The review of literature helps to develop the clarity and comprehension in any study. So it is necessary to review the earlier studies. This would help the researcher to have better understanding of the perspectives of the research problem. By reviewing various theoretical based problems and empirical analysis based issues, the researcher would find out the research gap if any to facilitate to pursue his research work. In this sense, the researcher has made an attempt to review various studies of theoretical and empirical analysis supporting the present study and it is given in this chapter. In this study the review of literature has been classified into three broad categories. They are:

1. Agricultural crisis;
2. Agricultural credit; and
3. Indebtedness.

**Agricultural Crisis**

In recent years, Indian agriculture has been going through a deep crisis. The farmers of today are not only experiencing a slowdown in agricultural productivity and a rise in input costs but also facing the volatility of the market caused by increasing global integration. The following are the major earlier studies related to the agricultural crisis and they are reviewed briefly.

Venkataramanan and M. Prahaladachar (1978) highlighted subsistence oriented farmers in developing countries who are reluctant to make large changes in their cropping pattern though they do respond to changes in input costs, output prices
and crop yields in their acreage allocation decisions. Limited knowledge, credit restraints and uncertainty related to the future restrain the farmers from undertaking any significant changes in their area allocations even if there are prospects of attractive returns from alternative crops in their short run – this pattern of behavior is borne out by the slower adoption rate of HYV crops by small farmers. Most subsistence farmers grow food grain crops to meet their families’ requirement of food grains and the changes they are willing to make in the cropping pattern are conditioned by this requirement and their inability to undertake risks inherent in exclusively relying to returns from a single crop.

Gupta, R.P and S.K. Tewari (1985) examined the empirical relationship, within a static frame work, between crop diversification and selected socio-economic variables. For the purpose, the authors selected 60 farm households on the basis of simple random sampling. The study revealed evidence that large farms and wealthier farms are relatively less diversified. Tenancy farming (cash renting) discourages diversification. Farms with higher intensity and located nearer to the market are relatively more diversified. Farms which perceive greater business risk practice relatively encourage more crop diversification. Share cropping and family size does not affect the level of crop diversification. In general, farm diversification may take place as a mean of profit maximization through reaping the gains of complementary relationships or in equating substitution and price ratios for competitive products.

A.J. Singh, et al., (1985) studied the factors affecting diversification of agriculture in Punjab at the macro and micro levels through two measures, namely the herfindahl and entropy indexes. The herfindahl index was calculated for crops which are currently being grown in the state. Entropy index was also calculated for these crops namely paddy+wheat and other food grains, oilseed cash crop and fodders. The
study inferred that the Punjab economy is undergoing gradual diversification in favour of secondary and tertiary sectors, while the cropping pattern is getting gradually oriented towards food grains particularly wheat and rice as measured by both herfindahl and entropy indices and at the macro level, diversification is adversely affected by fertilizer consumption, intercrop value, productivity, variability, tractor density, skewness in the distribution of holdings and per cent cropped area irrigated. It is positively affected by market density and at the micro level, diversification is inversely related to size of farm, distance from the market and assets per hectare and directly related to family size daily income.

Nadkarni, M.V. (1988) in his article “Crisis of increasing costs in agriculture - is there a way out?” highlighted the goal of maximizing production irrespective of costs. Normally production is lower in the face of failure of rainfall and costs per unit of output go up. Farmers normally try to adjust the droughts either by not sowing or even where they sow by minimizing their purchase of market inputs so that risk of loss is there by minimized. But the official machinery seeks to counter this by pushing up fertilizer consumption through easy crop loans so as to compensate for failure of rainfall and prevent a steep decline in production. Of course, the cost to the farmer is tried to be reduced through huge subsidies on irrigation, electricity and fertilizers and procurement prices. Thus the challenge that India is facing in agriculture is not merely one of increasing cost but also declining growth rate and increasing instability.

Dhindsa, K.S, and Anju Sharma (1995) analysed the cropping pattern in Punjab and indicate a definite pattern of change which has occurred during the post green revolution period. The entire increase in total cropped area is mainly claimed by the cereals and among them the major share goes to wheat and rice. Pulses and oilseeds as a group have been losing area to other crops, despite the fact that rapeseed
and mustard among the oilseeds and moong and other pulses have gained some area. Other crops like chillies, sugarcane and cotton-desi have registered a decline in their percentage shares in the gross cropped area. This indicates that future efforts need to be directed towards increasing the productivity of other crops as the scope for increasing the gross cropped area in the state in future is very limited.

Ramesh Chand (1999) examined the emerging crisis in Punjab agriculture and pointed some of the assertions made to the underneath crisis in Punjab agriculture. They are (1) Economic condition of vast majority of farmers has deteriorated and cannot be improved with the existing cropping system and technology which has already been exploited to 75 per cent potential, (2) Family income of about 47 per cent of the farmers from crop plus daily lower than the income at lowest pay scale for unskilled workers in the state, (3) The water-table in the central Punjab is going down at the rate of 0.23 cm per annum, (4) In some parts, water table has risen from four to five meters which led to problems of salinity and water lagging, (5) Widespread deficiency of micro nutrient has appeared in the soil and there is increase in weed infestation, pest and disease outbreak, and (6) Burning of combine harvested rice straw is resulting in serious environmental pollution.

Da Costa, (2001) in his study highlighted that Indian agriculture is facing a crisis. Globalisation and structural adjustment programme and skewed policy approaches adopted by the successive governments coupled with other factors have hit the farmers hard. And from every other corner of the country, there are reports specific to conditions prevalent there, though indicative of a general malaise in agriculture that simply cannot be wished away. The proximate threat in the farm sector comes from the uneven monsoon precipitation of the last two years, which has raised the spectre of acute distress in certain areas. An immediate consequence would
be a sharp decline in the production of essential oilseeds such as ground nut, mustard and soyabean, to name the most likely affected crops. There is nothing inherent in this situation that is not amenable to rather easy policy response. The output short falls can be remedied by imports of edible oils and oilseed. And income deficiencies in the farm sector can be directly tackled by an augmentation of public spending in worse affected regions. The real potential market for Indian farmers is not abroad, not even among the urban rich, but among the masses in the countryside.

