

AGRICULTURAL YIELD LOSSES DUE TO HUMAN-INDUCED LAND DEGRADATION

प्रविष्टि तिथि: 07 AUG 2026 6:13PM by PIB Delhi

Government has not undertaken any assessment on agricultural land affected by degradation and its impact on crop productivity. However, as per Desertification and Land Degradation Atlas of India (2021) published by the Space Applications Centre (ISRO), an area of 6.38 lakh ha is manmade desertification and land degradation in the country as on 2018–19. The State wise details, including the State of Maharashtra, are given in Annexure.

The Government has taken various measures to promote soil restoration, sustainable land management, water conservation and climate resilient agriculture to improve agricultural productivity, as given below:

- i. Indian Council of Agricultural Research (ICAR) reported that, to promote soil restoration and sustainable land management, it has developed and recommended location-specific technologies such as contour cultivation, intercropping, crop rotation, conservation agriculture, mulching, green manuring, reduced tillage, agroforestry etc. For the management of salt-affected soils, ICAR recommends gypsum application, bio-drainage, subsurface drainage, salt-tolerant crop varieties and bio-reclamation measures, including salt-tolerant grasses. ICAR has also developed General Fertilizer Recommendations (GFR) and Soil Test Crop Response (STCR)-based recommendations, which have been shared with the States to promote soil test-based balanced nutrient application, improve soil fertility, enhance soil organic carbon and increase nutrient-use efficiency. For water conservation, ICAR promotes integrated watershed management through bio-engineering measures, contour and graded bunds, stone bunds, contour and staggered trenches, bench terraces, check dams and water harvesting structures such as farm ponds and community ponds.
- ii. Further, The Government through, Indian Council of Agricultural Research (ICAR) is implementing a project- National Innovations in Climate Resilient Agriculture (NICRA) in 651 districts that studies the impact of climate change on agriculture and conducts district level risk & vulnerability assessment due to climate change. Out of the 310 districts identified as vulnerable to climate change, 201 have been categorized as 'High' climate-vulnerable and 109 as 'Very High' climate-vulnerable. District Agriculture Contingency Plans (DACPs) for these 651 districts have also been prepared to address weather aberrations and recommending location specific climate resilient crops and varieties and management practices. To enhance resilience to climate variability, location-specific climate-resilient technologies, including the System of Rice Intensification (SRI), aerobic rice, direct-seeded rice and in-situ crop residue management, are being demonstrated for adoption by farmers. Under NICRA, climate-resilient technologies are being demonstrated in 448 Climate Resilient Villages across 151 vulnerable districts in 28 States/UTs, supported by village-level seed banks and community nurseries to enhance farmers' resilience and ensure timely availability of quality seeds. Technical assistance is provided to small and marginal farmers through Village Climate Risk Management Committees (VCRMCs), while training programmes are conducted under the Agricultural Technology Management Agency (ATMA). Further, ICAR has released 2900

varieties during last 10 years (2014-2024), out of which 2661 varieties are tolerant to one or more biotic and/or abiotic stresses.

- iii. The Government is implementing various programmes to promote sustainable and climate-resilient agricultural practices to reverse yield losses and improve agricultural productivity. Per Drop More Crop scheme is implemented to promote water use efficiency at the farm level through Micro Irrigation technologies i.e. drip and sprinkler irrigation systems. Rainfed Area Development scheme is implemented to promote Integrated Farming System for enhancing productivity and minimizing risks associated with climatic variability. The Soil Health and Fertility scheme assists states in promoting Integrated Nutrient Management through judicious use of fertilizers. The Government is also promoting organic farming through Paramparagat Krishi Vikas Yojana and natural farming through National Mission on Natural Farming scheme. “Mission for Aatmanirbharta in Pulses”, National Mission on Edible Oils – Oilseeds, and National Food Security & Nutrition Mission promotes crop diversification. Mission for Integrated Development of Horticulture, Agroforestry & National Bamboo Mission also promote climate resilience in agriculture. Further, Pradhan Mantri Fasal Bima Yojana along with weather index based Restructured Weather Based Crop Insurance Scheme provides a comprehensive insurance cover against failure of the crops, thereby helping compensate farmers for losses caused by natural calamities and climate-related risks.
- iv. Under Viksit Bharat – Guarantee for Rozgar and Aajeevika Mission – Gramin (VB-G RAM-G), water conservation activities are prioritised through Natural Resource Management (NRM) works. These constitutes 110 works out of 318 permissible works under the programme that improves water security and conservation. Further, the Watershed Management (WM) Division of the Department of Land Resources (DoLR) implements the Watershed Development Component of the Pradhan Mantri Krishi Sinchayee Yojana (WDC-PMKSY) for the development of rainfed and degraded lands across the country. The activities undertaken, inter alia, include ridge area treatment, drainage line treatment, soil and moisture conservation, rainwater harvesting, nursery raising, pasture development, and livelihood support for asset-less persons. Through these interventions, WDC-PMKSY seeks to promote sustainable development by improving natural resource management and enhancing the resilience of farmers to climate change.

Despite the challenges posed by biotic and abiotic stresses, the agriculture sector has recorded sustained growth in crop productivity and overall agricultural production over the last decade. Food grain production has increased from 252.03 million tonnes in 2014–15 to a record 357.73 million tonnes in 2024–25, while horticulture production has increased from 280.98 million tonnes in 2014–15 to 370.73 million tonnes in 2024–25, reflecting the resilience and steady growth of agricultural production across the country.

Annexure

State wise Status of Desertification and Land Degradation

Sl. No.	State/UT	Total Area under land Degradation (in ha)
1	Andhra Pradesh	2,378,042
2	Arunachal Pradesh	200,683
3	Assam	834,530

4	Bihar	746,586
5	Chhattisgarh	2,306,531
6	Delhi	91,543
7	Goa	194,877
8	Gujarat	10,248,057
9	Haryana	364,154
10	Himachal Pradesh	2,400,300
11	Jammu & Kashmir	1,129,503
12	Jharkhand	5,482,260
13	Karnataka	6,959,847
14	Kerala	422,299
15	Ladakh	7,111,968
16	Madhya Pradesh	3,859,735
17	Maharashtra	14,306,029
18	Manipur	612,566
19	Meghalaya	557,576
20	Mizoram	275,827
21	Nagaland	828,943
22	Odisha	5,359,014
23	Punjab	167,989
24	Rajasthan	21,237,669
25	Sikkim	84,610

26	Tamil Nadu	1,599,981
27	Telangana	3,638,508
28	Tripura	447,378
29	Uttar Pradesh	1,549,608
30	Uttarakhand	673,894
31	West Bengal	1,784,345
Total		97,854,851

This information was given by the Minister of State for Agriculture and Farmers Welfare **SHRI RAMNATH THAKUR** in a written reply in Rajya Sabha today.

RC/MS

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