

Initiatives to Strengthen Seed Sector

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Government has taken several measures to strengthen India's seed sector and enhance its global competitiveness, which include the following:

The Government, through the National Agricultural Research and Education System (NARES), comprising 56 ICAR Institutes, 48 State Agricultural Universities (SAUs), 03 Central Agricultural Universities (CAUs) and 39 centres under the All India Coordinated Research Project (AICRP) on Seed (Crops), is undertaking research and development of improved crop varieties. During the period from 2014 to 2025, a total of **3,236 field crop varieties** have been released and notified, of which **2,996 are climate-resilient varieties**, including **587 extreme climate-tolerant varieties** comprising 341 drought tolerant, 89 flood tolerant, 80 salinity tolerant, 59 heat stress tolerant and 18 cold tolerant varieties.

The crop-wise details are as under:

S. No.	Crop Group	Crop Varieties	Climate-resilient Varieties
1	Cereals	1,574	1,453
2	Oilseeds	444	397
3	Pulses	473	446
4	Forages	207	185
5	Fibre	408	392
6	Sugarcane	96	96
7	Other Crops	34	27
	Total	3,236	2,996

The Government promotes the production and multiplication of breeder, foundation and certified seeds of high-yielding and climate-resilient varieties, including varieties tolerant to drought, heat, flood, salinity and waterlogging, to ensure timely availability of quality seeds suited to diverse agro-climatic conditions across the country.

During the past three years, the Protection of Plant Varieties and Farmers' Rights (PPV&FR) Authority has expedited registration of plant varieties, thereby enabling farmers, ICAR Institutes, State Agricultural Universities and private seed companies to protect the varieties developed by them. So far, **10,802 varieties of 219 crop species** have been registered under the PPV&FR Act, out of which **5,689 varieties** were registered during 2023–26.

The Government has established an extensive institutional framework for production and distribution of quality seeds. At present, **229 Seed Hubs** and **384 Breeder Seed Production Centres** are engaged in seed production. Further, 17 State Seed Corporations and National Seeds Corporation Limited, along with national public sector organizations such as Bharatiya Beej Sahakari Samiti Limited (BBSSL), Hindustan Insecticides Limited (HIL), National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED), National Fertilizers Limited (NFL), KrishakBharati Cooperative Limited (KRIBHCO), Indian Farm Forestry Development Cooperative Limited (IFFDC) and private seed companies contribute significantly to the production and distribution of quality seeds across the country.

To strengthen quality assurance, **178 notified Seed Testing Laboratories (STLs)** are engaged in seed testing across the country. The Government also provides financial assistance for strengthening Seed Testing Laboratories, including support for International Seed Testing Association (ISTA) membership and technical audits for ISTA accreditation.

Seed quality is regulated under the Seeds Act, 1966, the Seeds Rules, 1968 and the Seeds (Control) Order, 1983, as amended from time to time. These statutory provisions empower the State Governments to regulate seed quality, undertake inspections, testing and enforcement, and curb the sale of sub-standard and spurious seeds. To support the regulatory framework, a **Seed Authentication, Traceability and Holistic Inventory (SATHI)** Portal has been deployed in phased manner to facilitate end-to-end digital traceability in seed production, certification, inventory management and distribution, thereby enhancing transparency and quality assurance across the seed value chain.

To facilitate international trade and improve ease of doing business, the Government has simplified procedures relating to the import and export of seeds and planting material. Following the disbanding of the EXIM Committee in October, 2024, import and export approvals are being facilitated through DGFT's digital platforms while continuing to ensure compliance with applicable plant quarantine and regulatory requirements. The Government also promotes seed exports through participation in the Organisation for Economic Co-operation and Development (OECD) Seed Schemes, International Seed Testing Association (ISTA) framework and National Accreditation Board for Testing and Calibration Laboratories (NABL) accreditation of Seed Testing Laboratories to align India's seed quality systems with internationally accepted standards.

The details of seed imports and exports during the last three years are as under:

Year	Import Qty. (000 MT)	Import Value (₹ crore)	Export Qty. (000 MT)	Export Value (₹ crore)
2024-25	27.69	1,561.22	92.06	2,323.39
2025-26	31.84	1,755.96	123.82	3,023.16
2026-27 (upto May 2026)	4.43	357.36	18.46	582.19

India is a founding member of the **International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)**, which provides a multilateral framework for conservation, sustainable use and exchange of plant genetic resources for food and agriculture and promotes equitable sharing of benefits arising from their use. This provides domestic R&D sector access to global germplasm to help them in developing improved varieties of seeds.

The Government also collaborates with international agricultural research institutions of the CGIAR system, including the **International Rice Research Institute (IRRI)**, **International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)**, **International Maize and Wheat Improvement Center (CIMMYT)**, **International Center for Agricultural Research in the Dry Areas (ICARDA)** and the **Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT)** for exchange of knowledge and identification of suitable climate-resilient seed technologies and best practices. With Government support, the International Rice Research Institute established its South Asia Regional Centre (ISARC) at Varanasi in 2018 for collaborative rice research and capacity building. Further, establishment of the International Potato Center (CIP) South Asia Regional Centre (CSARC) at Singna, Agra, Uttar Pradesh was approved on 25.06.2025.

Government has undertaken several initiatives to promote Public-Private Partnerships (PPP) in the seed sector by facilitating collaboration among ICAR Institutes, State Agricultural Universities (SAUs), State Seed Corporations, National Seeds Corporation (NSC) and private seed companies for seed multiplication, varietal evaluation, breeder-to-certified seed chain management, technology dissemination and licensing of publicly bred varieties and hybrids to private seed companies for large-scale multiplication and distribution, thereby leveraging private sector expertise, investment and outreach.

During the last three years (2023–24 to 2025–26), **1,317 licensing agreements** for seeds, crop varieties and planting materials were executed by **27 ICAR Institutes** with public and private sector organizations.

Further, the Agriculture Infrastructure Fund (AIF) provides financial support for creation of agriculture infrastructure, including seed processing facilities.

Government also provides financial assistance to States and implementing agencies for seed-related activities such as production and distribution of high-yielding varieties, development of seed infrastructure, seed processing, storage and testing facilities under various programmes including the National Food Security Nutrition Mission (NFSNM), National Mission on Edible Oils–Oilseeds (NMEO–Oilseeds), Mission for Aatmanirbharta in Pulses, Rashtriya Krishi Vikas Yojana (RKVY), National Mission on High Yielding Seeds (NMHYS) and Mission for Cotton Productivity. These initiatives also support research and innovation in modern crop improvement technologies, including genome editing, molecular breeding, biofortification, agrobiodiversity and establishment of a Global R&D Hub for Millets.

To address the challenges posed by climate change and strengthen national food security, the Government promotes the development and adoption of high-yielding, climate-resilient and bio-fortified crop varieties through the National Agricultural Research and Education System (NARES). ICAR Institutes and the private sector are using advanced crop improvement technologies such as Marker-Assisted Selection (MAS), Gene Editing and Speed Breeding to accelerate the development of improved crop varieties.

The Government also promotes production and dissemination of these varieties through the breeder, foundation and certified seed chain and collaborates with international agricultural research institutions of the CGIAR system for exchange of knowledge, germplasm, best practices and climate-resilient seed technologies. During the period from 2014 to 2025, **2,996 climate-resilient crop varieties** have been

developed by the National Agricultural Research and Education System (NARES), thereby strengthening the resilience of Indian agriculture to climate change while contributing to enhanced agricultural productivity and national food security.

This information was given by Minister of State for Agriculture and Farmers Welfare, Shri Ramnath Thakur in a written reply in Lok Sabha today.

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