Deshpande, R.S., (2002) attempts to identify the agro-economic situations faced by the farming community and reveals that farmers’ distress is related to the management of their crop economy in addition to the social problems. Market inadequacy and crash in prices were reported as major reasons for farmers’ distress. The ups and downs in prices are an inevitable accompaniment of the marketing process. However a sudden crash in prices and consistently lower prices disproportionate to the price level of inputs causes agony and economic stress in the farm family. The time lag between price crash and market intervention is long enough to cause severe distress in the farming community.

Amit Kar, et al., (2003) studied the linkages between crop diversification and poverty in Indian states with the objective to examine the changes in cropping pattern in various states in India and found that by and large, area under superior cereals such as rice and wheat had increased rapidly while inferior cereals such as jowar, bajra and pulses had declined. In spite of various efforts made by the government for shifting in cropping pattern during post-green revolution period from rice and wheat to pulses, oilseeds and vegetables the result is not satisfactory. This has happened due to technological breakthrough and profitability from superior cereals to relatively much higher than inferior cereals and pulses.
Subrahmanyam, S. and P. Satya Sekhar (2003) examined the pattern of development of Andhra Pradesh agriculture and concluded that the agriculture sector of Andhra Pradesh witnessed steep deceleration in output growth by 2.3 per cent per annum. The 1970s was a period of broad based growth across regions and crops and the 1980s was a period of shifts in cropping pattern from low valued to high valued crops. The decade of 1990s witnessed deceleration in growth rates of yields of all the major crops like rice, cotton, chillies, tobacco, black gram and green gram. The deceleration in output growth has to be attributed to slow growth of public investment in agriculture.

Utsa Patnaik (2003) highlighted that the periods of economic crisis for agriculture in developing countries have been marked in history by declining incomes and worsening employment possibilities, resulting in adverse outcomes of loss of land rights against debt and declining nutrition levels for the poorer majority of population. The author argues that a similar conjuncture of agrarian crisis has become visible in recent years. An agrarian crisis is currently unfolding in India and in a large number of developing countries, involving a collapse of employment growth, falling export prices and a rising spiral of farm debt. The crisis is directly linked to the contractionary fiscal stance of governments undertaking neo-liberal reforms and to trade liberalization against the background of world recession.

Rao, V. M, and D. V. Gopalappa (2004) in their study pointed out that farmer distress could strike at the very roots of the chief source of agricultural growth, namely, farmer initiative and enterprise. It is known that when agriculture stumbles, the Indian economy loses its momentum. Further, farmer distress could destabilize the policy and create tensions and discord in rural society. A strong lobby of relatively better off farmers did emerge in the wake of the green revolution but they could be
co-opted by populist measures like minimum support price, loan melas and agricultural subsidies. The farmer distress now emerging appears to affect much larger numbers in the upwardly mobile rural intermediate strata. Populist measures would be inadequate to alleviate their distress and meet their aspirations. A larger part of Karnataka agriculture is located in drought prone areas. Despite this handicap, farmers in the state have achieved, over the recent decades, substantial shifts towards commercial crops like maize, groundnut and cotton have raised the yields of even poor man’s crops like jowar and ragi. The policy regime did help this growth but has fallen far short of the goal of growth and modernization of agriculture, with adequate development benefits to farmers. This regime along with the drought prone environment has turned farmers into victims.

Sukhpal Singh, (2004) examined the nature and magnitude of crisis in the farm sector in Punjab and pointed out that the economic condition of a vast majority of farmers, especially marginal and small farmers cannot be improved unless there are changes in the cropping pattern and technology of production. Diversification within agriculture is intended to stabilize income and employment in the farming sector. This diversification can either be in terms of variety of crops grown or technologies used for the same set of crops. The economic logic behind the promotion of processing and marketing activities was that to bring the dynamism to the agriculture sector either the cost of cultivation had to be lowered, by raising productivity or cutting costs directly or returns to the producers had to be raised by value addition or diversification.

Vyas, V.S, (2004) in his article “Agrarian distress: Strategies to protect vulnerable sections” explained that present policies and programmes neither protect a sizeable section of the agricultural population from natural and market induced uncertainties nor enable them to contribute meaningfully to overall growth of the
economy. It is possible, however, devise suitable instruments to compensate small and marginal producers for losses from natural calamities, designing organizational interventions to impart strength to their economy, lightening the interest burden from non formal sources of credit and encouraging rural financial institutions to take over the debts of the farmers from various sources. A similar change has taken place in the input structure. It is mainly influenced by the spread of modern technology and the relative prices of different inputs. Inputs such as fertilizers, insecticides, mechanical power and farm retained seeds. The purchase of inputs claims a large share of farmers’ cash expenditure.

Ramasamy, C., et al., (2005) analyzed the dynamics of land use in Tamil Nadu and estimated continuous decline in common lands, namely, the cultivable wastes, pastures and grazing land and barren and uncultivable lands over the last 40 years. The most disturbing trend is the very high growth rate in other fallow lands in the districts such as Chengalpattu, Kanyakumari, Thanjavur, Truchirapalli and Madurai, which are endowed with relatively more reliable surface water resource. This is due to the increase in the instability of area irrigated by surface water resource. Another reason could be the concentration of efforts and limited resources (credit, labour) on irrigated portion of lands thus neglecting the unirrigated areas. Their study also revealed that the increase in road facilities could play a crucial role in bringing out significant changes in the cropping pattern and hence profitability of farming there by increasing the chance of more area under cultivation. To sum up the trends in land use pattern in Tamilnadu during the last four decades: (a) there has been a continuous increase in land put to non agricultural uses which is a major competitor to agricultural sector for the demand for lands; and (b) with in agricultural sector, both
the total fallows and current fallows have shown an increasing trend while the net sown area and gross cropped area have shown a decreasing trend.

