

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE AND FARMERS WELFARE
DEPARTMENT OF AGRICULTURAL RESEARCH & EDUCATION

LOK SABHA
UNSTARRED QUESTION NO. 2538
TO BE ANSWERED ON 04TH AUGUST, 2026

WHEAT MONOCULTURE AND SOIL DEGRADATION

2538. SMT. HARSIMRAT KAUR BADAL:

Will the Minister of AGRICULTURE AND FARMERS WELFARE कृषि और किसान कल्याण मंत्री be pleased to state:

- (a) whether the Government is aware that Punjab's decades-old rice wheat monoculture cycle has severely degraded soil health, reducing organic carbon levels, compacting soil, and lowering water holding capacity, as confirmed by a 2026 long-term study by Punjab agricultural scientists;
- (b) the current area under alternative crops (maize, basmati, pulses, oilseeds, fruits, and vegetables) in Punjab compared to the rice-wheat coverage, and the year-on-year change since 2022;
- (c) whether the existing crop diversification incentive of Rs.17,500 per acre for alternative crops is being fully paid to farmers in Punjab, and if any delays or shortfalls in payment have been reported; and
- (d) the specific measures being taken to restore soil health in Punjab, including promotion of green manuring, leguminous cover crops, zero-tillage, and micro-irrigation and the funds allocated for this purpose under the National and State budgets?

ANSWER

THE MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE
कृषि और किसान कल्याण राज्य मंत्री (SHRI BHAGIRATH CHOUDHARY)

(a): Yes. As per the long-term study conducted by Punjab Agricultural University, continuous rice–wheat monoculture has often been associated with concerns regarding soil degradation due to repeated puddling, intensive tillage, devoid of legumes or green manuring and monocropping. Puddling during transplanted rice disrupt soil aggregation, reduce porosity, and increase sub-surface compaction, which adversely affect soil physical health without appropriate management practices. However, these effects are largely reversible through scientifically recommended package of practices such as inclusion of legumes, crop rotation, balanced fertilizer application, integrated nutrient management, addition of organic manure and residue incorporation.

(b): The rice and wheat continue to dominate Punjab's agricultural landscape. Rice area in Punjab has shown a steady increase from 2,969 thousand hectares in 2021–22 to 3,268 thousand hectares in 2025–26, whereas wheat area has remained largely stable from 3,525 thousand hectares to 3,458.6 thousand hectares during the same period. Over the same period, the area under other field crops (maize, pulses and oilseeds) relative to the rice–wheat system declined from 8.6% to 6.2%, whereas the share of horticultural crops (fruits and vegetables) increased gradually from 6.3% to 7.2%, indicating a marginal shift towards horticultural diversification while the rice–wheat system continues to predominate. Crop-wise year-on-year area details are given in **Annexures I and II**.

(c): The Department of Agriculture and Farmers Welfare (DoAFW, GOI) is implementing the Crop Diversification Programme (CDP) with aim to demonstrate and promote improved production technologies of alternate crops for diversion of paddy cultivation as well as to restore soil fertility through cultivation of leguminous crops in the Original Green Revolution States viz; Haryana, Punjab & Uttar Pradesh since 2013-14. An amount of Rs. 13.52 crores is allocated to the state of Punjab during the financial year 2026-27 to promote crop diversification in convergence mode. Government of Punjab has fully paid Rs.10,000 per ha for Kharif Maize as per issued guidelines of CDP scheme.

(d): The Department of Agriculture and Farmers Welfare (DA&FW), Government of India, is implementing various schemes in Punjab, namely PM-PRANAM, National Mission on Natural Farming (NMNF), Soil Health Card (SHC) Scheme, Paramparagat Krishi Vikas Yojana (PKVY) and Per Drop More Crop (PDMC), for restoring soil health and promoting green manuring, leguminous cover crops, zero-tillage and micro-irrigation.

