

International Journal of Multidisciplinary Trends

E-ISSN: 2709-9369

P-ISSN: 2709-9350

www.multisubjectjournal.com

IJMT 2023; 5(3): 01-03

Received: 01-12-2022

Accepted: 08-01-2023

Dr. Kanwar Bhan

Associate Professor,

Department of Geography,

Pt. C.L. Sharma Govt College,

Karnal, Haryana, India

Environmental influence of green revolution in Punjab and Haryana: Its causes and solution

Dr. Kanwar Bhan

Abstract

Agriculture remains an important occupation of people in India. It has been started to think that how we can enhance the agriculture productivity to meet the food grain demand of people. The agriculture in Haryana was comparatively traditional in mid 60's. There was a low application of pesticides and high yielding variety seeds. In the mean time, the green revolution technology has enabled us to become self sufficient in food grains production and productivity increased manifold. It could become possible with the extensive use of pesticides, insecticides in the production of agriculture crops. Consequent to it, there was also a negative impact of agriculture development upon the environment health. The problems of salinity, alkalinity, water logging, depletion of underground water sources, deforestation aroused out. The agriculture revolution in Haryana and Punjab occurred mainly in limited crops and commercialization of agriculture started. The productivity of some crops of rice, wheat and sugarcane increased. Consequently, there has been negative impact of agriculture development upon environmental degradation. The soil resources are not rationally managed and after it ecological impact has been registered. The intensive applications of chemical fertilizers have destroyed the nutrient balance of the soils. The present research paper focuses upon the problem of irrational utilization of natural resources. The depletion of underground water created the problem of water quality and quantity in the area. The Natural healths of soils have been influenced due to use of fertilizers and pesticides in irresponsible manner in the agriculture growth.

Keywords: Productivity, salinity, revolution, nutrient, health

Introduction

Indian agriculture was not much developed before the application of green revolution. The increasing demand of food grains could not be fulfilled until the expansion of cultivated area and agriculture productivity. The agriculture was so traditional and labour intensive and low productivity. The agriculture inputs were very traditional and its use was so much limited. The food grain demand was increasing very fast and it was thought that agriculture be development to be developed on technical advancement tools. The planners, agriculture scientist are engaged to find out the solution of the food deficiency. The application of modern agriculture techniques in agriculture development felt very much. In this way, in the mid 60 major emphasis was laid down upon the application of high yielding variety seeds, pesticide, insecticides, chemical fertilizers, modern irrigational facilities in agriculture development. There were good result of agriculture revolution but some environmental consequences also happened also occurred. It may become possible due to the intensification of irrigational facilities and crop management. The important points that attract the attention associated with the sustainability of agriculture have been compromised. The agriculture resources have been used irrationally and how the adverse impacts may be minimize. The development of agriculture should be eco friendly.

The major contributor in food grain production belongs to Punjab and Haryana. There has been drastic change in the agriculture pattern. The production of some limited crops such as wheat, rice and sugarcane have been increased. The crops productivity of other crops did not much increase. Due to green revolution, the production increased to great extent. The area became self sufficient in food grain production and also a major contributor in the Central pool providing surplus food grains. The important features of green revolution are minimum support price, marketing facilities and infrastructure development. The cropping pattern changed into wheat- rice and sugarcane and market oriented approach has been adopted. The important concern related to environmental degradation did not taken into account very seriously. The water logging, alkalinity salinity, soil erosion, deforestation are the current problem in the study area.

The depletion of water resources attracted the attention from different sections. The agriculture development in the study area may become possible with the fertile soils, credit facilities and Mandi facilities.

