

Evergreen revolution in India

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Manifest pedagogy

Evergreen revolution is important issue which could be asked at mains stage. The topic should be analysed and understood from the perspective of food security, environmental sustainability, doubling farmer income, addressing agriculture distress etc. The topic should be prepared from both geographical and economics dimensions.

In news

Recently honourable Prime Minister Narendra Modi called for 'evergreen revolution' to meet some of the challenges faced in the agricultural sector.

Placing it in syllabus

Indian agriculture

Static dimensions

- Green revolution in India
- Demerits of green revolution
- Evergreen revolution

Current dimensions

- Evergreen Revolution and food security
- NITI Aayog's 3-year road map for 'evergreen revolution'

Content

"Civilisation as it is known today could not have evolved, nor can it survive, without an adequate food supply" – this quote by Norman Borlaug underlines the importance of agriculture for mankind.

Agriculture plays a pivotal role in Indian society. Although its share in the Gross Domestic Product (GDP) is about 19 per cent, agriculture and allied activities remain the major source of livelihood for about 60 percent of population. It's forward and backward linkage effects not only contribute to overall growth of the economy but can also reduce poverty and hunger by providing livelihood and food security.

Green revolution in India

Green Revolution refers to the great increase in production of food grains (such as rice and wheat) due to the introduction of high-yielding varieties, to the use of pesticides, and to better management techniques.

Green revolution was launched to achieve self- sufficiency in food grains. From 1960's major changes were made to the traditional agricultural practices. More land was brought under irrigation. Cooperative farming and farm mechanisation was introduced in North-India especially in Punjab, Haryana and Western UP. Usage of fertilisers, pesticides, high – yielding varieties of seeds was done.

Several policies of institutional support were introduced like subsidies for fertiliser and groundwater extraction, minimum support prices for food grains and procurement and public distribution of grains (mostly rice and wheat). This made India an exporter of food grains. India has now become the world's second largest producer of both wheat and rice and the largest exporter of rice.

Need for Evergreen revolution

Need for Evergreen revolution arose due to failures of green revolution. Important demerits of green revolution are

- More than five decades after India launched the Green Revolution, it has not only failed to eliminate hunger

but also malnutrition is at its high.

- Wheat and rice have largely displaced more nutritious pulses and other cereals such as millets in consumption.
- Soil has lost its fertility due to unscientific application of fertilisers.
- Due to mechanisation of agriculture, the likeliness for sons instead of daughters led to skewed sex ratio in Punjab, Haryana.
- Indian agriculture became cereal- centric and regionally biased.
- Water logging in fields and salinity increased due to excess irrigation.
- Farmers got burdened with debts from moneylenders, banks.

Dr M.S. Swaminathan, father of Green Revolution in India, had forewarned as early as in 1968 that “Intensive cultivation of land without conservation of soil fertility and soil structure would lead ultimately to the springing of deserts”.

Evergreen revolution in India

The Green Revolution transformed the image of India from being a ‘begging bowl’ to ‘bread basket’. However, to rectify flaws and loopholes of the Green Revolution we need to make it evergreen. Though India is now self-sufficient in many aspects of food production, it still relies on imports for crops such as pulses and oilseeds, where production has not kept pace with demand.

In the words of KR Narayanan, former President of India, ‘it can be converted into an **evergreen revolution** only if there is a paradigm shift in our research and development strategy, leading to a change from a purely commodity-centred approach to one based on an integrated natural resources management strategy’.

Evergreen revolution refers to productivity improvement in

perpetuity without ecological and social harm. The evergreen revolution involves the integration of ecological principles in technology development and dissemination.

Dr.M.S.Swaminathan coined the term ‘**Evergreen Revolution**’ to highlight the **pathway of increasing production and productivity in a manner such that short and long term goals of food production are not mutually antagonistic**. The logic is to produce more from less, less land, less pesticide, less water and it must be an evergreen revolution to get sustainable agriculture.

Introducing Indian farmers to innovative information and communication technologies (ICT) can enhance farm productivity. ICT initiatives can tackle key challenges in the agricultural value-chain through networking on weather alerts, the sowing period, the prices of produce. **e-kranti** , one of the pillars of Digital India campaign focuses on technology for farmers with real-time price information, online ordering of inputs, and payment with mobile banking.

According to the ICAR in the Dry Areas, drylands produce half the country's cereals, 77 per cent of its oilseeds and 85 per cent of its pulses. Implementation of new and efficient irrigation methods, better watershed management and maintenance of vegetation cover in catchment areas and development of drought-tolerant crop varieties is required to optimise water utilisation. More steps to promote ‘**lab to land**’ agriculture to increase farm productivity through developing good forward and backward linkages is the need of the hour.

GM food crops are also critical for enabling the success of evergreen revolution. These crops have been proven to significantly improve yield through high levels of disease and pest resistance, improved weed management, abiotic stress tolerance and nutrient-use efficient crops. Eg. Approval and promotion of Bt.Mustard help us to reduce the edible oil

imports and improve Indian economy as well as provide nutrition.

Evergreen Revolution and Food security in India

With increase in population, there is dire need to increase the food grain production at a rapid pace. The challenges lie in producing more and more in less and less resources. Only increased productivity which is ecologically sustainable can ensure higher production of food grains. Food security involves increase in food grain production and distribution which is accessible and affordable. Stagnation of food grain production is the biggest concern of recent time. Evergreen revolution is the need of the hour.

As Swaminathan has rightly outlined, what India needs now is an “evergreen revolution”. The problem of hunger is often equated to food shortfalls that can solely be mended with intensive crop production. For example, India is still reeling under the socioeconomic and ecological consequences that followed the Green Revolution. It is time to stop importing readymade solutions and consolidate local resources and skills to enhance food security. Achievement of food security should involve a healthy mix of improving technical competence coupled with stable food and agricultural policies as well as good governance to ensure stronger implementation. Reducing regional disparities, cross learning and knowledge sharing can also go a long way in improving food security.

NITI Aayog's 3-year road map for 'evergreen revolution'

In a more recent development, NITI Aayog unveiled a three-year roadmap (2017-20) intended to take farm growth to new heights. The roadmap for the next three years lists initiatives for the growth of farm sector and for ensuring that farmers' income doubles by 2022.

The new initiatives include use of cutting-edge technology to increase farm productivity, promotion of climate-resilient

indigenous breeds of cows and buffaloes, launch of a nationwide programme to harvest the advantages of space technology in agriculture and allied sectors, promotion of deep sea fishing, setting up of seed production and processing units at 'panchayat' level, increase of cropping intensity by 1 million hectares per year through the utilization of rice fallow areas for pulses and oil-seeds, and consolidation of online trading and inter-market transactions, among others.