Vijay Sankar, P. S., (2005) studied the green revolution technology made in the rain fed agriculture of Madhya Pradesh and found out that the soyabean was introduced in Madhya Pradesh as short duration, kharif season cash crop. High prices and assured markets quickly promoted soyabean cultivation. This changed the cropping pattern of the state dramatically in favour of high valued cash crops at the expenses of low valued food crops like jowar and distributed to higher crop yields per hectare.

Goswami S.N and O. Challa (2006) in their study highlighted the cropping pattern of Meghalaya which had shown decline in area under food crops with progressive area shift towards non food crops. The shift in area was mainly from rice to fruits and vegetables crops. It was observed that the area under vegetable, plantation and fruit crops like ginger, areca nut, pineapple and citrus showed an increasing trend during the study.

Maithreyi Krishnaraj (2006) stated that in India the decline in agriculture dependent proportion of the population has been modest from 73.9 per cent in 1972-73 to 60.2 per cent in 2000. Besides the majority of them are subsistence farmers. The relative productivity of agriculture is less than one-fourth of that in non-governmental occupations. Though we do not have much open unemployment the growth rate of employment has lagged behind population growth. This phenomenon is attributed by some to increasing capitalization of agriculture, where man hours used per hectare have declined. Small and marginal farmers depend on agricultural labour on better off landowning classes for sustaining their livelihood. The author also explained that a large part of cultivation takes place in rain fed areas and coarse cereals are grown and
consumed in these fragile eco climatic regions mainly by the poor. Rain fed agriculture is characterized by low uncertain rainfall, low wages and higher levels of poverty, whereas in irrigated areas, the individual farmers could use improved technology, install pumps and introduce mechanisation.

Tirthankar Roy (2006) studied the historiography of agricultural growth in the interwar India and outlined an early discourse on the agrarian crisis in interwar India and makes two important points. First, the quality of resources, especially water and land was poor in large parts of the South Asia region and desperately so in the dry zones. Second, this factor accounted for the high private costs of investment in intensive growth and also involved high social costs resulting from extensive growth in the form of degradation of land, livestock and commons. Together, these two points explain the trajectory shift in agricultural growth early in the interwar period.

Vaidyanathan. A (2006) in his study revealed that there are growing disparities between the agricultural and non agricultural sector and marked a slowing down in the rate of agricultural growth. The human tragedy and socio economic crisis precipitated farmer’s suicides in several regions. It is entirely appropriate that the state should intervene with special programmes to give relief to afflicted families and drought proofing programmes for the affected regions. But the suicides and the factors underlying them are only a part of a more general crisis facing Indian agriculture. The author also pointed out that returns to farmers are also affected by prices. In the case of spices and rubber, competition has been mostly from new entrants with relatively low costs. The impact of an absolute decline in prices of many of these products combined with yield reductions due to failure of rainfall has been particularly severe and a source of considerable distress to farmers in regions growing these crops.
Humayun Masood and Kaynat Tabassum (2007) in their article, “Indian agriculture: Problems and prospects,” pointed out the overall growth of agriculture and allied activities was 3.1 per cent during the pre-reform decade from 1881-82 to 1990-91. During the crisis year 1991-92, it comes down to 1.5 per cent. A sectoral analysis of the employment scenario reveals that even in the reform period, agriculture sector had experienced decline in the annual growth rate of employment. The composition of investment (public and private) shows that the public investment in agriculture sector is on a declining trend in the reform period. The growth rate of public investment during the 1980’s was -3.49 per cent per annum, whereas during the 1990’s it was -0.43 per cent. The export potential of agriculture products is not encouraging during the last decade though a majority of Indian population is employed in agriculture.

Jitendra Singh (2007) pointed out the current national agricultural strategy which aims to attain a growth rate of 4 per cent plus per annum in the agricultural sector; growth that is based on efficient use of resources and conservation of our soil-water and bio-diversity; growth with equity, that is, growth which is widespread across regions and different classes of farmers; growth that is demand driven and stabilizes domestic markets and maximizes benefit from export of agricultural products in the face of global challenges and growth that is sustainable technically, environmentally and economically. The emerging expectations of food nutrition, employment and environmental protection calls for higher productivity per unit of land, labour, water and other inputs in an equitable and sustainable manner.

Munish Alagh (2007) studied Indian agriculture growth and change and he concluded that the agricultural sector is traditionally regarded as having low price responses. The sector was also subject to state policies, in terms of price and quantity
interventions in markets. Cropping patterns are different in different areas. But the technologies adopted in different areas with different seeds show different rate of agriculture growth.

Narayanamoorthy A., (2007) highlighted that the Planning Commission is fully aware of the current weaknesses of Indian agriculture. Yet it has fixed a target of 4 per cent growth rate for the Eleventh Five Year Plan (1992-1997) period with a specific road map to achieve it. The policy makers in the Planning Commission and the Ministry of Agriculture appear to think that they would be able to improve the performance of agriculture and achieve the growth rate fixed for the next plan period by addressing the vast yield gap and technology fatigue. Therefore, in the first place, policy makers must make efforts to convert agriculture into a profitable enterprise by making adjustments in the minimum support prices of various crops in consonance with the cost of the cultivation.

Radhakrishnan R., (2007) in the “Report of the expert group on agricultural indebtedness” concluded that current agrarian distress has two dimensions as (1) agricultural crisis; and (2) an agrarian crisis. The rootcause of the agricultural crisis lies in the neglect of agriculture in designing development programmes and in the allocation of development and plan resource. There is a consensus that agriculture needs to grow at 4 per cent per annum and that the growth should be pro poor. To sustain such a growth rate on a long term basis, cropping intensity and yield must rise substantially without further damage to ecology and environment. It would require additional investment in rural infrastructure, irrigation, agricultural research and extension institution building. The role of farmers associations and NGOs are very important in this regard. Needless to add that the resolution of the crisis of agrarian
relations requires concerted attempts to focus on marginal and small farmers in all public policies.