Corresponding Author:**Dr. Kanwar Bhan**

Associate Professor,

Department of Geography,

Pt. C.L. Sharma Govt College,

Karnal, Haryana, India

The Punjab and Haryana is an important part of the flood plains, South West monsoon, easy labour facility and more mechanization are important factors for green revolution. The people are complaining that the agriculture is not much profitable as compared to the earlier times. There is high input cost and profits are very low. The tendency of suicides by farmers due to economic distress has also been reported from different part of the study area. There is ever increasing electricity bill, high prices of inputs such as fertilizer, pesticides, and insecticides. The farmers are demanding better returns of agriculture produce. The farmer unions are demanding the legal status of MSP of their agriculture produce and formation of farmer welfare commission.

Source of data and methodology

In the present research, the data have been collected and consulted from different reports of newspaper, farmer discussion, agriculture scenario in the rural area and assessment of welfare schemes. The adverse environmental impact of agriculture development and factors associated with it. The transformation of traditional agriculture into commercial agriculture to get better return. The economic condition of Indian farmers are not much better as they have high pressure of agricultural loan and more rise in the inflation and high prices of commodities. It has been reported in day to day news report and farm unions are protesting to help in the agriculture development.

Purpose and objectives of the study

In the present study, the general discussion has been made to present the problem associated with agriculture development due to green revolution in Punjab and Indian. The important objective of the study may be briefed as under-

1. The critical assessment of environmental degradation in the post green revolution period in the Punjab and Haryana.
2. To focus upon the genuine concern of farming community and solution thereof.
3. To frame the better plan and policies to restore the ecological balance.
4. To understand the social economic problems of the people in the study area

Discussion of the Environmental problems in the post Green Revolution period (after 1966)

There was a tremendous change in the agricultural scenario of Punjab and Haryana after mid 60. The major emphasis laid down upon the enhanced agriculture productivity with the intensive use of inputs. The horizontal and vertical expensive in agriculture may really be helpful to bring the agriculture prosperity. The crop area increased, irrigational facilities improved with the expansion of canal and tube well irrigation network.

Transformation in the Cropping pattern - an indicator of agriculture reorientation

Before 60, Indian agriculture was prominent with the growing of traditional and coarse grains. The irrigation was traditional mainly done with the help of animals driven irrigational tools (wells and Rahat). There has been a shift in the cropping pattern in India especially in Punjab and

Haryana. The major focus was upon the commercial and cash crops. The crop combinations of wheat- rice- sugarcane become so vital. In the long term, this crop combination has been deteriorated the soil fertility. The financial and technical assistance really proved beneficial in order to bring prosperity of the farmers.

But in the long run, the cropping pattern seems to be less profitable from an agriculture productivity point of view and ecologically viable. The shifts in the present cropping pattern demand a change. That was mainly to restore the soil fertility.

Environmental loss and its causes associated with agriculture development

There was a major demand of food grain production. The present cropping pattern of agriculture is unable to full fill the required demand of food grains. So that the new technology in the agriculture has been implemented. The application of high yielding variety seeds and chemical fertilizers and proper improvement in irrigation facilities are important input in agriculture transformation. The problems such as water logging, desertification, soil erosion, and deforestation be properly evaluated and controlled.

Impact upon the soil nutrients upon the fertility

It was assumed that NPK content in the soils play an important role in maintaining the soil fertility. The content of N and P has increased after green revolution but the concentration of K content has been decreased. So there should be a rational balance of NPK in the soil composition. The natural compositions of soil nutrient have been disturbed by chemical fertilizer. It has happened in the study area and its scarcity have been compensated with additional fertilizers inputs.

Management of water resources with modern scientific approach

The groundwater has been depleted very fast in the post the green revolution period due to water consuming crops (rice and sugarcane) in the cropping pattern. The management of water resources do not remain on the priority agenda of scientific community in early years. The water table in Punjab and Haryana has been declined very much. It has created havoc in the proper supply of drinking water and water for irrigation.

