

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

RAJYA SABHA
UNSTARRED QUESTION NO-2274

ANSWERED ON- 07/08/2026

ICAR SUPPORTED RESEARCH AND INNOVATION PROJECTS IN UTTAR PRADESH

2274. SMT. SANGEETA YADAV:

Will the Minister of AGRICULTURE AND FARMERS WELFARE be pleased to state:

- (a) the district-wise details of Indian Council of Agricultural Research (ICAR) supported research and innovation projects undertaken through Krishi Vigyan Kendras (KVKs) in Uttar Pradesh (UP) especially Gorakhpur and Devipatan Mandals during the last three years;
- (b) the technologies validated and scaled up for local agro-climatic conditions;
- (c) the impact on productivity, climate resilience and diversification;
- (d) whether Gorakhpur and Devipatan Mandals/region-specific research on flood- and drought-resilient agriculture is done, if not, the reasons therefor; and
- (e) the future roadmap, including financial support and institutional strengthening, for these Mandals?

ANSWER

THE MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE
(SHRI BHAGIRATH CHOUDHARY)

(a): The Indian Council of Agricultural Research, through its Institutes, State Agricultural Universities, Krishi Vigyan Kendras etc. undertakes agricultural research, technology development and extension activities. In the Gorakhpur and Devipatan Mandals of Uttar Pradesh, 11 Krishi Vigyan Kendras are functioning to promote the dissemination and adoption of improved agricultural technologies among farmers.

During the last three years, these KVKs have conducted 19,060 Frontline Demonstrations (FLDs), trained 62,711 farmers including farm women and rural youth, produced 10,681.71 quintals of quality seed of improved field crop varieties and 25.37 lakh planting materials of horticultural crops. The interventions have focused on climate resilient and conservation agriculture practices, improved varieties, integrated nutrient/pest/weed/disease management, farm mechanization, livestock and fisheries.

The district-wise details of major ICAR-supported research and innovation projects implemented through KVKs in Gorakhpur and Devipatan Mandals are at **Annexure-I**.

In addition to above, ICAR has supported the following research and innovation initiatives in Uttar Pradesh through KVK network:

- National Innovations on Climate Resilient Agriculture for Enhance resilience of farming systems to climate change
- National Mission on Natural Farming (NMNF)/Natural Farming Demonstrations for Promoting sustainable and low-input agriculture
- Crop Diversification and Integrated Farming Systems- Improve farm income and sustainability
- Frontline Demonstrations (FLDs)- Demonstrate newly released crop varieties and technologies
- On-Farm Testing (OFTs)- Assess location-specific suitability of technologies
- Soil Health and Resource Conservation Projects- Improve soil fertility and efficient resource use
- Fermented Organic Manure (FOM) and Liquid Fermented Organic Manure (LFOM)
- CRM (Crop Residue Management) for resources conservation
- National mission of pulses
- National mission of edible oil
- Organizing training-cum-input distribution programmes

The ICAR-AICRP on Spices and on Medicinal and Aromatic Plants & Betelvine at Acharya Narendra Deva University of Agriculture and Technology, Kumarganj, Ayodhya, implemented research, training and demonstration programmes for spice-based and medicinal plants-based farming systems in Uttar Pradesh for Improved production technologies of turmeric, ginger and seed spices; integrated crop management; organic production; quality planting material; value addition; post-harvest management, protection technologies of basil and opium poppy.

Under the Technology Demonstration Component of ICAR-National Innovations on Climate Resilient Agriculture, location-specific climate resilient technologies are being demonstrated through Krishi Vigyan Kendras in 151 climatically vulnerable districts across the country. In Uttar Pradesh, the programme is under implementation in 17 climatically vulnerable districts. The district-wise details are at **Annexure-II**.

Further ICAR, through its crop-based institutes and the National Agricultural Research and Education System (NARES), has developed 749 field crop varieties suitable for Uttar Pradesh during 2014-2025, including 18 flood/submergence/water logging/deep water tolerant and 61 drought tolerant /moisture stress tolerant /water stress tolerant /water limited/low rainfall resistant varieties.

To ensure availability of quality seed, 09 centres under the All India Coordinated Research Project on Seed (Crops) in Uttar Pradesh produced 9,271.8 quintals of breeder seed against an indent of 5,038.5 quintals and 84,880 quintals of quality seed during the last three years.

