



# Changing Scenario and Multidimensional Crisis of Agriculture in Punjab

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## Abstract

The state of Punjab is facing numerous challenges in terms of socio-economic conditions, political negligence, and a failing agriculture sector. The youth is grappling with unemployment and a lack of meaningful work opportunities, while the education system has become irrelevant in the changing landscape. Farmers are resorting to suicide as agriculture remains unprofitable, and the depletion of underground water levels poses a threat to human survival. The state is plagued by drug addiction, a deteriorating law and order situation, and declining per capita income compared to other states. Moreover, there is a lack of value addition at the village level and significant marketing problems for agricultural produce. The healthcare infrastructure, transportation, electricity, industrialization, rural roads, and environmental issues are also in a dismal state. The article highlights the dissatisfaction among various segments of society, including farmers, students, small traders, and educational institutions. The outdated agricultural development model, known as the Green Revolution, has led to overexploitation of land and natural resources, leaving Punjab's farmers heavily in debt. The groundwater level has been depleting rapidly, raising concerns about water scarcity. The article emphasizes the need to diagnose the root causes of these issues and focus on viable solutions to save Punjab's agriculture sector.

**Keywords:** agriculture, farmers, Punjab, crises, resources.

## Introduction

The Punjab state is in very difficult mode regarding its socio-economic conditions and the political parties ruling the state in the past have not bother to ease it. The agriculture sector is in crisis but it has to be successful for the survival of human race on the earth. The youth is unemployed and no work worthwhile to do. The education system becomes irrelevant in the changing scenario. The farmers are committing suicides as agriculture remained unprofitable. The underground water level which is the first requirement for living, is depleting at a very fast rate. Drug addiction, intoxication, worse law and order situation are all prevailing at present. The per-capita income is going down as compare to other states in the country. No value addition at the village level and huge marketing

problems of agricultural produce. Other than these, health infrastructure, transportation, electricity, industrialization, rural roads for connectivity, environmental issues etc. are all in a bad shape. It becomes pertinent to discuss it in detail in the light of changing political scenario of policy frame work, political ideology, resource endowment and many more other issues. Efforts are being made to include various factors affecting the present crisis of farming and to suggest some remedies for the survival of agriculture sector. As it is the core sector and food provider for the masses, it is our duty to keep its future safe, otherwise we will perish. The future of human race is directly and very closely related agriculture for survival.

The state is under severe crisis which is multidimensional in nature. Almost all segments of our society are dissatisfied with the present working and implementation of various government policies and happening in the social fabric. Farmers are not happy with the prices they are getting for their crops and other enterprises. They are worried about the compensation due to various natural calamities to their fields. Most of the time, they are denied their dues. The students are not happy as they are not having assured jobs after completing their degrees and courses in the universities and colleges. The small traders are worried as sales going down day by day and they are almost sitting idle in their business establishments. The colleges and universities are worried as the students are going abroad for studies and their huge infrastructure and very heavy investment became redundant. Actually, every sector is facing problems relating to socio-economic fabric at present and in this article, efforts are made to analyse it in depth. The remedies are also to be discussed to some extent in the current scenario.

Punjab is basically agricultural state dominated by its brave farmers, ever ready to accept challenges on various fronts. It always remain in news for good as well as bad incidences. The crisis of agriculture sector is very familiar and differentiate the state from the other parts of the country. The state of Punjab is known for being India's breadbasket and produces around two-third of the food grains procured annually in the country, a remarkable feat for a state that occupies only 1.5 per cent of the country's geographical area. On the one hand, it is very positive for the country as a whole from food security angle, but on the other hand, this has led to over exploitation of land and other natural resources in the state. Moreover, this intensive use of inputs in producing such a large proportion of food grains resulted into a very serious problem as a result of which Punjab's farmers are today heavily in debt than farmers in any other state. Though relatively small, Punjab grows about 20 percent of the wheat produced in India and more than 10 percent of rice.

This article is not written while sitting in the library consulting books and journals on the subject, rather it is written through the internal feeling and individual experience of the subject. The interaction with the farming community and work experience in the field provided very deep insight which is helpful in the proper understanding of the current issue. Watching and observing very closely the ground realities of agriculture sector over a very long period is the main source of knowledge to write it. The new model of agriculture known as 'Green Revolution' was introduced long back and it was in its peak during mid-seventies. Moreover, it resulted into the depletion of underground water, stagnation of agricultural productivity, declining farm incomes, increasing indebtedness and farmer suicides along with changing government policies against the agriculture sector. All these happenings forced to think about the present agricultural model, which becomes redundant in the present scenario.

