

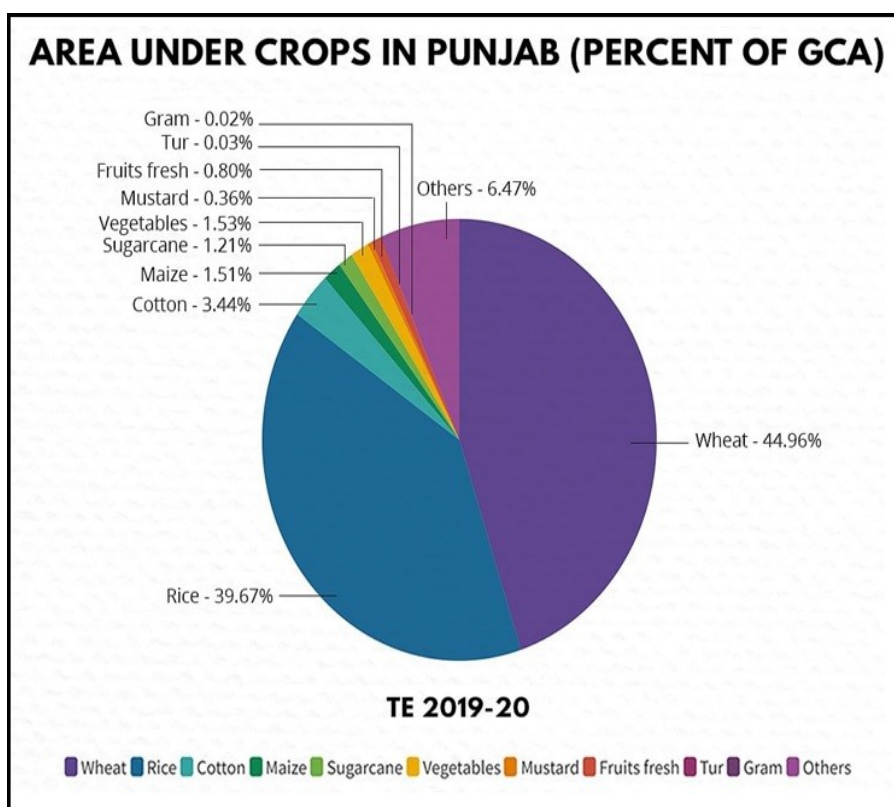
Crop Diversification in Trans-Gangetic Plain

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

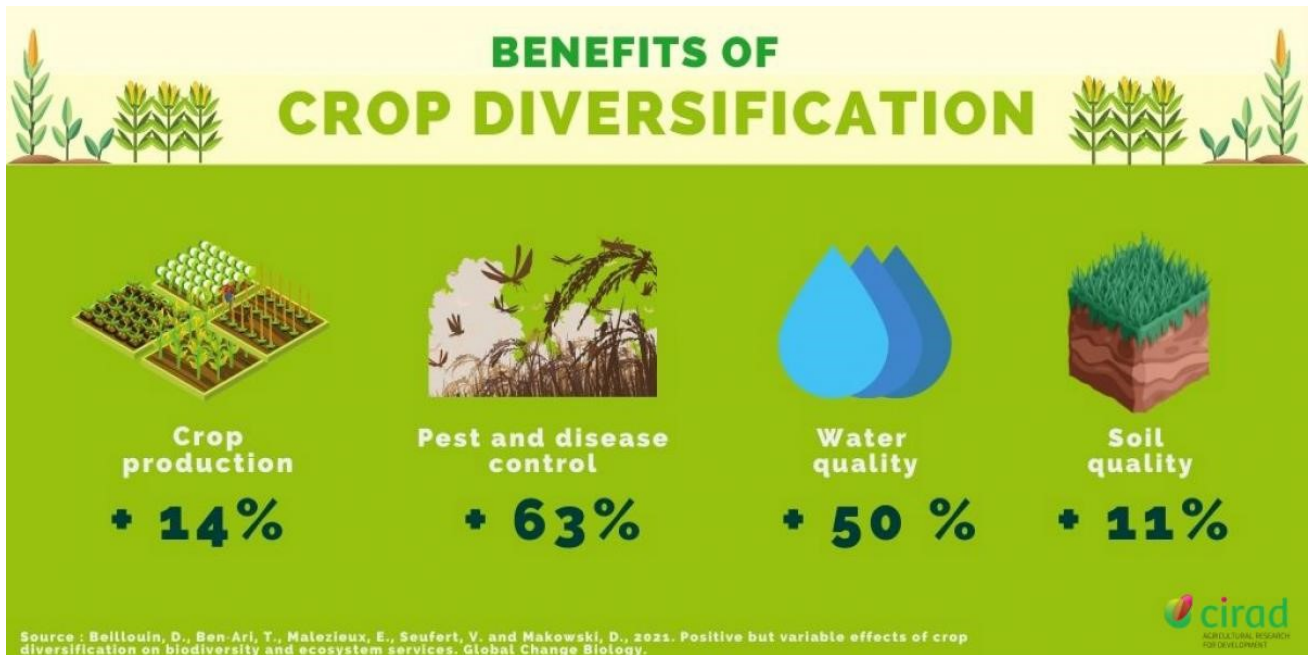
and wheat which are profit maximisers for farmer.

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 activities 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

1. [Business Line| Punjab crop diversification](#)
2. [Down to Earth| Punjab Haryana Paddy Wheat cycle](#)
3. [Down to Earth| Exploit Asia's Biodiversity to ensure food security](#)
4. [PIB| schemes on crop diversification](#)

