INTRODUCTION

Transformation of Punjab agriculture from subsistence to commercial was not a rash decision but part of economic planning which was initiated in 1951. In the first plan period the whole attention and a big chunk of central resources were directed towards the agricultural development. Food sufficiency was a distant dream for a newly independent country and to accomplish the goal of food for all adoption of green revolution was more of a compulsive necessity than an option. Because of fertile soil, colonial era canal network and predominantly agrarian population, Punjab was chosen by the Central government as the site for the experiment. The growth rate of agriculture has shown upward trend till 1980’s after which it started declining. Once the food bowl and granary of India is now reeling under severe agrarian crisis. The euphoria that began with the green revolution putting Punjab in the lead of states with overflowing granaries and increased farmers income was eroded within a matter of decades, so plunging the Punjab farmers in particular and Punjab economy in general into deep gloom. High level of borrowings, depleting incomes, excessive expenditure on inputs coupled with inability to repay loans have brought the Punjab farmers where they are choosing death over debt.

Given the various long term ramifications of the urgent problem of farmer distress, swift and holistic policy changes are imperative.

POLICY MEASURES REQUIRED TO ARREST THE AGRARIAN CRISIS

The problem of agrarian crisis is multi-dimensional. The agrarian crisis in the form of rising expenditure and falling income, necessity to borrow to meet the crisis, eroded the repaying capacity leading to indebtedness, public shame and harassment at the hands of lenders and the only solution available in the form of suicides. The remedy too, thus has to be multi-pronged. Following are the various policy measures that can help to arrest the problem of farmer’s distress.

Agricultural Diversification :-

Agriculture in spite of the fact that Punjab remained a forerunner in the green revolution and earned the reputation of agriculturally advanced state, it has been overwhelmed by crisis situation in the recent years. The intensive mono-culture of wheat and paddy has made the Punjab agriculture ecologically as well as economically unsustainable. The consequences were felt in the form of stagnation in output, declining farmer’s income, declining productivity, environmental degradation, depeasantization and suicides by farmers (Chand, 1999)

These are the issues that have become a cause of concern and need immediate action. As the growth in market demand for wheat and rice has considerably slowed down, the time has come when Punjab farmers should be discreetly helped to shift land and other productive resources from under wheat paddy rotation to other crops. The overdependence on the wheat paddy rotation must give way to more sustainable crops and other farm enterprises. No doubt according to resource endowments and weather condition these two are the least risky crops compared to other crops. Farmers should be provided with economically more paying and less risky alternatives to get out of this cycle of wheat and paddy. Diversification from existing wheat/rice monoculture to alternative crops has been suggested by several economists in the wake of aggravating crisis cited in Human Development report Punjab.

"The state government is proposing to shift towards value added/water light crops such as fruits and vegetables, maize, oilseeds, pulses and floriculture, and to revive allied occupations such as dairy farming, poultry, piggery, mushroom cultivation, bee keeping and others by launching a program called 'second push in Punjab Agriculture and Allied Sector'. The program aims to create a voluntary shift in the cropping pattern, introducing income/employment – generating, productivity oriented programs directly benefiting the farmers of Punjab; and safeguard the valuable and scarce resources of land, water and environment from further deterioration.” (HDR, 2004) For that the State government can widen its price policy to cover other crops as well. Good prices and easy procurement policy can definitely help in shifting farmers towards the production of other crops rather than wheat and rice. Research efforts have to be focused on fruits, flowers and vegetables for developing viable alternatives. The system of incentives and disincentives should be adopted to mentally prepare the farmers to other alternatives. The Government can introduce special subsidy package to achieve the objective of diversification.

