



# A Re-Analysis Of Indian Green Revolution In The Light Of Sarvodya- A Gandhian Concept

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## Abstract

Green revolution gave us immediate food security in a short period of time but it had many harmful ecological consequences. Green revolution pushed genetically modified seeds into the market, as a result farmers shifted their focus away from the traditional farming and adopted chemical farming for greater yields. Gandhian principle of Sarvodya can lead us to sustainable agriculture, which nourishes our soil, empowers our peasants and will make the society healthy. Organic farming, self help groups, empowering the village panchayats and preservation of indigenous seeds and animal breeds can help us to stride on the path of sarvodya.

Key words: Sarvodya, Green Revolution, Sustainability, Agriculture, Indigenous.

## Introduction

Green Revolution is a term given to increased crop production in 1960s by using modern agricultural techniques. Norman Borlaug is known as the 'father of green revolution'. He received Nobel Peace prize in 1970 for his work in developing HVYs (High Yielding Varieties) of wheat. During green revolution people across the world adopted newer methods of cultivation and moved towards the mechanization. Ford and Rockefeller foundation were involved in spreading green revolution across the globe.

## Background of green revolution in India

Before independence British government forced people of India to grow crops like cotton, indigo and poppy on major scale so that they can use them as a raw material in their industries. This led to frequent famines in different parts of India. Such rapacious commercialization of agriculture led to a food scarcity in India. Even after independence the situation could not get better, as the population of India was growing at a much faster rate than its food production.

After World War II high yielding varieties of wheat were discovered in Mexico. Due to which American states started producing surplus amount of wheat. Because of the over production and surplus amount of wheat they were producing, they wanted a market to sell their overproduced wheat. So US came up with a policy called 'Public Law 480 or PL 480'<sup>1</sup>. Under PL480 they went to many African and Asian countries to supply them with food grains. At that time Indian Govt. who was facing food shortage quickly agreed to implement PL480 in India. India started supplying this PL480 food aid to urban centers through public distribution system at low prices<sup>2</sup>. Because of the high demand for cheap imported wheat our own agricultural sector got ignored due to which there came stagnation in domestic wheat production. Amidst all this president of America Lyndon Johnson threatened to freeze PL480. They said America will continue PL480 only if India introduces modern farming techniques and works towards becoming self sufficient. India didn't have many options so India agrees to Americans demands.

In 1966, India purchased tons of HVY seeds, HVY seeds if given right amount of inputs like pesticides, chemical fertilizers and water they had the ability to produce more outputs than traditional seeds. So these seeds were provided to only those states in India which has a well developed irrigation system. In India green revolution i.e. introduction of HVY was done in Punjab, Haryana and Tamil Nadu. Initially govt. provided these HVY seeds, chemical fertilizers, water and electricity at a subsidized rates to the farmers, it was necessary because shifting from traditional cropping pattern to this new model of monoculture cropping posed great risk to farmers. Soon HVY of paddy also developed in Philippines and Indian govt. started distributing them to the farmers as well<sup>3</sup>.

Wheat and paddy cultivation had taken over the states of Punjab, Haryana and western Uttar Pradesh. India's food grain production increased and there was a drop in poverty, starvation and there was a rise in farmer's income. And all this somehow promoted capitalist farming.

With the adoption of modern technologies funded by US Ford and Rockefeller foundation, pesticides, insecticides and modern irrigation system were used at a large scale in agriculture in India. Crop area under HVYs of wheat and rice grew tremendously during green revolution. Green revolution created lots of jobs not only for the farmers but also for industrial workers as demand for various types of agricultural machinery increased during green revolution.

### Consequences of Green Revolution

Green revolution did bring short term economic gains in few states, but by the 1980s and 1990s economic situation changed<sup>4</sup>. Pests had developed resistance to pesticides due to which farmers had to spend more on purchasing new pesticides than his earnings.

With the entry of corporate sector in agricultural sector our traditional agricultural techniques were replaced by the modern ones. This corporatization and industrialization of agriculture has increased greediness and a competitive race in bigger and smaller farmers<sup>5</sup>. This exerted a negative pressure on poor farmers as they could not compete with the bigger farmers and many such poor farmers sold their lands and started working with the bigger farmers.

<sup>1</sup> Trent Brown,(2013). Sustainable Agriculture, Civil Society and Social Power in Rural India. University of Wollongong Thesis Collection 1954-2016.

<sup>2</sup> Why India needs to undo green revolution.<http://youtube.be/fzHGOvX6lkQ>

<sup>3</sup> Trent Brown,(2013). Sustainable Agriculture, civil society and social power in rural India. University of Wollongong Thesis Collection 1954-2016

<sup>4</sup> Trent Brown,(2013). Sustainable Agriculture, civil society and social power in rural India. University of Wollongong Thesis Collection 1954-2016

<sup>5</sup> Bala murli Balaji,(2015). Relevance of Gandhi: Service to humanity.

Green revolution mainly focused on the cultivation of wheat and rice, with this the other crops, cereals, pulses, oilseeds and other commercial crops were left out.

