

## Impact of Green Revolution in India: A Study

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### Abstract

Agriculture is considered as the backbone of Indian economy. After 1990s India is experiencing a rapid economic growth. The Green Revolution appeared in India in the late 1960s and consequently India attained food self-sufficiency within a decade. Obviously, this first phase of the Green Revolution was limited to wheat crop and in northern India such as Punjab, resulting in a limited contribution to overall economic development of the country. But the agricultural growth in the 1980s, as a second “wave” of the Green Revolution, involved almost all the crops.

**Key Words:** Agriculture, Indian Economy, Green Revolution, Crops

### Introduction

In present day world India is experiencing a rapid economic development especially after the 1990s. Without any shadow of doubts, a series of economic liberalization policies implemented after 1991 in India largely contributed to the accelerated growth in the country until the present day.

The Green Revolution can contribute to the overall economic development through creating a market in rural areas for non-agricultural products and services.

In 1980s the second “wave” of the Green Revolution, appreciated in India. Since it involved almost all the crops including rice and it cover the entire country. Hence, it was able to contribute to raise rural income and remove rural poverty. Therefore, the second Green Revolution in the 1980s was significant for the history of Indian economic development.

### The Green Revolutions in India

The new seed-fertilizer technologies, especially for the wheat crop, started to disseminate very rapidly in northern India and within a decade or so India attained food self-sufficiency except for some drought years. It can be called the first “wave” of the Green Revolution in India. However, Indian economy as a whole had to experience a bitter “lost decade” during the mid-1960s to the mid-1970s mainly due to the shortage of foreign exchange for the import-substituting industrial sectors. (Ohno, 1999).

The first wave of the Green Revolution in India had another limitation from the viewpoint of overall economic development in the country. Because the diffusion of the Green Revolution was confined to wheat crop and in northern India such as Punjab, Haryana and the western part of Uttar Pradesh, it could not raise rural income and alleviate rural poverty in a wider area.