Ramesh Chand and S. S. Raju (2007) in their study revealed that management of risk in agriculture is one of the major concerns of the decision makers and policy planners as instability in farm output is considered as the primary cause for low level of farm level investment and agrarian distress. Despite progress of irrigation, improvement in infrastructure and communication the risk in agriculture production has increased in the country. The risk is much higher for farm income than production, as is evident from lower instability in area and higher instability in production. In some states farmers face twin problem of very low productivity accompanied by high risk of production. As with the passage of time neither technology nor any other variable helped in reducing production risk, particularly in low productive states. They also suggested that there is a strong need to devise and extend insurance products to agricultural production.

Ramesh Chand, et al., (2007) examined the trend in agricultural growth and factors underlying in agricultural distress and explores ways and means to accelerate it. The authors pointed out growth rates are lower than the growth rates in rural population and workforce employed in agriculture. The clear implication of this growth trend is that the per capita or per worker income in agriculture is declining. This seems to be one of the factors for rising rural and agricultural distress in the country. Pace of crop diversification slowed down in all the states except Tamil Nadu and Maharashtra. The authors also indentified the farmers in these states are shifting crop pattern away from cash crops to low value crops. The reason for this could be a stress on water resources and high level of market risk associated with high value crops.
Sreerupa Ray and Dhrubajyoti Ghosh, (2007) in their study, “Modern agriculture and the ecologically handicapped fading glory of boro paddy cultivation in West Bengal,” pointed out that after two decades, today it will be difficult to meet many farmers in West Bengal who are happy to cultivate the crop. The economic return from the crop is negligible; at the end of the season the farmers hardly have a surplus to sell in the market. But the data reveal an ever increasing trend in the area under boro paddy. The farmers do not have a better alternative for their already degraded land. It is not only the land but also water underneath, crops and health of the farmers that are being seriously damaged. Beyond economic hardship, farmers are ecologically handicapped and this exhausts their ability to make any profit.

Meeta and Rajivlochan (2008) in their study, “Rejuvenating agriculture with the help of the small farmer” listed some causes for the current distress of farmers in India. They are: (1) globalization, resultant competition and exploitation by big capital; (2) peculiar banking practices in India and the non availability of loans from formal sources for farming operations; (3) social and cultural distress among farmers; (4) fragmented holdings of an unviable economic size; (5) absence of adequate appropriate research in new methods of farming and exhaustion of current farm research to cope with contemporary circumstances; and (6) inability of the official machinery to provide appropriate services to the farmers and provide them with adequate succour. These have essentially involved, with some important exception pertaining to the involvement of big capital, turning the perceived causes of farmers’ distress on their head, insofar as it is practically feasible and hope that the distress will go away.

Mohana Kumar, S. (2008) analysed the situation of agricultural labourers in the crisis affected Wayanad, Idukki and Palakkad districts of Kerala state and pointed
out that the farming community in general needs more relief packages to remain in its
vocation. In Kerala, the agrarian crisis led farmers’ suicides which are rampant in
Wayanad, Idukki and Palakkad districts. Though the farm crisis has hit farmers and
agricultural labourers alike, the latter groups still remain totally neglected by central
and state governments. Even political and social organizations are yet to turn to them
and take up their issues. Labourers from these districts also fail in claiming their due
shares of benefits.

Raj Kumar and S.S. Chahal, (2008) who studied the shift in area, yield and
production of maize in Punjab with the objective to analyze the performance of maize
based production system and changes in cropping pattern brought about the
 technological development in Punjab. The decomposition analysis of maize
production shows that yield contributed positively but its benefits could not be
sustained due to continuous downward change in maize acreage especially in the post-
green revolution period. The assured market for paddy, which in turn ensures better
returns from paddy cultivation under present price policy has helped to squeeze out
area from maize in favour of paddy crop in Punjab. However the profitability plays a
major role in the adoption of any enterprise/crop and this has been proved true in the
case of Punjab agriculture. On the whole, the maize lost the ground in terms of its
share in gross cropped area in the state and was substituted by other relatively
profitable crops in the selected districts of Punjab.

Ranveer Singh, et al., in their study on irrigation system in Himachal Pradesh
revealed that irrigation has performed well in the state as apparent from data, on shift
in cropping pattern, intensify of cropping yield and input use. However, there is
marginal shift in cropping pattern in the command area of flow and tube well
irrigation system in the low hill region. Cereal crops in the command area of this
irrigation system dominate the cropping pattern. Apart from irrigation a shift in crop pattern depends on many other factors such as an advance in crop technologies, government price policy for crops, marketing infrastructure availability in the area and the design of an irrigation system.

Singh D.V, (2008) in his study on “Potential change in cropping system due to liberalization of economy in Himachal Pradesh,” emphasized that in the recent years cultivation of high value commercial crops on the basis of agro-climatic suitability in some potential regions has become popular and is expected to improve the economy of the region in general and small farmers in particular. Cultivation of commercial crops depends on the interaction of several natural, social, economic and cultural factors. Among these factors the availability of marketing facilities, transportation, industrialization, low density of population and comparative advantages are important. During the last one decade, the cropping pattern in the state has changed in favour of commercial crops, that is, it indicates that the commercialization process of agriculture in Himachal Pradesh is gaining momentum. Moreover, almost in all parts of the country the cropping system has changed significantly from the preceding years.

Surjith Mishra (2008), in his article “Risk, farmer’s suicides and agrarian crisis in India; is there a way out?” pointed out the crisis in Indian agriculture. An agrarian crisis which threatens the livelihood of those dependent on agriculture, particularly, the small and marginal farmers and landless agricultural labourers. Similarly an agricultural crisis that manifest through a deceleration of productivity and declining profitability which can be attributed to the neglect in the designing of programmes and in the allocation of resources towards agriculture. The main findings of the study are: (1) there has been a decline in the trend growth rate of production and
productivity of all crops in mid nineties; (2) there is an excessive dependency of a large section of population on agriculture; (3) with declining size of holdings; (4) under irrigated conditions green revolution had a great focus on rice and wheat; (5) decline of public investment in irrigation and other related infrastructure; (6) supply of credit from formal sources to the agricultural sector is inadequate; and (7) with changing technology and market conditions the farmer is increasingly being exposed to the uncertainties of the product as well as factor market. The study also concluded that risk management in agriculture should address yield, price, credit, income or weather related uncertainties among others. Availability of affordable credit requires revitalization of the rural credit market. There is also a strong case for regulating private credit and input markets.