As green revolution was implemented in few states only it led to the regional disparities. States like Bihar, West Bengal, and Orissa which were water rich were neglected on the agricultural sector. Arid regions like North-Karnataka, Vidarbha parts of Gujarat and Madhya Pradesh were neglected. Therefore agriculture of entire India reduced to Punjab, Haryana and Western Uttar Pradesh. From 1960s major chunk of Union Government money has been spent on offering Minimum support price for crops of these states and then purchasing food grain for entire India through Food Cooperation of India. There was a large scale use of pesticides and chemical fertilizers besides the use of HVYs in some states. People were only seeing the high yields they could not see the risk factors associated with the usage of these pesticides and fertilizers. And no efforts were made to educate farmers about the risks of the intensive usage of these chemicals.

Each of these states where green revolution was at its peak, slowly started experiencing agrarian crisis. Regions that followed green revolution development started affected by many ecological issues, cost of chemical pesticides and fertilizers were increasing day by day, because of the excessive use of the chemicals soil salinity increased and fertility of the soil got depleted. Crops introduced during green revolution were water intensive crops which needed more water this led to the groundwater depletion. Water table in Punjab is at alarmingly low level<sup>6</sup>. Toxic chemicals in the soil destroyed the useful microbes of the earth which further declined the crop yields.

Excessive use of pesticides and fertilizers to increase crop yield has led to health hazards. Cancers and reproductive health issues in Punjab have become a matter of concern<sup>7</sup>. The levels of local unemployment and suicides by farmers and agricultural laborers have subsequently increased<sup>8</sup>

#### How Sarvodya Can Lead Us to Sustainable Farming

Sarvodya is a combination of two words sarv (all), uday (upliftment). It means welfare and progress of every individual of the society without any discrimination. Gandhi started this sarvodya movement; the basic fundamentals of sarvodya are liberty and equality.

Gandhi said that if for the sake of development we replace man by machine, it would inevitably destroy both man and environment.<sup>9</sup> This is what happened in green revolution we introduced machinery and chemicals in our agricultural system to full fill our greed which led to the present day situation.

Gandhi was aware about the ill effects of industrialization and unplanned urbanization, and how this mad rush can affect our sustainability. He looked for its alternative he found that if we develop our villages, make them economically strong and self sufficient units we can develop a sustainable agricultural system in future. But agriculture is no more a village economy these days our ancestral and traditional techniques have been replaced by modern techniques. Today most of the agricultural risks are artificially created and some are even politically motivated<sup>10</sup>.

Green revolutions should be made really green by making agriculture practiced according agro climatic zones. Food security should not be thought from national perspective but from local and regional perspective.

<sup>6</sup> Rodell, Velicogna & Famiglietti, (2009). Satellite- based estimates of groundwater depletion in India.

<sup>7</sup> Thakur *et al*, (2010). Adverse reproductive and child health outcomes among people living near highly toxic waste water drains in Punjab, India.

<sup>8</sup> Bharti, (2011). farmers suicide in West Bengal

<sup>9</sup> Ambarish Mukherji, (July 2022). Gandhi's Views on Environment: The Search for an Alternative.

<sup>10</sup> Balamurli Balaji, (2003). Social Innovation and Gandhian Model.

Reliance on three crops should widen to include coarse food grains and especially millets. This will add more nourishment to the food grains and help in tackling the problem of malnourishment. Crop rotation should be included in farming to revive earth's nutrients.

Agro-ecology the science of managing farms ecosystem should be applied in our farming techniques. By working with nature rather than against it, farms can avoid damaging environmental impacts without sacrificing productivity. By prioritizing science that addresses the interconnectedness of environmental, economic and social factors, we can create a truly sustainable system<sup>11</sup>.

Farmer owned seeds should be promoted and protected from the appropriation by the corporate. Farmer cooperatives and especially women farmer cooperative should be promoted. Panchayats should be made the first institution to promote, purchase and collect locally produced crops which could add to food security at the local level. Under the 11 schedule of Indian constitution the panchayats has been assigned agriculture (including agricultural extension improvement implementation of land reform, soil conservation, minor irrigation, water management, water shed development and animal husbandry, dairying, poultry, small scale industries and food processing) are some of the subjects that come under the purview of panchayat<sup>12</sup>.

Cattle farms should be established in local areas and their manure can be used for increasing soil fertility. There are many new entrepreneurs who are working to save indigenous species of seeds and cattle, their manure based products are being sold for a living. These farmers by performing true organic farming are challenging the chemical based agriculture and modern dairy and poultry industries. Indigenous seeds are being preserved by few farmers, they are spreading sustainability and financial independence among these farmers. Apart from health benefits they are economical for small farmers as the rate of germination of these indigenous seeds are very high. Preservation of indigenous seeds is the only way through which the country can achieve the self sufficiency in the agricultural market<sup>13</sup>. These farmers and entrepreneurs are presenting their alternative way of sustainable agriculture and animal farms which functions on the principles of empathy and sustainability. Beejom, peepal farm, karam marg charitable society are few such farms who are implementing Gandhiji's sarvodaya in true sense<sup>14</sup>.

<sup>11</sup> David N. Sundberg, (2022). What Is Sustainable agriculture.

<sup>12</sup> Vikas pedia, Hunger Free village, InDG, MeitY

<sup>13</sup> TV Kattimani, (2023). Preservation of indigenous seeds: A Step Towards Healthy and Sustainable India.

<sup>14</sup> <https://beejom.com>, <https://peepalfarm.org>