

Green Revolution

The Green Revolution was an endeavour (try hard to do achieve something) initiated by **Norman Borlaug** in the 1960s. He is known as the '**Father of Green Revolution**' in world.

It led to him winning the **Nobel Peace Prize** in 1970 for his work in developing **High Yielding Varieties (HYVs)** of wheat.

In India, the Green Revolution was mainly led by **M.S. Swaminathan**.

The Green Revolution resulted in a **great increase in production of food grains** (especially wheat and rice) due to the introduction into developing countries of new, high-yielding variety seeds, beginning in the mid-20th century.

The Green Revolution in India was initiated in the 1960s by introducing high-yielding varieties of rice and wheat to increase food production in order to alleviate (suffering, deficiency, or problem) hunger and poverty. Post-Green Revolution, the production of wheat and rice doubled due to initiatives of the government but the production of other food crops such

on it even though India is no longer an agrarian economy. A report by the Department of Agriculture, Cooperation and Farmers Welfare estimates

that the food grain production in India will be 279.51 million tonnes during the 2017–2018 crop years. Although India is self-sufficient in food production, its food production between 1947 and 1960 was so bad that there were risks for the occurrence of famine. Therefore, the Green Revolution was initiated in the 1960s in order to increase food production, alleviate extreme poverty and malnourishment in the country, and to feed millions. In spite of these measures, India has one quarter of the hungry population of the world with 195.9 million undernourished people lacking sufficient food to meet their daily nutritional requirements.

Green Revolution in India (Background of Green Revolution in India)

- In 1943, India suffered from the world's worst recorded food crisis; **the Bengal Famine (extreme scarcity of food)**, which led to the death of approximately 4 million people in eastern India due to hunger.
- Even after independence in 1947, until 1967 the government largely concentrated on expanding the farming areas. But the population was growing at a much faster rate than food production.
- This called for an immediate and drastic action to increase yield. The action came in the form of the Green Revolution.
- The green revolution in India refers to a period when **Indian Agriculture was converted into an industrial system** due to the **adoption of modern methods and technology** such as the use of HYV seeds, tractors, irrigation facilities, pesticides and fertilizers.
- It was funded by the US and the Indian Government and the Ford and Rockefeller Foundation.
- The Green Revolution in India is largely the Wheat Revolution as the wheat production increased by more than three times between 1967-68 and 2003-04, while the overall increase in the production of cereals was only two times.

Positive Impacts of Green Revolution

- **Tremendous Increase in Crop Produce:** It resulted in a grain output of 131 million tonnes in the year 1978-79 and established India as one of the world's biggest agricultural producers.
 - The crop area under high yielding varieties of wheat and rice grew considerably during the Green Revolution.
- **Reduced Import of Food-Grains:** India became self-sufficient in food-grains and had sufficient stock in the central pool, even, at times; India was in a position to export food-grains.
 - The per capita net availability of food-grains has also increased.
- **Benefits to the Farmers:** The introduction of the Green Revolution helped the farmers in raising their level of income.
 - Farmers ploughed back their surplus income for improving agricultural productivity.
 - The big farmers with more than 10 hectares of land were particularly benefited by this revolution by investing large amounts of money in various inputs like HYV seeds, fertilizers, machines, etc. It also promoted capitalist farming.

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- **Industrial Growth:** The Revolution brought about large scale farm mechanization which created demand for different types of machines like tractors, harvesters, threshers, combines, diesel engines, electric motors, pumping sets, etc.
 - Besides, demand for chemical fertilizers, pesticides, insecticides, weedicides, etc. also increased considerably.
 - Several agricultural products were also used as raw materials in various industries known as **agro based industries**.
- **Rural Employment:** There was an appreciable increase in the demand for labour force due to multiple cropping and use of fertilizers.
 - The Green Revolution created plenty of jobs not only for agricultural workers but also industrial workers by creating related facilities such as factories and hydroelectric power stations.

Negative Impacts of Green Revolution

- **Non-Food Grains Left Out:** Although all food-grains including wheat, rice, jowar, bajra and maize have gained from the revolution, other crops such as coarse cereals, pulses and oilseeds were left out of the ambit of the revolution.
 - Major commercial crops like cotton, jute, tea and sugarcane were also left almost untouched by the Green Revolution.
- **Limited Coverage of HYVP:** High Yielding Variety Programme (HYVP) was restricted to only five crops: Wheat, Rice, Jowar, Bajra and Maize.
 - Therefore, non-food grains were excluded from the ambit of the new strategy.
 - The HYV seeds in the non-food crops were either not developed so far or they were not good enough for farmers to risk their adoption.
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- Green Revolution technology has given birth to growing disparities in economic development at interregional and intraregional levels.
 - It has so far affected only 40 percent of the total cropped area and 60 per cent is still untouched by it.
 - The most affected areas are Punjab, Haryana and western Uttar Pradesh in the north and Andhra Pradesh and Tamil Nadu in the south.
 - It has hardly touched the Eastern region, including Assam, Bihar, West Bengal and Orissa and arid and semi-arid areas of Western and Southern India.
 - The Green Revolution affected only those areas which were already better placed from an agricultural point of view.
 - Thus the problem of regional disparities has further aggravated as a result of the Green Revolution.
- **Excessive Usage of Chemicals:** The Green Revolution resulted in a large-scale use of pesticides and synthetic nitrogen fertilisers for improved irrigation projects and crop varieties.