But now the same water is depleted by its overutilization and needs a comprehensive policy for its revival. The condition is so serious that about 80 percent of its developmental blocks are termed as black zones because the extraction of water is much higher than its recharge. The recent report on Punjab's groundwater resources pointed out that groundwater extraction has increased from 149 percent (of naturally available recharge) in 2013 to 165 percent in 2018, and the state has maximum percentage of wells showing groundwater depletion among all states in India. It is very sad to note that the groundwater levels have been falling swiftly since long, and nobody bother about it. The need of the hour is not debating the issue in different forums, rather to diagnose the root cause of the problem and focusing on the possible solution. Water is not only needed for food production, but for drinking and other uses as well. Saving and preserving water means saving the human race on the planet.

Now let's try to find out that how the present model of agricultural development in Punjab become outdated and needs a change in the present-day changing scenario. The present model was designed for a different purpose and with different type of resource endowments. India was a food deficit country after independence and imported lot of food grains for dietary needs of large population. The food grain production was not sufficient to provide enough food to the masses and efforts to increase it were futile because of very old techniques used by the farmers. So, the search for a new technology was on and the Indian government was looking for new technology everywhere. Our scientist and universities were working in this direction to find a workable solution. The another very serious problem was relating to very high international food grain prices at international level due to very high demand from India. So during the mid-sixties, the solution in the form of 'Green Revolution' was found and adopted by the Indian government and selected North India, especially the states of Punjab, Haryana and western Uttar Pradesh for it on the basis of better agricultural infrastructure.

India adopted this model from USA which is having totally different type of situation and resource base. In US, capital was a surplus resource whereas labour was in short supply. They need mechanization of every agricultural operation. Moreover, the farm size was also very big there to support the mechanization at a large scale. In India, the situation was just the opposite as we are having labour surplus country and capital was in short supply. Further, the size of operational farm was very small to hold the new technology at economically viable level. So, there was completely a mismatch in the existing resource endowments and the new technology adoption. No doubt that it resulted into huge production of food grains but it failed on sustainability issue. All the present-day problems are inbuilt in the agricultural development model which we have adopted about 55 years ago. To solve the problems and save the country as well as our farmers from the present-day crisis, redesigning of our agriculture model is required. Sincere and affordable efforts are made in this direction to work out a sustainable and long-term strategy to reconstruct our present model.

It is very clear that mode and type of agricultural development has taken various dimensions. The basic model of agriculture was for subsistence of food supplies to the human race and not for the commercial purpose. Since long, agriculture was considered as a way of life rather than a business. But with the development of technology, open up of the new markets, use of digital information, agriculture takes a turn towards more production and specialization of different products in different areas on the globe based on the relative cost advantage and resource endowment availability. This further give rise to inter-country and intra-country trade to

fulfil the human requirements. So the story of agricultural development goes hand in hand with the different stages of development of the human society. But the fault lies in our policy frame work which makes farming worse as compare to the past. We start considering agriculture as business and promoted it as a commercial enterprise, without giving farmers the right to fix the prices of their product themselves. Can any production or enterprise be successful at a commercial level as a price taker? Definitely not as profit is the first mantra of business and commerce, farmers being the price takers cannot succeed in this venture. The prices of each agriculture product are fixed by someone else and farmer has to only accept it and some time he has to sell in distress also.

In the context of Punjab state, the present model of agriculture was initiated during mid-sixties' named as 'Green Revolution' which marked its presence and made the country proud. India was a food deficit country before its initiation and in few years become self-sufficient in food grains. Moreover, now India is in the club of food surplus countries and exporting food grains to the food deficit countries. Punjab contributes a large quantity to the central kitty of food grains since its inception. Now the share is somewhat less but even today the contribution is very significant. But Punjab has paid a very big price for its contribution to the central pool in the form of declining underground water table, declining forest cover, reduced productivity of land, large scale unemployment due to monoculture of paddy and wheat, over mechanization and many more. The farmers are under a huge debt burden due to cost-price squeeze against the agricultural produce. The profitability of agricultural profession is continuously decreases as the prices of agricultural produce are increasing less as compare to the prices of agricultural inputs and other consumer goods used by the farmers.

