# Crop Diversification in Trans-Gangetic Plain

## Why in news?

States like Punjab and Haryana are unable to get out from the paddy-wheat cycle.

## What is the status of agriculture in Punjab and Haryana?

- *Punjab is the food bowl of India*. With 1.53% of the country's area, it contributed 29% of rice and 38% of wheat in central food grains of the nation.
- Punjab is the *3rd largest farming crop producing state* in India. Currently 77 lakh acres of the agricultural land is under paddy cultivation in Punjab.



- *Haryana is regarded as the bread basket and rice bowl of India*, contributing 45% of rice and 65% of wheat to the central pool and more than 5% to total food production of the country.
- Haryana is self-sufficient in food production and the second largest contributor to India's central pool of food grains.

## Why paddy-wheat cycle is prevalent in Punjab and Haryana?

- **Green revolution-** It was initiated in *1967 by M.S.Swaminathan* to ensure food security in India. Both the states were successful.
- **Level of profits earned** – It is noted that no other crops were profitable like paddy and wheat which are profit maximisers for farmer.

  *In 2018-19 Paddy was purchased for Rs.75, 887 per hectare whereas gram was purchased for Rs.9, 175 per hectare.*

- **Stable income**- Unlike other states and other crops, Punjab's rice and wheat earn stable and reasonably rising incomes each year attributable to the government's ***Minimum Support Price (MSP)*.**
- **Lack of awareness-** The small and marginal farmers have inadequate knowledge about cultivating other crops which makes them difficult to find buyers for selling it in better prices.
- **Availability of services -** Availability of cheap power, water and easy access to information and services encourages farmers to undergo monoculture practice.

## Why is crop diversification so significant?

- **Increased productivity** - Crop diversification is a strategy applied to grow more

diverse crops from shrinking land resources with an increase in productivity in the same arable land.

- **Groundwater conservation** - Encouraging farmers to grow maize, bajra over water-guzzling crops like paddy will lead to groundwater conservation.
    - As per a recent UN report, in Punjab, the amount of groundwater withdrawn in certain regions frequently exceeds natural recharge rates.
- **Soil enrichment**- Crop diversification increases the soil health in the nutrient deficient rice and wheat regions.
- **Increase resource use efficiency-** Breaking the mono-cropping pattern by the introduction of diverse crops and cropping patterns helps in the resource-use efficiency.
- **Revival of traditional agriculture-** This method ensures crop diversity which is more stable and pro-nature.
- **Reduction of pest & diseases-** It helps effectively in pest and diseases management, reduces the quantity of weeds.
- **Reduction in crop failure -** It allows farmers to employ biological cycles to conserve the resource base and reduce the risk of crop failures.
- **Increased income -** It boosts the land use efficiency and enhance the net returns by reducing the input cost.
- **Food and nutrition security-** It has sound capacity for achieving the goal of nutritional security by widening the food basket like cultivating millets, cereals etc.,

## What are the challenges in crop diversification?

- **Lack of awareness -** Many farmers are unaware of the concept of crop diversification due to large scale illiteracy among them.
- **Lack of training -** Only few scientists are working for alternative crop research and there is a lack of trained human resources in crop diversification.
- **Poor government support-** Government encourages cultivation of rice and wheat as they would ensure food security.
- **Infrastructural deficit-** Lack of proper storage facilities, Post-harvest management and few food processing industries decrease the value chain.
- **Low investment-** Low investment in research and development actitvities to enhance crop diversification is another issue.
- **Monetary factor-** The level of compensation associated with other crops is less compared with Paddy and wheat

*In the Garhwal Himalayan region of India, Barahnaja is a crop diversification system for cultivating 12 crops in a year.*

## What steps were taken to promote crop diversification?

- **Johl Committee** - It recommended for shifting at least 20% of the net cropped area from dominant crops like paddy and wheat in Punjab to other crops.
- **Ashok Dalwai Committee (Committee on doubling the farmers' income) -** It

recommended shifting some areas from staple cereals to high-value produce so that it can lead to a sizable increase in the returns for farmers.

- **Crop Diversification Programme (2013-2014) -** It was launched by the Central Government as a sub-component under *Rashtriya Krishi Vikas Yojana (RKVY*) to diversify 5% of the paddy cultivation area in Uttar Pradesh, Haryana, and Punjab.
- **Punjab's scheme** - In the 2023 budget, the Punjab government allocated ₹1,000 crore for implementing a *special scheme on crop diversification.*
- **National Food Security Mission (NFSM) -** It is launched in 2013 to supplement the state government to enhance the diversified production of crops such as pulses, coarse cereals, and nutri cereals.
- **Mission for Integrated Development of Horticulture (MIDH)** - It is a scheme for holistic growth and development of Horticulture sector.
- It covers vegetables, fruits, roots and tuber crops, aromatic plants, flowers, spices, bamboo, coconut, cashew and cocoa.

## What lies ahead?

There is a need

    - To enhance the focus on research and development to work in alternative crop development like maize and soya bean.
    - To expand the investment in human resources.
- To create federations like 'Punjab Maize Federation' or 'Punjab Soya bean Federation' to institutionalise the development and progress of different alternative crops.
- To fill the gaps in the value chain by improving food processing industry, create favourable business environment like offer tax holidays etc.,

**References**


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