Rethinking Indian Agriculture

Diminishing Returns of Green Revolution

> **India will have to do its own assessment and derive its own formula as regards the switch to chemical-free farming. But with the poor carbon content in soil, depleting water table and abnormal rise in cancer cases, the time to take the decision is now!**

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India's Green Revolution, which was initiated in the 1960s, was a period of agricultural development and innovation that led to a significant increase in agricultural productivity and output. It transformed India from being a food-deficit nation to a food-surplus nation. This was achieved through the introduction of high-yielding crop varieties, the use of chemical fertilisers, and improved irrigation and other agricultural practices.

However, over time, the Green Revolution has started to show diminishing returns. There are several reasons why this is happening.

Soil degradation: The intensive use of chemical fertilisers and pesticides has led to soil degradation, including soil salinization, alkalization, and nutrient depletion. This has led to a decline in soil fertility and productivity, which has reduced the yields of crops.

Water depletion and pollution: The intensive use of irrigation in the Green Revolution has led to groundwater depletion, which has adversely impacted the availability of water for drinking, irrigation, and industrial use. The use of chemical fertilisers and pesticides has also led to water pollution, including contamination of drinking water sources.

Decline in biodiversity: The emphasis on high-yielding crop varieties in the Green Revolution has led to a decline in traditional crop varieties, which has resulted in a loss of biodiversity and reduced the resilience of the agricultural system.

Public health risks: The use of chemical fertilisers and pesticides has been linked to several public health risks, including respiratory diseases, cancer, and reproductive health problems.

To address these issues and overcome the diminishing returns of the Green Revolution, there is a need for a more sustainable and equitable approach to agriculture in India. This involves promoting sustainable agriculture practices, such as organic farming, conservation agriculture, and agroforestry. It also involves investing in agricultural research and development to identify new and innovative solutions to the challenges facing Indian agriculture.

While organic farming has several potential benefits, many agriculture scientists in India caution against moving to organic farming due to several challenges and limitations associated with it. Some of the reasons why agriculture scientists warn against moving to organic farming in India include the following.

Limited productivity: Organic farming relies on natural inputs such as compost, manure, and biofertilizers, which can be expensive and time-consuming to produce. Additionally, organic inputs may not provide the same level of nutrient availability and crop yields as synthetic fertilisers.

Pest and disease management: Organic farming relies on natural methods of pest and disease management, such as crop rotation, intercropping, and biological control. However, these methods may not be as effective as synthetic pesticides and fungicides, and may result in lower crop yields and quality.

Limited scalability: Organic farming is often practised on a small scale and may not be suitable for large-scale commercial agriculture. Additionally, there may be limitations on the availability of organic inputs, which may restrict the scalability of organic farming.

Cost: Organic farming can be more expensive than conventional farming due to the cost of organic inputs, labor-intensive practices, and the cost of organic certification.

Food security: Organic farming may not be able to produce enough food to meet the growing demand for food in India. Additionally, organic farming may result in lower yields, which could negatively impact food security.

Case Study of Sri Lanka

Viyath Maga was a movement in Sri Lanka to go Organic. In 2016, some academicians and civil society members of Sri Lanka launched a movement called Viyath Maga. Out of other things the movement pushed for a change in the way agriculture was practised in Sri Lanka and urged everyone to go back to organic farming.

Once the movement started picking pace, it started attracting political attention. Three years later in 2019, Srilankan President went on to make this as one of his poll promises. After getting reelected President Gotabaya kept his promise and ordered all the 20 lac farmers to go organic on the fateful day of April 29, 2021. The decision was also taken because Sri Lanka was already reeling under pressure due to its depleting foreign currency reserves.

Fertilisers constituted one of the principal imports at 10% of the total foreign currency usage. But the suddenness of the decision came as a shock as till this day only around 3% farmland was under organic farming. In the absence of timely support and education, the absence of fertilisers delivered a body blow to Sri Lanka's agriculture.

Bhutan on the other hand practices 80% organic farming and is well on the path to soon achieve a cent percent target.

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