As we are talking about the future scenario of agriculture, during the recent corona pandemic, it becomes very clear that agriculture is a life line of human race for its survival. This sector provided all essential commodities and fulfilled all requirements of very large population throughout the world. During the lockdown periods, farmers were busy to supply milk, vegetable, fruits, grains, fodder and other farm products to the masses by putting their own life to a very high risk. They have to harvest and market their produce during the lockdown despite the shortage of farm labour. The government provided very little help to the farming community at this very critical juncture. In the present scenario, the condition of farmer as well of farming is very serious and alarming throughout the globe. Indian case in this regard is not different as agrarian crisis is very much visible and clear in the whole country. One should understand that an agrarian crisis not only affects the farming community but the whole rural economy. Logically it seems to be very true that the inappropriate and wrong political decisions have a direct correlation to this alarming situation. Our politicians are always having duel face, one favouring the farmers in rallies and the other passing laws against them. This is a very serious concern to be taken into consideration by the policy makers, thinkers and academia to solve the real problem of agrarian crisis.

Recently, a national seminar was organized relating to future of agriculture in the country and to find out the remedial measures for the sustainable development and long term policy frame work. The issue was discussed at length and probed that the present model of capital intensive and highly mechanized one will not be suitable in future if we need the sustainable agricultural development. Certainly, we have to look for something more serious and workable in the present scenario. To stop the depletion of underground water table, we have to shift from water gulping crops such as paddy to the alternate crops to save water. Moreover, instead of flooding the field with

water, techniques like sprinkle irrigation, drip irrigation or root zone irrigation, direct seeding of paddy etc. should be adopted. In this direction, the guidelines provided by the state agricultural universities and agricultural department should be followed. Further, the rain water should also be preserved and used for the agricultural purposes. These strategies can save lots of water and save the state as well the country from depletion of very precious resource.

Mostly, our politicians and scientist are blaming the farmers that they are leaving their work culture and become very lazy in doing work on the farm. But during recent period, this proves to be very untrue. The farmers harvested their entire wheat and paddy crops and send it to the respective markets within the stipulated time. They have to put their lives in danger also as our markets were not properly equipped with corona related safety measures. Even after that, very little number of cases appeared from the rural areas. The farmers put their entire families on work and almost completed the operation. They also adopted the new technology of direct seeding rice in their fields. So it is wrong to blame farmers for every fault lies somewhere else. The focus of the government was only to provide various financial and other facilities in the urban settlements by leaving the rural India at the mercy of god. Moreover, the government is working under the pressure of international organizations like World Trade Organization, World Bank, World Health Organization etc. and making decisions against the farming community. The faults in the agricultural development model are ignored by the officials and the academicians, which are responsible for the present day crisis. The whole blame of this crisis is shifted towards the farming community, which is totally unethical and unjustified. The need of the hour is to look into the faults of the system rather than to put a blame on the food gods of the country.

Another issue of current crisis relates to stubble burning which is now very much debatable that who is at fault in the present situation. The farmers are having their different limitations and the governments are having diverse views. Burning of agricultural biomass residue has been identified as a major health hazard. With about 35 lakh hectare under wheat and 30 lakh hectare under paddy cultivation in the state, a total of about 47.2 lakh tone of straw is generated every year. This included 25 lakh tone of wheat straw and 22.2 lakh tone of paddy residue. Out of this, 95 per cent of paddy straw and 25 per cent of wheat residue is burnt each year. This problem is not very serious in case of wheat but very alarming in case of paddy. Historically, farmers harvested and ploughed their fields manually, tilling plant debris back into the soil. When mechanized harvesting using combines became popular in the 1980s, burning became common because the machines leave stalks that are about one-foot tall. Burning the stalks is the quickest and cheapest way to clear them. Although most of the haze appears to originate from agricultural fires, but other factors such as urban and industrial smog may also be contributing. Now at this point, comes large number of farmer unions, organizations and other groups and politics taken place. Most of them argued that farmers are in a rush for the next crop and the absence of viable alternative methods are reasons why they burn stubble. The farmers are neither enough money nor time on their disposal as the window is very small between the harvest of paddy and sowing of wheat crop. The farmer are reluctant to collect the residue as there are no buyers. Lack of assistance by the state government and labour shortage emerged as the other major reasons for the practice.

Now the question arises that why the farmer known as life giver by providing food to the masses, takes his own life by committing suicide. The answer lies in the understanding of multi-dimensional and long-term factors causing it. The factors are again multidimensional, economic, social, political and ethical. On economic front, the expected prices and income were not obtained by more than 50 percent of the farmers. Failure of chemical control, rising rental values of land, depleting ground water, popularization of hybrids, rise in money wages, hike in fertilizer, power, diesel and interest rates contributed to the large increase in costs of cultivation. On the social side, the crisis is also very severe as the joint family system is on the decline and nuclear families are coming up, which fails to fulfil the emotional gap arising out of the problems at family level. The farmers are committing suicides due to non-profitable nature of farming. The government is proposing the diversification plans without realising the economic viability, social acceptability and area wise adaptability the options.