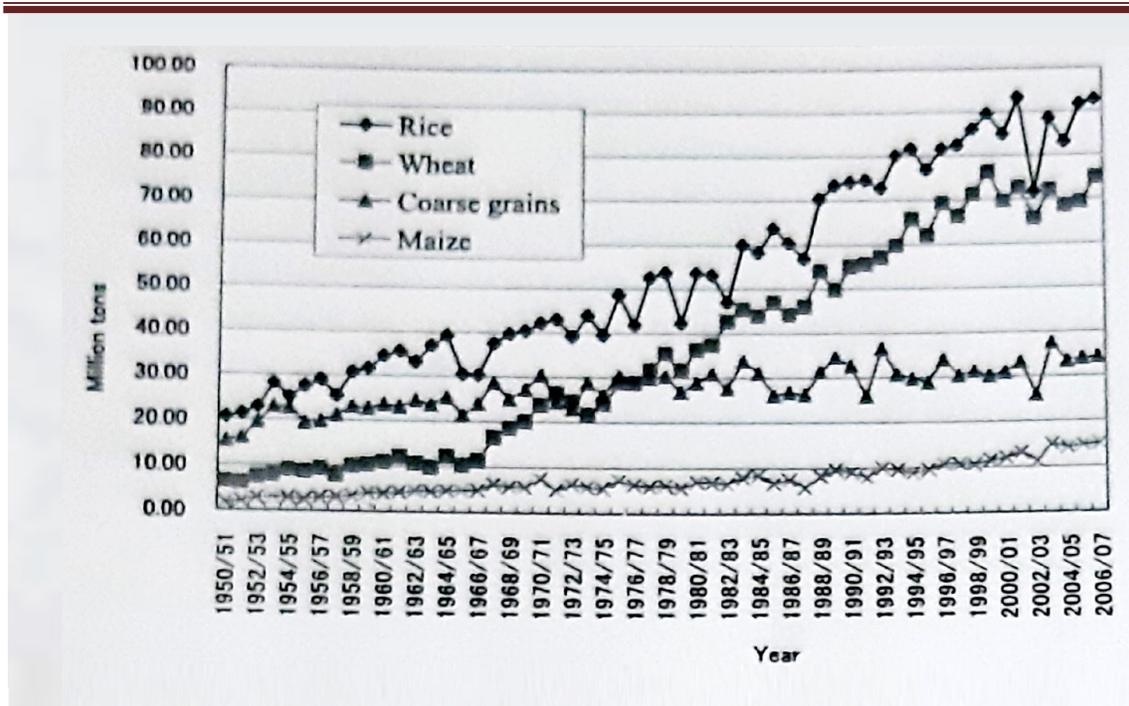


Figure 1 Production Trend of Major Cereals in India

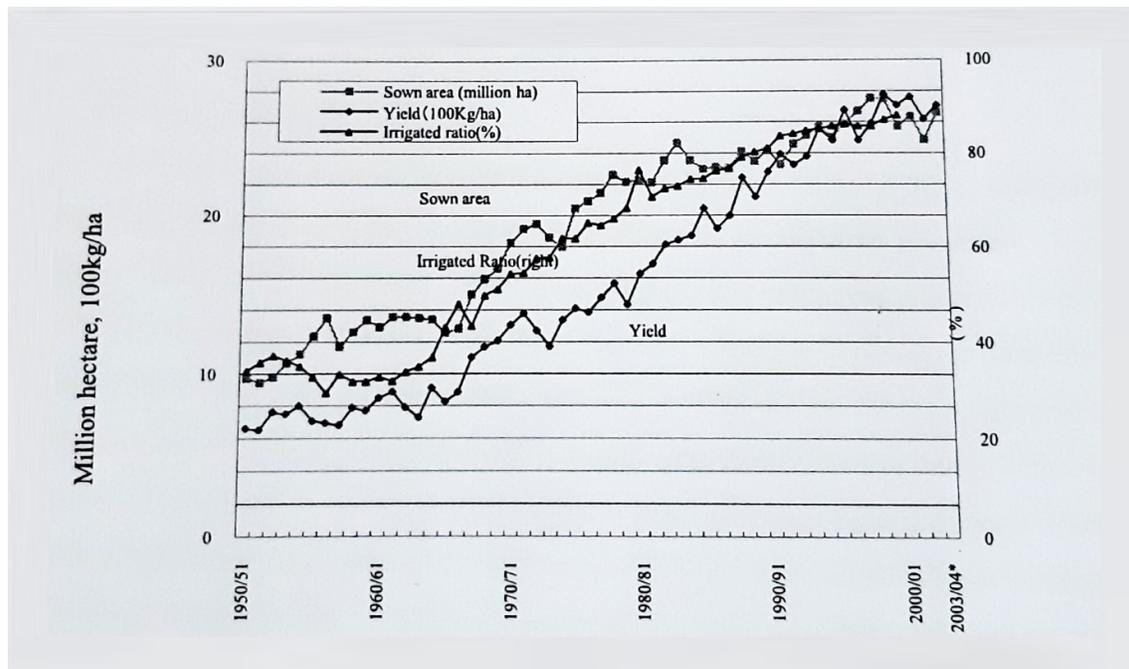


Figure 2 Sown Area, Yield and Irrigated Ratio of Wheat Production in India

As a result of the fast production growth of wheat, which was a minor crop in India at the time of independence, however, the production of wheat exceeded that of the coarse cereals (such as *jowar*, *bajra*, *ragi*

and maize) by the end of the 1970s in India, (Figure 1, Figure 2).