Jeya Kumaravarden R., et al., (2009) in their study revealed that the performance of food grain crops in Tamilnadu has deteriorated in the post liberalization period due to decline in acreage and productivity. The commercial crops on the whole have faired well, recording high growth in both the pre and post reform periods, which confirms the prospects and potential of diversification in the state. Oilseeds and vegetables have recorded a dismal performance in post reform period, which is a cause of concern. Commercial crops, oilseeds and vegetables are associated with relatively high degree of instability, which calls for more risk mitigating measures to ensure consistent profitability. The study on acreage response of crops to various price and non price factors shows that the lagged price and the price of competing crops influence the extent of area allocated for a crop. Short run and long run elasticities of acreage show that farmers cultivating commercial crops adjust their cropping pattern very quickly in response to price. The decrease in area under food grains have negative implications on food security, but it could be overcome by
increasing productivity through narrowing the yield gap, use of efficient extension methods, optimum use of inputs and providing timely credit facilities.

Karam Singh, et al., (2009) present an empirical analysis of the status of farmers (particularly the small/marginal ones) who have left farming in an agriculturally developed state of Punjab. In Punjab state there are 20 districts with 141 development blocks. Of which, 2 blocks from each district were randomly selected. One village from each selected blocks were randomly selected. Thus in all 40 villages / village clusters were selected with the objective to examine the magnitude of shift from farming to non farming activity. The authors identified that the transformation of workforce from farming to non farming sector is either growth-led transformation or distress induced one. The growth-led transformation is related with the developmental factors like mechanization of agriculture, increasing employment and income, high education level, urbanization, development of secondary and tertiary sectors and even state intervention for generating employment opportunities. These factors are known as pull factors which contribute to pull the work force from farming to more lucrative non-farm activities. On the other hand, distress induced transformation is based on the hardship or crisis driven factors like falling productivity, increasing costs, decreasing returns and crop failure, unemployment and under employment; increasing indebtedness and even suicides. These factors are known as push factors, which push the agriculture workforce towards non-farm activities to eke out their livelihood.

Prahadeeswaran, et al., (2009) in their article examined the changes in cropping pattern and the degree of diversification at the district level in Tamil Nadu. This study relied on secondary data which were collected from various issues of season and crop report of Tamil Nadu. Information on area under 40 crops at district
level for the period between 1970-71 and 2005-06 were used to analyze the growth in area, levels of diversification and ranking the districts based on the diversification. Due to the simplicity in computation and direct interpretation, the Herfindal index was employed in this study to examine the level of diversification. Modified Entropy index was used to rank the districts based on the degree of diversification. And they pointed out that during the past three decades crop composition in the state has undergone a significant change. Among the districts in Tamil Nadu, Thanjavur, Kancheepuram, Pudukottai, Kanyakumari and North Arcot districts exhibited less diversification with the index coefficient of 0.54, 0.53, 0.31, 0.29 and 0.28 respectively, during the period 1970-71. Agriculture in Kancheepuram, Kanyakumari and North Arcot districts become more diversified as the Herfindal co-efficient decline to 0.48, 0.13 and 0.15 respectively for the above districts during the year 2005-06. In Kanyakumari district, millets, pulses, cotton, mango and tapioca witnessed a decline in area under these crops while coconut and banana gained their acreage significantly. However, small land holdings and low marketable surplus of farmers constrain them to elevate from subsistence farming to high value agriculture.

Sonika Gupta and R.K.Sharma (2009) studied the land use pattern in Himachal Pradesh with the objective of the dynamics and the trend of land use pattern at the state and district level. The study finds that the net cultivated area is decreasing and the area is being shifted to non agricultural uses. This might cause a serious threat to sustainable agricultural development, food security and livelihood. The study suggests that there is a need to allot barren and cultivable waste land to non-agricultural uses rather than the agricultural land. The government should make investment in water harvesting and technology development for rainfed agriculture so that farmers can opt for cash crops, wherever possible.
Rajasekaran, N., (2010) studied the micro-level decision making process of farmers in two diverse situations, namely, assured irrigated and rainfed regions of Tamil Nadu and found out that education, information and modernity play a deterministic role in all the cropping decisions and in the determination of other behavioral patterns. Hence paying more attention to these variables would enable the farmers to take sound decisions with their bounded rationality by removing the constraints of cognitive, social-psychological and infrastructural limitations. This also well equip them to withstand the overwhelming pressure of circumstances entangling crop failures which most of the times force them to end their lives due to imperfections in credit and labour market. Moreover, understanding and influencing these behavioural variables could ensure social and economically desirable acreage and supply response as most of the aggregate supply response studies also underscored. Further, the dynamics of supply behaviour of agriculture could also be reliably predicted.

Joachim Von Braun, et al., (2011) examined the paradox and challenges of Indian agriculture and pointed out that high-value agricultural products have higher employment elasticity and can be suitable for smallholders, if they can participate. In this situation, more of the energies and resources of the agricultural sector can be unleashed to produce the kinds of high value foods and products that are now in high demand by India’s growing middle classes and urban dwellers and that have new export market opportunities. Simply put, most farmers are not going to get rich by growing cereals when there are already national surpluses, demand growth is slow and world markets are glutted with the subsidized production of rich country farmers. Farmers must shift into high value products to increase their incomes.
Agricultural Credit

Credit is an important input in the development of agriculture. Credit played a critical role in the Green Revolution. However, in the recent past, since the initiation of financial reforms in India, the flow of credit to agriculture in relation to the demand for it has slowed down. Indian agriculture is also facing a crisis. The advent of new technology has raised input costs. Over the years, prices of fertilizers, seeds, diesel and inputs have gone up. The following are the major earlier studies related to the agricultural credit and it is reviewed briefly.

