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Agriculture Challenges and Failing Technology

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Since the Green Revolution of 1966–67, more than 45 years have passed. Meanwhile, groundwater levels have plummeted in almost all intensive agricultural areas. Chemical fertilisers have begun to devastate the environment.

Pesticides have contaminated the atmosphere while still posing a significant health risk. Many new pesticide varieties are causing farmers to lose money. It's referred to as 'scientific fatigue' by agricultural scientists. It's possible that it's a good term for technological failure.

Consider the case of Punjab, which is known as the Green Revolution's stronghold. In terms of ground water level, 108 of the 138 blocks have already been designated as dark zones. The extent of groundwater extraction in these areas has surpassed the 80 percent danger mark, reaching 97 percent.

The more groundwater is tapped, the higher the cost of farming becomes. Farmers would have to drill deeper for water, raising the price of tubewells. Uttar Pradesh is in a similar precarious condition.

The Central Ground Water Board has established 22 blocks where over-exploitation has increased groundwater levels. In western Uttar Pradesh, 19 of these blocks are located. Every year, the crop of sugarcane farmers, who fill the sugarcane supply bonds with the mills, drank 240 cubic metres of water. This is about two-and-a-half times the amount of wheat and rice.

The land has become unproductive and barren as the groundwater level has dropped. According to the National Soil Survey and Land Use Planning Bureau, 120 million hectares of arable land in the country was degraded in some way, out of a total of 14.2 million hectares.

Out of the amount of land needed for the production of food grains, the Green Revolution has saved 580 lakh hectares. Today, forty years later, it is being revealed that we have doubled the land area in terms of environmental impact. It's normal to wonder if the agricultural technology we're using is incorrect. For years, we've been told that chemical fertiliser is critical to increasing crop yields.

In the beginning, chemical fertiliser increased yields, but at the same time, agricultural land became diseased and infertile. The environmental traces were evident, but the fields were staffed by fertiliser companies to increase the declining fertility of the fields. As if this wasn't bad enough, the risk of nitrate contamination of ground water is also rising. It has now been shown that to get the same crop as ten years ago, you must add twice as much fertiliser.

Farmers are being debt-trapped as a result of this. According to a recent report, there is a negative relationship between manure consumption and development. Crop yield is high in areas where fertiliser consumption is poor. It's unfortunate that fertiliser producers have never been told to pay attention to the soil's nutrient balance so that chemical elements don't build up.

Farmers spray pesticides on crops as well, which is an essential aspect of modern farming. Since dwarf species needing fertilisers were drawn to which pests were attracted, pesticides were sprayed on rice and other crops.

To ensure that the pesticides reached the intended goal, farmers were instructed to spray the crops with a spray machine equipped with pesticide-filled canes. These spray machines produce a number of tubes for various crop crops. Tractors are also sprayed for certain crops.

In the early 1980s, Cornell University's David Pimentel concluded that only 0.01 percent of insecticide enters the insect properly, while the rest is present in the environment. Despite this, farmers were told they needed to spray more.

A paper on proper pesticide usage was also published by the International Paddy Research Institute. The capacity of the pesticide is unaffected by the fact that it is sprayed with a machine or that the pesticides are positioned near the source of irrigation water, according to the report.

The current crisis affecting rural India is the product of immediate agricultural techniques that have little to do with social issues. Is there a need to assess whether the technology is beneficial to the farm sector, the evolving agro-environment, the environment, and, most importantly, the farming community? It's still time to revisit these methods and explore how to improve them.

The farmers have suffered greatly as a result of the propensity to adopt technologies imported from other countries without question. In reality, the allure of these costly techniques has stripped the farming community of its skin. The money left over from crop production is used to buy and maintain these incompatible techniques. This has exacerbated the agricultural crisis. There is a pressing need to advance Indian technology.