Complementing these initiatives, ICAR is undertaking research through the AICRP on Soil Test Crop Response (STCR), Long-Term Fertilizer Experiments (LTFEs), Micro and Secondary Nutrients, Agroforestry, Integrated Farming Systems (IFS), Irrigation Water Management, and the Network Project on Natural Farming (NPNF). Based on scientific evidence generated from these programmes, ICAR promotes soil test-based balanced fertilization, Integrated Nutrient Management (INM), green manuring, leguminous cover crops, conservation agriculture, zero-tillage and micro-irrigation. ICAR has also developed organic production packages for seven cropping systems, including basmati rice–wheat–sunhemp and kharif greengram–wheat–summer greengram, and identified maize (cobs/fodder)–potato–onion and baby corn–potato–okra as profitable alternatives to the rice–wheat system. These technologies are disseminated through capacity-building programmes and frontline demonstrations conducted by ICAR institutes and Krishi Vigyan Kendras (KVKs). ICAR has also developed the district wise General Fertilizer Recommendation (GFR) based on the soil test value and soil test crop response equation and shared with the state government.

Micro-irrigation is promoted under the Per Drop More Crop (PDMC) scheme of DA&FW, under which financial assistance of 55% of the unit cost for small and marginal farmers and 45% for other farmers is provided for installation of drip and sprinkler irrigation systems. The details of funds released and achievements under the PDMC scheme in Punjab are given in **Annexure III**.

[Part (b) of Lok Sabha USQ No. 2538 dated 4TH AUGUST, 2026]**Crop wise area in Punjab ('000 ha)**

Crop	Area				
	2021-22	2022-23	2023-24	2024-25	2025-26
Rice	2969.00	3098.15	3179.00	3243.30	3268.00
Wheat	3525.00	3534.74	3515.80	3512.00	3458.60
Maize	105.20	93.30	94.50	86.10	88.10
Barley	5.00	5.00	5.14	4.94	4.70
Bajra	1.20	0.60	0.70	1.10	1.20
Tur	1.40	1.20	1.20	1.20	1.00
Gram	1.80	1.30	1.42	1.24	2.50
Urad	1.60	1.30	1.30	1.32	1.00
Moong	54.10	24.80	70.85	32.95	29.00
Lentil	0.50	0.50	0.41	0.37	0.10
Other Pulses	3.20	3.20	0.10	0.20	0.90
Total Pulses	62.60	32.30	75.28	37.28	34.50
Total Food Grains	6668.00	6764.09	6870.42	6884.72	6855.10
Groundnut	1.40	1.70	1.60	1.60	2.10
Sesamum	2.90	2.10	1.90	1.32	0.40
Rapeseed & Mustard	43.90	54.00	43.10	42.10	53.20
Total Oil Seeds	49.50	59.30	47.50	46.22	56.90
Sugarcane	86.80	90.30	90.20	88.72	88.40
Cotton	251.30	248.90	213.80	160.40	141.80

Source: DoAFW

ANNEXURE-II**[Part (b) of Lok Sabha USQ No. 2538 dated 4TH AUGUST, 2026]**

Area of Fruits and Vegetables in Punjab during 2020-21 to 2025-26 (Second Advance Estimates)			
Area in '000 Ha			
Sl. No.	Years	Fruits	Vegetables
		Area	Area
1	2021-22	106.43	300.40
2	2022-23	109.88	316.58
3	2023-24	113.83	334.47
4	2024-25	118.41	350.57
5	2025-26 (Second Advance Estimates)	120.64	366.54

[Part (d) of Lok Sabha USQ No. 2538 dated 4TH AUGUST, 2026]

The status of fund released by DoAFW and achievement of PDMC in Punjab

Year	Central Assistance released (Rs in Crore)	Area covered under Micro Irrigation (in Ha)
2015-16	43.00	1799
2016-17	1.18	1950
2017-18	0.00	600
2018-19	9.00	507
2019-20	0.00	942
2020-21	0.00	742
2021-22	0.00	3719
2022-23	3.75	3039
2023-24	6.00	2864
2024-25	5.50	3185
2025-26	7.81	3045
2026-27 (so far)	3.90	
Total	80.14	22392