Ramachandran, V. K and Madhura Swaminathan (2001) evaluate rural credit policy in India to examine its effects on rural workers at the level of a single village. For this purpose census type socio-economic survey of 650 households in Gokilapuram village (i.e., Valley in the Theni district of Tamilnadu) in 1999, covering 908 households is studied. The village data show that changes in national banking policy have had a rapid drastic and potentially disastrous effect on the debt portfolios of landless labour households. Rural credit market in India abhors a vacuum: with the withdrawal of formal sector credit for the village poor, the informal sector has rushed in to fill the space. However the analysis show the access to low interest, timely credit and freedom from extra-economic coercion in the credit market is an essential component of the income and livelihood security and the general freedom of the rural poor. In any enlightened policy of rural credit, there is certainly a place of small scale, short term loans to rural lending.

Anita Gill (2004) attempts to analyse the various aspects of informal rural credit markets and revealed the dominant position of the moneylender in a new guise—that of a commission agent, who interlinked the credit market with output market. Credit is given on the collateral sale of crop to the commission agent who further sells
ит to government agencies. Payment on sale of crops is also made through commission agents, who deduct their loan amount before finally paying the cultivators. In this way the commission agents have displayed a greater foresight than institutional sources by not insisting on land as collateral. The rates of interest charged are exorbitant, but the cultivators are forced to pay it, because institutional credit is just not in adequate supply. To make matters worse cumbersome procedures are involved in obtaining a loan from commercial / cooperative banks. The result is constant exploitation of cultivators with many of them resorting to end their lives when they can no longer bear the burden of debt.

Shettly, S. L., (2004) has studied the distributional issues in bank credit and explained the neglect of agriculture, small scale industries and other informal sectors reflected in the sharp bias against small size borrowing. A distinct feature of the credit delivery record in the 1990’s has been the persistent and drastic declines in the number and amounts of small loan accounts. The author also pointed out that if the flow of bank credit to agriculture, small scale industries and other informal sectors have to be rapidly expended, some comprehensive and enduring strategy for credit delivery has to be put in place and the loss of momentum spawned by the neglect of developmental goals by banks now for over a decade has to be regained. It requires intensive and enduring programmes at strengthening the institutional credit structure in rural areas and instituting better credit delivery mechanisms are urgently needed.

Gagan Bihari Sahu and D Rajasekhar, (2005) carried out a study on banking sector reform and credit flow to Indian agriculture in terms of the share of the agricultural sector in the total net bank credit. The trends in credit flows to agriculture by scheduled commercial banks (SCBs) during the period 1981-2000 have been analyzed. This period is divided into two sub periods, viz., 1981-1991 (pre-reform
period) and 1992-2000 (reform period). The analysis brings out that the share of credit to agriculture in total net bank credit had significantly declined, especially after the introduction of banking sector reforms. Across the bank groups also, a similar decline was observed. In the case of cooperatives the situation was grimmer. More importantly, despite the fact that the lending target was fixed, direct and indirect finance was clubbed, interest rates were deregulated and lending procedure in the credit delivery system was simplified; the banks could not achieve the targets set for agricultural lending.

Sambasiva Rao, B., (2005-06) emphasized that change in agriculture is output mix and these changes are reflected in a shift of area from food grains to non food grains and within food grains from coarse cereals to finer cereals. The author also pointed out that during the last quarter of the century the area under food grains has declined by over 10 per cent. The decline in the area is a ubiquitous phenomenon everywhere. The land vacated by cereals is occupied by oil seeds, cotton, tobacco and sugarcane. By their very nature, these crops are mainly for sale in the market and whether changes take place in prices of these crops, it affects the farmers very profoundly. During this difficult period, policy interventions and institutional support to agriculture is necessary.

Gurmeet Singh (2007) studied the importance of rural credit in Indian agriculture and pointed out the policy on agriculture credit which aims at progressive institutionalization of credit agencies for providing credit to farmers for rising agricultural production, and productivity. The failure of the organized credit system in extending credit has led to excessive dependence on informal sources usually at exorbitant interest rates. This is at the root of farmer distress reflected in excessive
in Debtedness. There is evidence that farm debt is increasing much faster than farm incomes and the larger issue of the overhanging debt stock.

Rama Kumar, R. and Pallavi Chavan (2008) analyze the claim that slow down in the supply of agricultural credit (provided by the commercial banks including regional rural banks) has been reversed after 2004. Secondary data on banking from different publications of the Reserve Bank of India (RBI) have been used for this purpose and finds that contrary to the general perception that the credit revival began in 2004, the actual revival started after 2000. The increase in credit was to a large extent the result of a growing share of indirect finance, which, in turn, has been broadened in scope to cover many new kinds of farm lending. Moreover, even as direct lending to agriculture has also grown, there has been a sharp increase in the share of large-sized advances for financing agri-business-oriented enterprises rather than for the small and marginal farmers.

Jayasheela and Vishvanatha, (2008) in their article agricultural credit in the post WTO period explained that agriculture credit has a significant positive relationship with the agricultural output. In order to produce more, farmers need to spend more on modern inputs, which must be financed either out of saving or through borrowing. Capital requirement has increased manifold in agriculture due to increased use of purchased inputs like HYV seeds, fertilizers, irrigation, pesticides and machineries in agricultural production. India is following multi agency approach to provide necessary credit to the needy farmers. There are three major institutional agencies operating on the rural scene namely, cooperatives; scheduled commercial bank and regional rural banks. These institutions provide both short and long term loans. The credit given by these institutions for agriculture and allied activities is supposed to play a significant role in enhancing agricultural production.
Anjani Kumar, et al., (2010) attempt to know the status and performance of institutional credit to agricultural sector in India. The study is based on the secondary data compiled from several sources and it has revealed that the institutional credit to agricultural in real terms has increased tremendously during the past four decades. The structure of credit outlet has witnessed a significant change and commercial banks have emerged as the major source of institutional credit in recent years. But the declining share of investment credit in the total credit may constrain the sustainable agricultural growth. The quantum of institutional credit availed by the farming households is affected by a number of socio-demographic factors which include education, farm size, family size, caste, gender, and occupation of household. A large number of institutional agencies are involved in the disbursement of credit to agriculture. However, the persistence of money lenders in the rural credit market is still a major concern. The study has suggested simplification of the procedure for a better access to agricultural credit of smallholders and less-educated/illiterate farmers.

