

Paddy-Wheat Monoculture in Punjab

What is the issue?

Questions are being raised on the sustainability of paddy-wheat cultivation, especially in Punjab.

What is the extent of paddy-wheat monoculture in Punjab?

Monoculture refers to the practice of cultivation of a single crop at a given area

- Paddy-wheat cultivation adds up to 84.6% of the total area planted to all crops in Punjab in 2018-19.
- The real acreage share increase has taken place in paddy from below 7% in 1970-71 to almost 40% in 2018-19.
- The above gains have been at the expense of other crops such as pulses ,maize, bajra, oilseeds, cotton, groundnut ,sugarcane ,etc.
- The only crops that have registered some acreage expansions are vegetables (especially potato and pea) and fruits (kinnow).

TABLE 1: CROP-WISE PERCENTAGE SHARE OF TOTAL PLANTED AREA IN PUNJAB

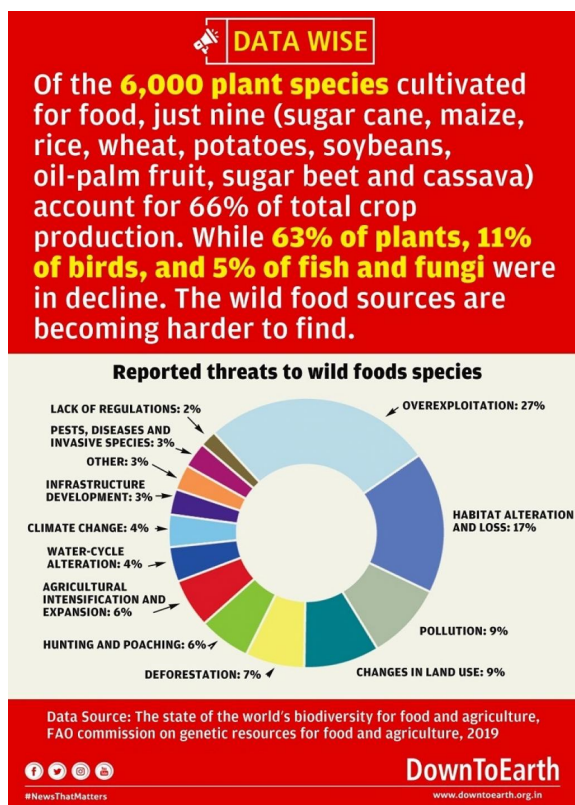
	1960-61	1970-71	1980-81	1990-91	2000-01	2018-19
Wheat	27.3	40.5	41.6	43.6	43.1	44.9
Paddy	4.8	6.9	17.5	26.9	31.3	39.6
Pulses	19.1	7.3	5.0	1.9	0.7	0.4
Cotton	9.4	7.0	9.6	9.3	7.6	5.1
Maize	6.9	9.8	5.6	2.5	2.1	1.4
Oilseeds	3.9	5.2	3.7	1.5	1.1	0.5
Bajra	2.7	3.7	1.0	0.2	0.1	0
Sugarcane	2.8	2.3	1.0	1.3	1.8	1.2
Barley	1.4	1.0	0.9	0.5	0.3	0.1
Vegetables	1.2	0.9	1.1	0.7	1.3	3.3
Fruits	0.6	0.6	0.4	0.8	0.5	1.1
Other crops	17.7	14.8	12.6	10.8	10.1	2.4

Source: Punjab Economic Survey 2019-20

What are the problems of monoculture?

- Increase in vulnerability to pest and disease attacks

- No nitrogen fixation unlike pulses and legumes
- Absence of crop rotation leads to depletion of soil nutrients
- Growing dependence on chemical fertilizers and pesticides
- Decline in water table since paddy is a water-guzzling crop where more than 30 irrigations are needed (5 irrigations for wheat)
- Punjab's groundwater table has been declining by 0.5 meters per annum on an average
- Soil salinity and waterlogging due to excess surface irrigation
- Nutrition insecurity because of lack of crop diversification
- Decrease in biodiversity
- Economically riskier for farmers



What measures have been taken so far?

- **Punjab Preservation of Subsoil Water Act in 2009**- bars any nursery-sowing and transplanting of paddy before May 15 and June 15, respectively
- But it pushes harvesting to October-end leaving little time for farmers contributing to stubble burning
- Minimum Support Prices (MSP) given to various crops incentivises crop diversification

How can the issues of monoculture be addressed?

- Limit Punjab's a non-basmati paddy area and ensure planting of only shorter-duration varieties
- Direct seeding of paddy can reduce the usage of inputs
- Water savings can be induced through metering of electricity
- Assured government price/per-acre incentive support must be provided for crops other than paddy and wheat
- Crop diversification, including rotation and intercropping and the use of diverse forage plants in pastureland must be promoted
- Prospective private buyers should be part of the extension effort
- But change is possible only if the State works closely with the Union Government

Source: The Indian Express, Businessline