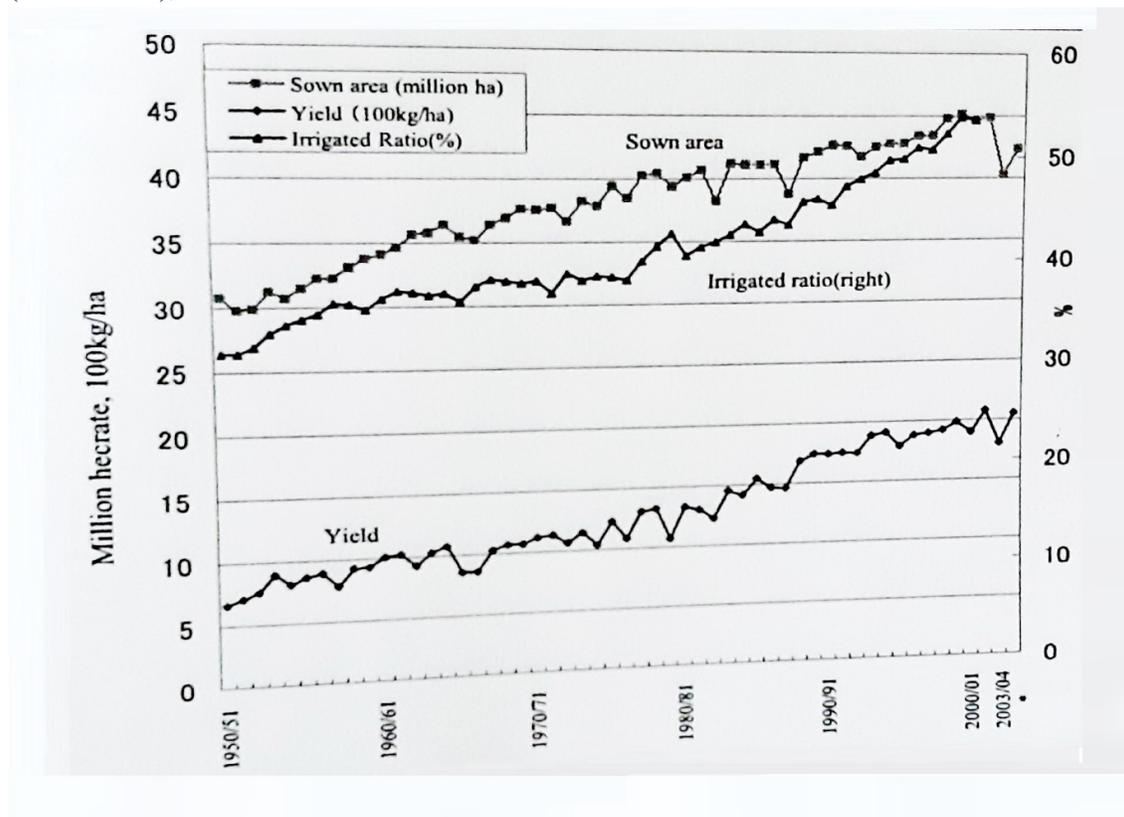
The decade of the 1980s experienced very remarkable growth rates in the agricultural sector, including almost all the regions of

the country and almost all the important crop sectors. The fast growth increase of rice production during the 1980s, was especially essential for the development of hitherto poverty-struck rural areas in India (Figure 3).

The major factor behind the overall rapid growth of the agricultural sector in India was a widespread diffusion of private tube-wells (especially small-scale shallow tube-wells). The diffusion of tube-wells in formerly rain-fed areas (or unreliably irrigated areas by government canals) enabled to grow HYV wheat instead of *rabi* crops such as pulses in the dry season (*rabi* season), and in the monsoon season

(*kharif* season) the yield of rice was increased substantially by shifting the varieties from traditional to modern types (HYVs). Hence, the highly productive rice-wheat cropping pattern was developed in a wide area of rural India, especially in the Gangetic Basin.

It was opined by some Marxist economists that the “semi-feudal mode of production” system in eastern India was ultimately attributed to it (Bhaduri, 1973). Against this argument, however, Newberry (1974) tried to refute it from the theoretical viewpoint and Bardhan and Rudra (1978) did so empirically.



**Figure 3 Sown Area, Yield and Irrigated Ratio of Rice Production in India**

(Source. Government of India, *Agricultural Statistics at a Glance 2004*. Note. Yield of rice in India is in terms of milled rice.)

In other words, it can be hypothesized that after the 1980s the real price of tube-wells

declined so that even the relatively poor farmers in eastern India could purchase

tube-wells. Another factor may be the delay of rural electrification in eastern India, because irrigation cost is much cheaper by electric tube-wells than diesel-driven tube-wells.

Rural India witnessed a widespread agricultural development in the 1980s due mainly to the diffusion of private tube-wells (Figure 4). Especially the most

important thing was that rice production, which was the main staple food in eastern and southern India, increased rapidly and contributed to raising rural income and alleviating poverty. The real wages of agricultural labourers in India had started to rise and also rural poverty started to decline for the first time in the long history of the country.