Singh, S. K and R.P. Singh, (2010) studied overdue problem in agriculture credit of Co-operative Bank and Gramin Bank in Mahihari block of Ghazipur district of Eastern Uttar Pradesh in India. The study is based on primary data collected from the 90 borrower farmers comprising marginal, small, medium and large farmers from five villages of Manihari block. Least square technique, regression coefficients and cobb-douglas production function were selected in estimating factors responsible for over dues. The study revealed that various factors like; unproductive use of loan, educational status, caste of borrowers, expenditure on farm and family living were caused for mounting overdue in the study area. The authors also suggest that the government and concerned departments need to overcome these problems of the financing institutions and the farmers.
Agricultural Indebtedness

One of the serious and unrelenting problems faced by the Indian farmers’ households has been indebtedness. Despite substantial improvement in agricultural output as well as distribution of credit through institutional sources since the introduction of the new agricultural technology, indebtedness among the farmers’ households is found to be widespread even today. While studying the India’s peasants, Darling (1925) pointed out “the Indian peasant is born in debt, lives in debt and dies in debt”. Though this was written about eight decades back, the problem of indebtedness not only remains true today but also it has been aggravated further in recent years. There are many reasons for the persistence of indebtedness among the farmers’ households in India. However, the following are the major earlier studies related to the agricultural indebtedness and it is reviewed briefly.

Ashish Bose, (2000) in article “From population to pests in Punjab American boll worm and suicides in cotton belt,” pointed out agriculture in Punjab is in a crisis and the crisis is deepening. Social development has not kept pace with economic growth. Green revolution, technology and mechanized agriculture have not really changed the mindset of the people. Over 85 per cent of the farmers are in debt. The modernization of agriculture has created cultural links of the farmers with the cities, resulting into a race for maintaining a good standard of living and incurring a large expenditure on consumption and social ceremonies. They are caught in the trap of high production costs and other living expenditure on one hand and low income on the other, resulting in a growing vicious circle of indebtedness.

Sidhu, H.S, (2002) in article “Crisis in agrarian economy in Punjab-some urgent steps” highlighted agriculture which continues to be the main stay of state’s economy which is in serious crisis. There is a huge backlog of unemployed youth. In
the absence of employment opportunities in the secondary or tertiary sectors, unemployed youth is falling back on agriculture. Unfortunately agriculture’s capacity to absorb labour force has also comedown drastically overtime. Therefore unemployment is growing day by day. Profit margin of the farmers comes down drastically. Farmers are finding it difficult to pay back the loans which they have taken at a high rate of interest. Machinery bought with these loans is lying idle for most part of the year. In addition to this, they have also taken loans from commission agents for consumption purpose at exorbitant rates. As a result, the Punjab farmers are highly indebted. Unable to pay back their loans and under pressure to alienate land or live stock assets, they are resorting to suicides.

Sukhpal Singh, (2006) studied the credit and indebtedness of the farmers in Punjab and highlighted many of the productive activities like motor burnouts, tube well deepening, and electric connection activation costs a lot of money. The high cost farming makes the need for credit for day to day expenses in the farm. On the top of it, the poor quality of inputs and high cost debt make matters worse. There is no doubt that the seasonal crop loan limits for different crops are inadequate to meet the higher and increasing cost of production which arises the indebtedness of the farmers. The debt related suicide may be promoted by some other event like domestic discard, tension, use of intoxicants, and so on.

Subba Rao, K.G.K., (2006) examined the differences in the estimates of the incidence of debt and the extent of indebtedness, emanating from the two surveys, Situation Assessment Survey (SAS) 2003 and All India Debt and Investment Survey (AIDIS) 2002-2003 were conducted in the 59th round of the National Sample Survey Organization (NSSO) in 2003. The author observed that the difference was mainly due to the concepts, definitions and the methods of data collection in the two surveys.
Thus a comparative picture of the indebtedness of the farmer/cultivator households emanating from the two surveys of the 59th round of the NSSO showed wide variations in the estimates. As indebtedness is an area of importance for formulating schemes of financial assistance to the weaker sections in the agricultural sector, it is absolutely necessary to adopt uniform concepts and definitions.

Amrit Patel, (2007) pointed out that All India Debt and Investment Surveys revealed that farmers’ dependence on informal sources of credit sharply declined from 92.8 per cent in 1951 to 36 per cent in 1991. More importantly, role of moneylenders declined from 71.6 per cent to 17.1 per cent and that of banks (co-operative and commercial) increased from 3.5 per cent to 55.3 per cent during the period. However, according to All India Debt and Investment Survey (2000-01), the share of institutional credit abruptly declined to 57 per cent in 2001 from 64 per cent in 1991. Moreover, debt sourced from moneylenders sharply increased in overall share of rural debt from nearly 18 per cent in 1991 to nearly 30 per cent in 2001. According to recent survey, formal institutional credit provision in India now accounts for just 27 per cent of total cultivator debt. Moreover, nearly 90 per cent of households reporting no debt, either formal or informal are headed by small and marginal farmers.