Value-addition in farm products :-

Globalization has ushered dynamism to all the sectors and agriculture is no exception to this with the increasing globalization, increasing trade opportunities, cost competitiveness, urbanization and growing income, there is increase in demand for processed and semi processed foods. Such an increase is a positive indicator for the growth of high value commodities, thus there is an ample scope for agro processing industry to develop in Punjab and open new avenues of development. This agro industry will not only develop the industrial sector of the economy but at the same time it will also boost the growth of the agriculture sector by creating demand for agriculture output as its raw material (Singh et al, 2013) Linking agriculture production with agri-business activities has been suggested by several economist to over-come mounting agrarian crises. Emphasis needs to be laid on setting up of multi-commodity small agro-processing centre's in rural areas for primary processing and value addition. Instalation of Agro processing unit is considered necessary for:

(a) development of industry to provide employment to the unemployed rural youth and
(b) to overcome the wastage caused due to poor storage and wrong handling of farm produce.
At the times of good harvest, excess produce can be properly processed to reduce the wastage. The value adding processes ranges from simple preservation like drying, grading and storage of output to production of high value products such as manufacturing of textile, paper, rubber etc through modern capital intensive methods. The state government has taken many steps to diversify the Punjab agriculture towards the production of high value crops. However the high value crops like fruits and vegetables are highly perishable in nature and the farmers have to decide immediately at the time of harvest to dispose of the produce. Due to lack of adequate facilities for post harvest handling of high value crops, quantitative and qualitative and losses of extremely variable magnitude occur at all stages. By improvising the post harvest technology these losses can be curtailed giving larger benefits to both the farmers and consumers. The major high tech agro/food industries involved in value addition to agricultural production in state are Punjab Agro Juices limited (PAJL) at (Hoshiarpur and Abobhar), Glaxo Smith Klein at Nabha, Nestle at Moga, Nijjar Agro foods at Jandiala and PepsiCo Agro Foods at Zahura (Hoshiarpur) etc. Although Punjab is a leading agrarian state of the country the food processing industry is not that well developed and is limited to grain processing like rice mills, flour mills, oil mills and cotton ginning. State government should come up with a more extensive policy to make the processing units more competitive for processing the state produce for value addition.

Encouragement to Organic farming :-
Agriculture in the state is entering the next stage of development which involves high productivity and high value product. Intensive cropping and larger application of chemical fertilizers to get good produce year after years have caused mining of soil nutrients reserves leading to depletion of soil fertility and emergence of multi nutrient deficiencies of macro and micro nutrient. Non judicious use of fertilizers poses a serious challenge to soil health. In order to address this problem, there is a need for whole hearted efforts to improve nutrient use efficiency and to improve soil health. The one very valuable measure is encouragement to organic farming by application of farmyard manures, compost, green manuring to supplement inorganic fertilizers. The use of chemical fertilizers in the state has gone up many times from 2,13,000 tonnes in 1970-71 to 17,78,000 tonnes in 2007-08 (Statistical Abstract of Punjab), more of the basic elements of soils have been extracted than what have been added. The organic carbon in soils which determines the availability of Nitrogen, has been reduced to very low and inadequate levels, because of the very low application of organic manures. As a result the soils have become poor in Nitrogen. The Phosphorous content has also come down during 1970’s and 1980’s because of less application then required for intensive wheat paddy rotation. The fertility of the soils which has diminished because of deficiency of vital micro and macro nutrients can be regained with the introduction of Organic farming. The farmers should be educated about the inclusion of legume green manuring crops in the cropping sequence, so as to improve the potential of the soil to sustain high yields in addition to saving Nitrogen and taking care of micro nutrient deficiencies.