Jal Shakti Abhiyan (JSA): Catches the Rain-2023 and other pilot projects of water conservation

The Jal Shakti Abhiyan (JSA) has been started by the government of India to enrich the underground water resources. In this mission, Government of India will motivate the different stake holders at state and central level to understand the utility of water and its conservation. In this context, the colleges and schools students to be motivated to understand the basic knowledge associated with conservation of water resources. The seminar, workshop, poster making, quiz contest and wall writing etc to be conducted with participation of students to spread the message of water conservation in the society. The other program related to conservation of water resources provides details that our water bodies in rural areas to be rejuvenated. The water conservation practices to be part of daily life routine.

Direct Seeded Rice (DSR) technique in Haryana- step toward water conservation in Punjab and Haryana

In the DSR technique, the rice seeds are directly seeded in the fields than the traditional transplantation practices. As per report published in the tribune daily newspaper (23 April 2023 edition), there was about one lakh acres area target in Haryana during 2021-22 year to grow rice with DSR technology. The target area under DSR technology will be 2 lakh acres in the year 2022-23. The department will give incentive of rupees 4000 per acre to the farmers who will grow the paddy crop with DRS technology. It has been assumed that if paddy is grown with DSR, it would save large quantity of underground water. If the Paddy grown with this technology between 20 may to June 15, it would be more beneficial for conservation of underground water resources. The issue of weeds is more prominent in DSR but it will be timely controlled with the use of weedicides. It focus upon the problem of water conservation and modern technology may proves a revolutionary step in it.

The problem of environmental degradation due to Agriculture revolution maybe briefed and documented in the following ways

1. The rational utilization of water sources in agriculture development is essential.
2. the public awareness programs to be conducted to spread message about the utility and conservation practices of water to the people'
3. The conferences and seminars to related to water conservation to be conducted.
4. More emphasis to be laid down upon the sustainable agriculture practices.
5. Incentive oriented agriculture crops to be grown in order to save water and ecological and economic sustainability.
6. The Crop diversification techniques to be adopted in agriculture and farmers to be motivated to adopt them. That may be helpful in maintaining ecological balance and soil fertility.

Conclusion

The green revolution enhanced the agriculture productivity. The agriculture productivity have also caused great loss to land resources. The agriculture development primarily achieved with the intensive application of chemical fertilizers, pesticides, credit facilities and intensive application of irrigation facilities. The primary objective of green revolution was achieved i.e. agriculture productivity but caused loss to soil nutrients. The restoration of soil nutrients with the adoption of more eco environment friendly techniques be applied with scientific intervention. The crop diversification techniques are more helpful in maintaining ecological balance and soil fertility. The crop rotation, leguminous crops, maintaining the soil moisture and soil nutrients are vital to maintain the soil health. The commercial and industrial crops to be introduced in place of more traditional crop combinations. The crop such as sunflower and cotton crops to be produced to bring prosperity in the area. The present global scenario must be kept in mind to adopt the cropping pattern. The agriculture produces to be grown according to the market demand and economic return. The recent trend in crop management primarily focuses upon the integrated crop management. The crop residue management with profit oriented approach

is making place in the Indian agriculture in contemporary time.

References

1. Babu SC. Global food security and India. Yojna; c2008.
2. Chakravarti AK. Green Revolution in India. Annals of the Association of American Geographers; c1973.
3. Petronila M Anuada, Pet Roey L Pascual, Danny E Carabio. Combined organic fertilizer application improved growth and yield of cherry tomato (*Solanum lycopersicum* L.). Int J Res Agron 2021;4(2):75-80. DOI: 10.33545/2618060X.2021.v4.i2a.106
4. Grigg David. Agriculture under the common agricultural policy: geography. Applied Geography. 1985 October;5(4).
5. Kurosaki T. Agriculture in India and Pakistan, 1900-1995: A further note. Economic and Political Weekly; c2002.
6. Sharma KD. Groundwater management for food security. Current Science; c2009.
7. Tiwari DN. Optimum use of water resource in agriculture. Yojna; c2001.
8. Dorin B. For a second Green Revolution, A seminar report. Economic and Political Weekly. 2000;35(23):1893-1894.