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Green Revolution in Ganga - Yamuna Doab

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Abstract

After independence, India launched five years plans for thedevelopmentof its resources, agricultural production was low, as the cultivation practices were old. The new strategy provided a tremendous success. In the words of Prof. Swaminathan 'Slowly but Surely, the yellow colour of the various seedlings started turning green due to increased development. As a result of better nutrition, this change in colour is popularly referred to as 'Green Revolution'. Really the phase of green revolution has increased crop production to a higher level. We can therefore, be proud to be optimistic enough, to challenge all the prophets of Gloom provided we have full confidence in it.

Keywords: Green Revolution, Doab, Agriculture, Irrigation.

Introduction

The Green Revolution in India refers to a period of time, when agriculture in India changed to an Industrial System due to the adoption of modern methods and technology such as High yielding Variety (HYN) seeds, Tractors, Irrigation Facilities, Pesticides, Fertilizers etc. This Green Revolution has resulted inthe increase of agricultural productivity in the developing world. A number of earlier studies show the impact on rural poor who did not receive a fair share of benefits. The big farmers were the main adopters of the new technology, and small scale farmers were unaffected because the green revolution resulted in higher production, but at the cost of higher prices of inputs.

R.S. McGregor defines Doab as 'a region lying between and reaching to the confluence of two rivers (esp. that between the Ganga and Yamuna)'

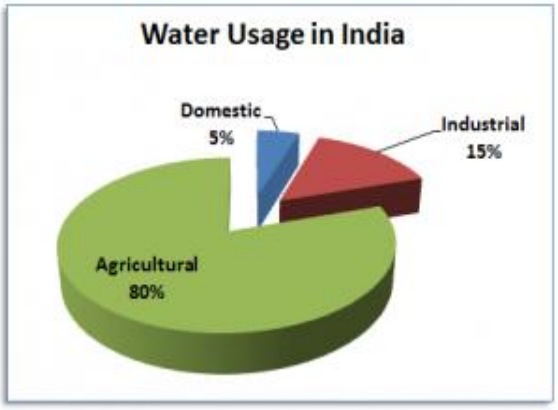
Environment provides a base for human life on earth. It also determines the existence and growth of mankind and all activities. Mishra and Puri (1995) have pointed out that, green revolution propagated the use of inputs like irrigation, fertilizers, new high fielding verities seeds and pesticides, which have caused an adverse effect on soil nutrients and human health.

Khullar (2006) – He has outlined 12 components of green revolution and all these have direct or indirect effect on the environment. The main occupation of the population of upper Ganga–Yamuna Doab region is largely based on agriculture. Food security and economic growth required significant investments in agriculture improvement, agriculture production and productivity per hectare and per agriculture worker.

The farmers of the upper Ganga–Yamuna Doab has suffered miseries on account of the failure of rains, so farmers have constructed large number of minor irrigation works namely wells, tanks, dongs and irrigation channels. It is estimated by central water commission that 178 million hectare meters surface water resources and 55 million hectare meters ground surface water resources are available .

The upper Ganga–Yamuna Doab region is purely agrarian in character. It issituated in a monsoonal climatic zone. Indian agriculture is based on the monsoonal rainfall. Indian agriculture is called as 'gamble of monsoon'as monsoonal rainfall is highly uneven, uncertain. The various sources of irrigation in this doab region are government tube-wells, private tube wells, ponds etc. Private tube wells and canals are the main sources of water for irrigation. The farmers of the doab region are now more awareand economically well off and are taking full advantage of various programs andprojects initiated by the central government.

Total irrigated area of upper Ganga–Yamuna doab region is given in the pie chart.



Technological Parameters of Green Revolution on Ganga–Yamuna Doab

Agriculture technology innovation in the third world countries offer the best possibility for increasing agricultural production. The challenges of modern technology is to improve the agriculture for an overall development. Green revolution is, in fact, the radical change in agriculture brought about by the use of moderninputs and improve farm practices in increasing the outputs per hectare. Dr. M.S. Swaminathan, the then director general, I.C.A.R. describes green revolution in thesewords – " The growing practice of feeding plants better, our crops are slowly changing colours, from a light green or yellow colour of the past to a dark green colour that has led to the coining of the term green revolution".