Need Based Subsidies :-
Subsidies are among the most powerful instruments for manipulating or balancing the growth rate of production and trade in various sectors and regions and for on equitable distribution of income for the production of weaker sections of society. Government of India on the recommendations of food grain price committee (Jha Committee) started the scheme of subsidies on purchase of various agriculture inputs to facilitate the farmers to adopt new agriculture farm inputs like high yielding varieties of seeds, fertilizers farm machinery and tube wells etc. These helped in raising the agricultural output but after some time with the increase in their amount they are often criticized for their financial burden. They are often applied in ways that benefit mostly richer farmers. The free power to the farmers in Punjab had a negative impact on the sustainability of agriculture as it has implications for depletion of underground water. Fertilizer subsidy led to application of higher dozes of chemical fertilizer thus leading to deterioration of soil health. It is being observed that at national level during pre as well as post liberalization period, the total subsidies have increased at different rates. In 2008-09 the total subsidy have increased by 94.38 times than that of 1980-81, where as fertilizer subsidies 29 times, electricity subsidy 75.24 times and irrigation subsidy by 36.86 times in 2000-01 as compared to pre liberalization period (1980-81) (Kaur Rajwinder et al, 2012). To arrest the increasing agrarian crisis there is a need of fair distribution of subsidies. There should be some criteria to give away subsidies. State government should rise above the vote bank politics and should frame rational policy in which small size category farmers who are not actual beneficiaries of subsidies, could get more. Subsidies should be given to those who actually need, like small and medium size category farmers. Subsidies should be such that encourage the farmers and empower them to do farming in most efficient manner.

Improved Marketing Practices :-
The onset of green revolution had given a tremendous boost to the economy by bringing sharp increase in incomes, productions and productivity for all classes of agriculturist. But the beginning and deepening of economic crisis in agriculture has shrunk the incomes of farmers. The reason behind emergence of this phenomenon is increased cost of production and near freeze in minimum support price. Besides advancement in farm technology State government should also make an effort to bring improvement in market infrastructure through ensuring better returns to farmers. The procurement of wheat and paddy can be termed as satisfactory, but the marketing of other crops is far away from satisfactory. In case of wheat and paddy farmers are assured of marketing and prices, however there are no such arrangements for other crops like maize, pulses, Oil Seeds, Fruits & vegetables. Other than this, farmers also bear huge losses because of poor storage and wrong handling of their produce. Due to lack of sufficient storage, a large quantity of stored wheat and rice is damaged by rain insects and pests etc. It is expected from the state government to ensure quick procurement and assured and remunerative price for the crops. A rational agricultural price policy should be formulated in line with the other crops.

(F) Adequate availability of credit from Institutional sources :-
Agriculture is in deep crisis and the farmers are reeling under debt, which is one of the several contributory factors causing them to commit suicides. Rural indebtedness has emerged as a serious problem in the state. The magnitude of rural indebtedness is a serious concern both for the government and the farmers. In the agricultural set up, borrowing is a necessity- it is neither objectionable nor a sign of weakness. It is the failure of the institutional set up in supplying credit commensurate with demand that is mainly responsible for the crisis and its manifestation in the form of suicides. The magnitude of indebtedness of cultivator households in Punjab was 28.5 percent in 2003 (NSSO, 2003) and it increased to 40.19 percent in 2012 (NSSO, 2013) The incidence of indebtedness amongst cultivation households with outstanding loans too has risen sharply. Against the average amount of cash loan per cultivator household in 2002, the average amount of debt in 2012 was 856 times. Loans from non-institutional sources contribute to the debt burden. Their share is estimated to be 40.22 percent in December 2013. These sources charged and exorbitant 18 to 36 percent of interest on two third of their loans in rural areas, while institutional sources charged a maximum of 12.5 percent rate of interest on 97 percent of their
loans to these households. The high rate of interest of these non-institutional sources has further aggravated the woes of farmers. Government should come up with a more holistic approach to nail these non-institutional sources of credit. Centre and State Governments can impose regulations on money lenders that limited the interest rate, instituted a ceiling on payback amounts, protected against land alienation and shielded farmer’s primary assets. Debt conciliation Boards may be set up as dispute resolution mechanism in situation where loans have been given at high interest rates and have no prospect of repayment. While the broader legislation regulating money landing might need to come from the centre, the State government’s active involvement will be crucial for its enforcement and effectiveness.

CONCLUSION

Though no one can deny the fact that adoption of Green Revolution was a compulsive necessity and not mere an option amidst the food crisis the country was facing at the time of independence. But Punjab paid the price of this revolution in the form of deteriorating environmental conditions, depeasantisation and farmers suicides. The state has to think about the long term solution to make Punjab agriculture economically and ecologically viable with the adoption of a medium and long term plan which includes appropriate policies and programs towards sustainable development of agriculture.