As it is discussed in the previous part that the present model has created lots of problems, which were actually in-built in the model itself. At the time of inception of 'Green Revolution' in the state during the second half of sixties, our agriculture was very much diversified and having area under different crops in a balanced manner. But today, our cropping pattern is totally changed into mono-culture of paddy-wheat crops while all other crops having very insignificant area under them. The crops like pulses, oilseeds, bajra, barley, groundnuts, chillies etc. are almost eliminated from the agriculture seen in the state. Now the million dollar question is that why this has happened? How these crops are eliminated over a period of about fifty years? What policies and factors are responsible for it? How can it be rectified, if we want diversification of cropping system in the state? These are the questions needs to be answered at this very crucial time.

Now the hundred million question is how to reduce the impact of this swear crisis if we not eliminate it fully. The solution of this multidimensional problem lies in people's participation in day to day life affairs. The right thinking persons should be ready to participate in the process otherwise the wrong type of persons will fill the space. Every problem has a number of possible solutions but we always hoping that government is to solve them. In this scenario, the state government should put on more efforts to increase the avenues for the use of paddy residue in the state. The government should also implement effective and greater scope of subsidy provision, so that agricultural implements can be made widely available.

It can be concluded that every segment feels lost in this debate of politicians, academicians, researchers, activists and reformers. The farmers continue to seek more loans, at a very high rate of interest, for buying expensive hybrid seeds, fertilisers and pesticides. The farmer presented in songs like a king, living very lavish life style, always having his gun on his shoulder and spending a lot of money on social ceremonies is nowhere in reality. That perception lies only in the movies and videos and very much away from the true picture of indebted farm families committing suicides. In the absence of fruitful and coherent government policy means they continue to grope in the dark, with disastrous consequences. It is clear that no one alone is at fault. Neither the farmer and nor the government can solve the problem alone. The need of the hour is to solve this swear problem as soon as possible.

## Discussion

The state of Punjab is currently facing a severe crisis in its socio-economic conditions, with the agriculture sector in crisis and high levels of unemployment, farmers suicides due to unprofitable farming practices. Additionally, the depletion of underground water, drug addiction, poor law and order, declining per capita income, lack of value addition at the village level, and marketing problems for agricultural produce are all prevailing issues. The agriculture sector in Punjab is vital as it provides food for the masses, making it our duty to ensure its future. However, the current model of agricultural development has become outdated and ineffective. The 'Green Revolution' model, adopted from the United States, was successful in increasing food grain production but failed to address sustainability concerns. The mismatch between resource endowments and technology adoption has led to the overexploitation of land and depletion of underground water. To solve the present crisis, a redesign of the agricultural model is necessary. In the context of Punjab, the 'Green Revolution' brought self-sufficiency in food grains but also led to declining underground water levels, reduced forest cover, decreased land productivity, and widespread unemployment due to monoculture. The future of agriculture is crucial for the survival of the human race, as demonstrated during the recent COVID-19 pandemic when agriculture proved to be a lifeline for sustaining essential commodities. It is imperative to address these issues and develop a sustainable and long-term strategy to reconstruct the agricultural model, focusing on the well-being of farmers and the preservation of vital resources such as water.

## Conclusion

The agriculture sector is in crisis but it has to be successful for the survival of human race on the earth. The education system becomes irrelevant in the changing scenario. Most of the time, they are denied their dues. The remedies are also to be discussed to some extent in the current scenario. Punjab is basically agricultural state dominated by its brave farmers, ever ready to accept challenges on various fronts. The crisis of agriculture sector is very familiar and differentiate the state from the other parts of the country. The interaction with the farming community and work experience in the field provided very deep insight which is helpful in the proper understanding of the current issue. The new model of agriculture known as 'Green Revolution' was introduced long back and it was in its peak during mid-seventies. The recent report on Punjab's groundwater resources pointed out that groundwater extraction has increased from 149 percent (of naturally available recharge) in 2013 to 165 percent in 2018, and the state has maximum percentage of wells showing groundwater depletion among all states in India. The need of the hour is not debating the issue in different forums, rather to diagnose the root cause of the problem and focusing on the possible solution. The present model was designed for a different purpose and with different type of resource endowments. In US, capital was a surplus resource whereas labour was in short supply. Moreover, the farm size was also very big there to support the mechanization at a large scale. It is very clear that mode and type of agricultural development has taken various dimensions. The basic model of agriculture was for subsistence of food supplies to the human race and not for the commercial purpose.

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