The rate of application of modern technology in agricultural production has considerably increased on Ganga–Yamuna doab. In the development of Indian agriculture, speedy and extensive introduction of technological change is one of the most important factors. It will be useful and interesting if we can identify and measure the various technical advances for agriculture. The new agricultural technology consists of the biochemical and chemical innovations. The provision of a controlled supply of water is must since too much water is bad for the new crop varieties unsuited to flood conditions. The better use of water in agriculture is one of the major step towards raising productivity. The irrigation is a must for the programme of new revolution in agriculture. Irrigation can be possible through major mediums, and minor irrigationprojects as well. Mechanization enable the farmers to build terraces, ditches, watering ponds and canals, which help to protect soil fertility and make full use of water supply. In addition mechanical water pumps facilitate large scale irrigation and drainage operations. Ground water irrigation is the most important input in the process of agricultural transformation.

So, the first green revolution was to ensure food security as there was severe scarcity of food in the country. The second revolution green revolution aims at creating sustainable agriculture by leveraging advancements in technology.

The factors leading to Green Revolution

Several factors have led to the growth of green revolution in the Ganga -Yamuna doab. They are as follows –

Adoption of High – Yielding Varieties of Seeds

The use of high yielding varieties of seeds has resulted in substantial increase in food grain production. The cause of breakthrough in the production of wheat and rice has been attributed to magic seeds and certified seeds adopted by the agriculturists. The role of national and State Corporation and agricultural universities in distributing these seeds to the farmers, indeed, has been commendable.

Supply of Chemical Fertilizers

The demand for fertilizers has been increasing after green revolution. Besides high fielding varieties of seeds, chemical fertilizer is the other input which is responsible for making the green revolution a big success. Infact,the latest agricultural technology is referred to as the seed and fertilizer technology.

Expansion of Irrigation Facilities

Irrigation is everything in India. Water is more valuable than land. According to the Indian council of agricultural research (ICAR), the production of irrigated crops is on an average 50 to 100 percent higher than that of un-irrigated crops in the same locality. Extension of irrigation facilities has led to the adoption of multiple cropping pattern, introduction of modern farming technology and protection of the crops. All these factors result in spectacular increasein agricultural production.

Use of Machinery

The role of machinery in accelerating the growth of greenrevolution is, indeed, great. The use of modern agricultural tools and implements like tractors, harvesters, threshers, pump sets, sprayers etc has led to progressive agriculture. As a consequence of the use of machinery, there has been substantial increase in the area under assured irrigation,leading to increase in agricultural productivity.

Provision of Agricultural Credit

Credit is another necessary input to increase agricultural productivity. Long term credit have been

set up throughout the country in quite large numbers. Beside this, regional rural banks, commercial banks like State Bank of India and National Bank for agriculture have also helped the farmers to grow more output.

Soil conservation

Soil conservation is another significant cause of green revolution.Soil conservation is preventing of soil loss from erosion or reduced fertility caused by over usage, acidification, salinization or other chemical soil contamination.

Multiple cropping Programmes

The multiple cropping programmes aims at increasing the cropping intensity of land. In agriculture, multiple cropping is the practice of growing two or more crops in the same piece of land in same growing season instead of one crop. It is a form of polyculture.

Incentive Price Policy

The government has been fixing remunerative prices for agricultural crops, the government has also been subsiding the purchase of various agricultural inputs used by the farmers.

Land reforms

The adoption of land reform measures in the form of abolition of intermediaries, security of tenure, consolidation of holdings, ownership right on the tenants, regulation of rent and co – operation farming goes a long way in increasing agricultural productivity.

Conclusion

The overall analysis shows agricultural performance over alarge part of the doab is characterized with marked productivity variations. There variations in productivity are influenced by the factors of the green revolution. In the doab region there is a substantial variation in respect of soil fertility. Among the factors of the green revolution, it is needed that the productivity of crops per hectare be increased at least in medium and low productivity areas. Application of new agricultural technology brought with high–yielding varieties will be of great help. The task of increasing agricultural productivity can also be achieved by dividing the doab into a number of micro – agro – climatic zones and intensive efforts should be made to evolve new high–yielding varieties, taking into consideration the factors of the green revolution of the region.

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