Jeromi, P.D., (2007) in his article, “Farmers indebtedness and suicides impact of agricultural trade liberalization in Kerala,” highlighted that the agricultural sector in Kerala has historically been dominated by commercial crops such as coconut, rubber, tea, coffee and spices. With more market orientation and better profitability of cultivation the share of commercial crops in total area under cultivation in the state has been rising at the expense of food crops such as rice and tapioca. The area under major cash crops accounted for nearly 80 per cent of the cultivated land in Kerala which is under perennial tree crop like coconut, rubber, tea, coffee and pepper. These
crops have long gestation periods ranging from three to four years for pepper, cardamom and tea and about seven to eight years for rubber and coconut. Once the gestation periods is over production continues for decades. The sluggishness in production and decline in prices, inter alia, due to lower exports and higher imports, increased the debt burden of the farmers. This is due to the factors like concentration of cash crops, higher value of assets per households and availability of credit through the good network of both formal and informal credit agencies.

Sidhu, M.S., (2008) examines the agrarian crisis in the context of globalization of the Indian economy, and questions whether this crisis was due to globalization or other factor. The study finds out that the farm sector started showing a slowdown in the post reform period. Farm suicides, growing indebtedness and stagnant food production coupled with declining crop productivity signalled a farm crisis that can no longer be ignored. The average yields of various crops are low across the country. Indebtedness is one of the major factors for farmer suicides and the agrarian crisis in the country. Out of 89 million farm household in India, about 43 million farm households (48.6 per cent) were in debt in the year 2003. The farm indebtedness is the highest in Andhra Pradesh (82.0 per cent) followed by Tamil Nadu (74.5 per cent) and Punjab (65.4 per cent). The major reasons for farm indebtedness are crop failure, over capitalization, rising cost of cultivation, almost stagnant minimum support prices for various crops in general and wheat and paddy in particular and small size of holding. The scenario of agrarian crisis in India clearly indicates that its roots are within the economy and globalization is not alone responsible for it. To put the entire blame on globalization for all the ills of the agricultural sector is a myth, not a reality. The author also suggests the policy planners at the national and states level may formulate policies related with the agricultural sector keeping in view the interest of marginal
and small farmers who constitute about 82 percent of the total cultivators in the country. Debt waiver is not a solution to the problem of farm indebtedness and agrarian crisis.

Kareemulla, K., (2008) has studied bank credit for agriculture versus farm indebtedness in Uttar Pradesh. For the analysis the author collects secondary data on credit flow from Reserve Bank of India, Lead Bank Office and NABARD reports. To assess the causes for indebtedness the primary data has been collected from farmers of Jhansi district. Finally the author finds out that the per hectare credit flow is increasing in Uttar Pradesh and India as a whole, the level of credit in the state is lower at three fourths that of the country. This is partially attributable to lower banking network and higher indebtedness in Uttar Pradesh. Considering the fact that Uttar Pradesh accounts for over 20 percent of the country’s agricultural production, there is a need to augment the credit flow to the sector in this state. Coupled with this default of loans caused by crop failure and diversion of funds for non-productive purposes acts as the stumbling block in the smooth flow of the credit of agriculture.

Balasaheb Vikhe Patil, (2008) studied the agricultural indebtedness to address the problems in all its dimensions. Agricultural indebtedness is the result of a variety of factors operating together. The declining profitability in agriculture, rising commercialization with weakened support systems, decline in public investment, ineffective and inadequate risk mitigation arrangements, absence of any technological breakthrough in reducing costs / increasing productivity, the rising input prices, intensive rural institutions and extremely poor quality and coverage by the formal credit institution, and lack of stringent action in case of supply of poor quality of inputs and the periodic natural calamities have contributed towards the manifestation
of agrarian crisis in the Indian economy which otherwise has been doing extremely well.

Yogeshwari, S and R.S. Deshpand, (2010) studied the rural indebtedness and distress in Karnataka. The main objective of this paper is to provide concrete evidence in favour of the hypothesis that indebtedness is certainly a trigger of farm sector distress, but it is not the only ‘raison d’être’(the most important reason). Indebtedness is a starting point in understanding distress, especially in the case of Karnataka. Changes in the pace and composition of agricultural credit emerged as a significant issue in the context of farmers’ distress throughout the country. The deceleration in growth accompanied by distributional problems arising out of the special problems of small and marginal farmers and landless labourers accentuated the problem of indebtedness. One more factor that has exacerbated the situation in Karnataka is the drive towards high value commercial crop. The state has witnessed considerable changes in the cropping pattern leading to substantial reduction in area under food grains and significant increase in area under commercial cash crops, which no doubt brought prospects of a big increase in yields and income of farmers, but along with it came high volatility and risks. Further, farmers’ dependency on farm income for their survival is high. Out of 100 indebted farmer households, 60 per cent of households had ‘cultivation’ as a source of income in Karnataka. The other important manifestations of the crisis, along with the deceleration of agricultural growth, were the increase in the costs of inputs, thereby, adversely affecting the profitability of agricultural production.

Sumanta Banergee, (2012) studied the agricultural sector in West Bengal and revealed that the administrative machinery dilly-dallied (take a long time in making a decision) in buying paddy from the farmers at the officially fixed support price. This
helped the middleman and rice mill owners to distress sale and then makes a profit by selling them in the open market at higher price. Meanwhile, many small farmers left with meagre earning after the distress sale and unable to pay back the debt incurred in buying inputs. This class of small farmers will be gradually marginalized by taxation policy. Small farmers already impoverished by the distress sale and squeezed by debts are now threatened by this new imposition of tax. They may be forced to sell their land to land sharks, who in turn will sell to corporate business house.

Thus a review of related literature shows that most of the studies are related to agricultural crisis i.e., deceleration in agricultural growth (sluggishness in production and decline in prices, lower exports and higher imports), along with the distressed state of cultivators. Few studies about credit find that the functioning of the rural cooperative credit institutions has deteriorated in many parts of the country. Some studies are also related to the debt burden of the cultivators. This shows that most of the earlier studies are related to the macro (national) level and only few studies are related to micro (State/Districts) level. But there are no studies at the State/Districts level of Tamil Nadu about the agricultural crisis, credit and indebtedness of cultivators. Though there are deceleration in agricultural growth along with the distressed state of cultivators and growing need for credit in Kanyakumari district, the researcher has formed a research gap and studied the agricultural crisis, credit and indebtedness among the cultivators in Kanyakumari district.