GoP, 2011). Marginal and small farmers were the main victims of the economic distress. This scenario reveals that marginal and small farmers suffered the most due to agrarian crisis in the state.

Corporatisation of farming, diversification, new generation cooperatives, contract farming, etc. (Singh, 2000) are some of the options being suggested for the amelioration of these problems. Efforts although going on in this direction since 1986, when first expert committee for diversification of agriculture was instituted, have not yielded any significant results so far. Within the inherent socio-cultural rigidities like attachment with land and the land laws favouring the takers of leased-out land, the perspective of corporatisation seems to be bleak. Current distress is forcing the marginal and small farmers to dispose of their land which is aggravating their already deplorable economic situation. Simultaneously, in the absence of alternative employment opportunities, the shift of the marginal and small farmers out of agriculture may result in social chaos. Therefore, in the given circumstances, the solution lies in making small farm families economically viable by creating non-farm employment opportunities.

It was observed that with the growth in dairy-farm business, income of marginal farms improved from 43.40 per cent during 1987-90 to 54.60 per cent during 2000-03; and that of small farms from 31.00 per cent to 37.40 per cent. Correspondingly, the growth in income from dairy was 5.68 per cent against 0.81 per cent from crops on marginal farms and 4.70 per cent against 1.67 per cent respectively on small farms during the same period (Sidhu and Bhullar, 2004). With the adoption of dairy farming the income and productivity considerably increased
(Atibudhi, 1995). Therefore, alternative vocations like dairy farming in conjunction with existing agricultural models will enhance the income of the small farmers (Kaur et al., 2001). This indicates that there exists a scope to increase the income of marginal and small farmers by organizing their resources optimally. Therefore, it is essential to develop sustainable and viable farming systems particularly suitable for this category of the farming community.

From the above discussion, it can be concluded that although the state of Punjab has achieved a higher rate of productivity and consequently improvement in the level of living of the rural society, the benefits of green revolution have not percolated to the marginal and small farmers. Therefore, the status of marginal and small farmers in the context of the current agrarian crisis needs a detailed examination.

**Significance of the study**

The above discussion has highlighted many aspects of agricultural economy as a whole for the country and in particular the various points of concern in the agrarian crisis the Punjab is facing starkly. The reduction in operational holdings, depeasantization, indebtedness, low economic surpluses, degradation of natural resources, and above all ineffective policy interventions are issues which need detailed investigation. As elucidated, the proportion of small and marginal farmers in the Punjab state is high and hence the overall effect of this section of the farming community on agricultural and rural economy cannot be wished away. This group is the main victim of the agrarian crisis resulting in heart rendering farmer suicides. Keeping in view the dismal situation of small and marginal farmers in the context of present agrarian crisis, the present study is designed with the following specific objectives:

**Objectives**

i) To study the characteristic features of agrarian economy of the Punjab state;

ii) to examine the socio-economic profile of marginal and small farmers in different regions of the Punjab state;

iii) to assess the income and consumption level of marginal and small farmers in different regions of the state;
iv) to study the incidence of poverty and indebtedness and factors affecting thereof among marginal and small farmers of the state; and

v) to spell out policy implications of the study.