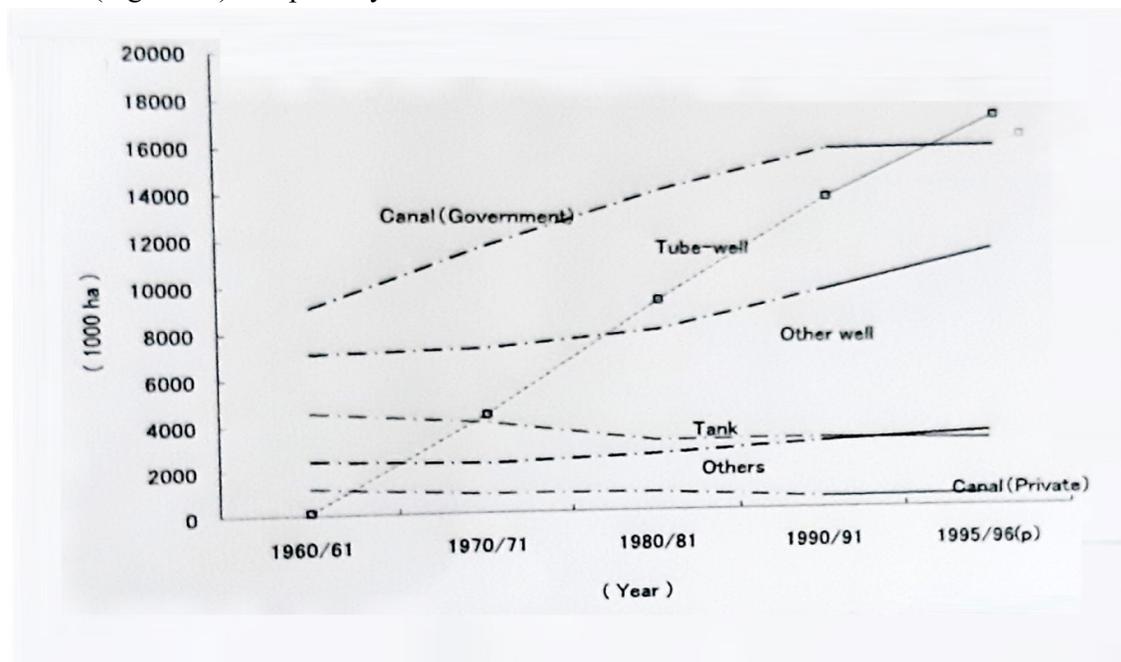


Figure 4 Net Irrigated Area by Source of Irrigation in India

(Source. Until 1990/91: Water and Related Statistics 1994, Statistics Directorate, Irrigation Management Organization, Central Water Commission, p.81)

Finally, it is important to note that in India not only rice and wheat increased their yield levels dramatically during the period of the Green Revolution, but also coarse cereals accomplished a continuous and substantial increase of their yield

After 1990s Indian economy was shifted into a new developmental stage. First, the critical period for the preparation of full-scale non-agricultural sector development was over until the end of the 1980s, when broad-based agricultural development based on the second Green Revolution was

occurred. Second, since India turned to the stage when per capita human consumption of foodgrains (especially for staple food such as rice and wheat) started to decline, agricultural growth rate will not be very high because foodgrains sector is large within the agricultural sector, even if high-valued agricultural commodities (such as livestock, vegetable, fruits) will increase relatively rapidly. Third, it means that widening disparity between agricultural and non-agricultural (or between rural and

urban) sectors will be a serious problem for the economy.

The second Green Revolution in India during the 1980s was able to play a critical role in preparing a wide market in rural areas for non-agricultural products and services, which became the basis of the rapid economic growth based on non-agricultural sector development in the country after the 1990s.

#### Summary:

In recent years India is experiencing a rapid economic growth, especially after the 1990s when it started to liberalize its economy in a full scale. The Green Revolution in India started in the late

1960s and with its success India attained food self-sufficiency within a decade. However, this first wave of the Green Revolution was largely confined in wheat crop and in northern India, resulting in a limited contribution to overall economic development of the country. On the other hand almost all the crops including rice and covered the whole country, it enabled to raise rural income and alleviate rural poverty substantially. Such a rise of rural India as a market for non-agricultural products and services was an important pre-requisite for the rapid economic growth based on non-agricultural sectors development in India after the 1990s.

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