During the last three years 5297.2 quintals of breeder seed was produced against an indent of 4678.3 quintals for climate resilient field crop varieties. During the same period, 12017.4 quintals of quality seed of climate resilient field crop varieties were produced and distributed to farmers.

(b): ICAR, through its Institutes, All India Coordinated Research Projects (AICRPs) and Krishi Vigyan Kendras (KVKs), has developed, validated and promoted a wide range of location-specific technologies suited to the agro-climatic conditions of Uttar Pradesh, including Gorakhpur and Devipatan Mandals. These technologies are assessed through On-Farm Testing (OFTs) and demonstrated through Frontline Demonstrations (FLDs) before being scaled up for adoption by farmers. The major technologies validated and promoted are at **Annexure-III**.

- (c): The impact on productivity, climate resilience and diversification was observed as following points:
- Variety Samba Sub-1 has the advantage over Swarna Sub-1 25-30 % higher yield, 30% to 60% higher profitability and can withstand submergence upto 15 days.
 - NDR 2064 rice variety: 16 % higher yield, NDR 2065 rice varieties: 45% higher yield over traditional varieties.
 - Direct seeded rice technology: Productivity enhancement of 22% and profitability enhancement of 50-60%.
 - Crop diversification through replacement of wheat by mustard and lentil recorded Rs. 45,675 and Rs. 42,693/ha higher net return over existing rice-wheat cropping system 30-40% higher profitability.
 - Crop diversification of rice-wheat with radish-potato-cowpea or radish-vegetable pea-okra. Radish was grown after draining out of water from the field in September. Further, toria was introduced in rice fallows
 - Zero Till wheat increased productivity by 11-15%
 - Trash mulching in sugarcane: enhanced productivity by 11-20 %
 - Raised bed planting: enhanced productivity by 30-35%
 - Increased crop and livestock productivity through adoption of improved varieties, scientific production practices, and integrated nutrient and pest management.
 - Higher input-use efficiency (water, fertilizers, feed, and labour).
 - Reduced production costs through efficient mechanization and resource management.
 - 13% yield increase through Super seeder at farmers' field at Kushinagar of Gorakhpur Mandal
 - 43% yield increase through Ridge bed sowing at farmers' field at Kushinagar of Gorakhpur Mandal.
 - 21-26% milk yield increase through livestock interventions at Kushinagar of Gorakhpur Mandal.

Attracting and Retaining Youth in Agriculture (ARYA): Adoption of agri-enterprises by rural youth in Deoria and Kushinagar KVKs of Gorakhpur Mandal generated an average monthly income of ₹22,000–26,000 through mushroom cultivation, ₹12,000–15,000 through beekeeping, ₹34,000–38,000 through commercial goat farming and ₹14,000–15,000 through poultry farming.

Natural Farming: Adoption of natural farming practices in Deoria and Kushinagar KVKs of Gorakhpur Mandal resulted in about 30% reduction in input costs and production of quality, chemical-free agricultural produce.

Cluster Front Line Demonstrations (CFLDs) on Oilseeds and Pulses: Adoption of improved varieties and recommended production technologies resulted in 15-18% increase in crop yield in Deoria and Kushinagar KVKs of Gorakhpur Mandal.

National Extension Programme (NEP): Demonstration of improved crop varieties and production technologies resulted in 12-16% increase in crop yield in Deoria KVK of Gorakhpur Mandal.

Agricultural Mechanization: Adoption of improved farm mechanization technologies contributed to 13-20% increase in crop yield; 5-20% increase in cropping intensity and reduction in labour by 20-25%.

(d): Yes.

(e): The financial support and institutional strengthening for these Mandals during the last three years is at **Annexure-IV**.

[Part (a) of Rajya Sabha USQ No. 2274 dated 07/08/2026]

District-wise details of major ICAR-supported research and innovation projects implemented through KVKs in Gorakhpur and Devipatan Mandals:

District	Major ICAR-supported research and innovation programmes implemented through KVKs
Gorakhpur	National Innovations on Climate Resilient Agriculture (NICRA); National Mission on Natural Farming (NMNF); Cluster Front Line Demonstrations (CFLDs) on Pulses & Oilseeds; Nutri-Sensitive Agricultural Resources and Innovation (NARI).
Deoria	National Mission on Natural Farming (NMNF); Cluster Front Line Demonstrations (CFLDs) on Pulses & Oilseeds, Pulses & Oilseed Seed Hub Programme.
Kushinagar	National Innovations on Climate Resilient Agriculture (NICRA); National Mission on Natural Farming (NMNF); Cluster Front Line Demonstrations (CFLDs) on Pulses & Oilseeds; Nutri-Sensitive Agricultural Resources and Innovation (NARI).
Maharajganj	National Mission on Natural Farming (NMNF); Cluster Front Line Demonstrations (CFLDs) on Pulses & Oilseeds.
Gonda	National Mission on Natural Farming (NMNF); Cluster Front Line Demonstrations (CFLDs) on Pulses & Oilseeds; Nutri-Sensitive Agricultural Resources and Innovation (NARI)
Bahraich	National Innovations on Climate Resilient Agriculture (NICRA); National Mission on Natural Farming (NMNF); Cluster Front Line Demonstrations (CFLDs) on Pulses & Oilseeds; Nutri-Sensitive Agricultural Resources and Innovation (NARI).
Balrampur	National Innovations on Climate Resilient Agriculture (NICRA); National Mission on Natural Farming (NMNF); Cluster Front Line Demonstrations (CFLDs) on Pulses & Oilseeds
Shravasti	National Mission on Natural Farming (NMNF); Cluster Front Line Demonstrations (CFLDs) on Pulses & Oilseeds.

In addition, District Agro-Met Units (DAMUs)/Gramin Krishi Mausam Sewa (GKMS), National Extension Programme (NEP), Agri-Drone Demonstrations, Scheduled Caste Sub-Plan (SCSP), On-Farm Testing (OFTs), Frontline Demonstrations (FLDs), farmer capacity-building programmes and technology dissemination activities are implemented through selected KVKs in Uttar Pradesh, including Gorakhpur and Devipatan Mandals.

[Part (a) of Rajya Sabha USQ No. 2274 dated 07/08/2026]

List of 17 Climatically Vulnerable Districts Covered under the Technology Demonstration Component of NICRA

State	District	Risk	Vulnerability
Uttar Pradesh	Jalaun	Very High	High drought proneness
	Jhansi	Very High	Heat and Drought
	Hamirpur	Very High	High drought proneness
	Chitrakoot	Very High	Heat and Drought
	Banda	Very High	High drought proneness
	Bhadohi	Very High	Heat and Drought
	Bahraich	Very High	High flood
	Basti	Very High	High drought proneness
	Baghpat	Very High	High drought proneness
	Sonbhadra	High	Heat and Drought
	Kaushambi	Very High	High drought proneness / Sodacity
	Pratapgarh	High	High drought proneness / Sodacity
	Kanpur Dehat	Very High	High drought proneness / Sodacity
	Gonda	Very High	High flood proneness
	Kushinagar	High	High flood proneness
	Gorakhpur	High	High flood proneness
	Mahrajganj	High	High flood proneness

Technologies validated and scaled up for local agro-climatic conditions:**(i) Technologies validated under the National Innovations on Climate Resilient Agriculture (NICRA):**

- Laser land levelling for uniform irrigation water application and improved water-use efficiency.
- Construction of check dams, desilting of drainage channels, and groundwater recharge of open dug wells for rainwater harvesting, supplemental irrigation, groundwater recharge, and flood drainage.
- Micro-irrigation systems for efficient utilization of harvested water and enhanced water productivity.
- Submergence-tolerant rice varieties (Samba Sub-1 and Swarna Sub-1) and direct-seeded rice (DSR) with submergence-tolerant cultivars to minimize flood damage.
- Short-duration drought-tolerant rice varieties (Sahbhagi Dhan, Shusk Samrat, NDR-97, NDR-2064, NDR-2065 and NDR-3112) for drought-prone and delayed monsoon conditions.
- In-situ incorporation of rice residues to improve soil health and facilitate timely sowing of succeeding crops.
- Zero-tillage wheat using heat-tolerant varieties (HD-2967, HD-3059, HD-3086, DBW-173, DBW-187, Raj-4120, PBW-373, K-7903, RH-749, K-9533 and K-9162) for timely sowing and reduced heat stress.
- Salt-tolerant rice varieties (CSR-36, CSR-43 and CSR-46) for sodic and salt-affected soils.
- Salt-tolerant wheat varieties (KRL-210 and KRL-213), barley (NDB-943), and mustard (CS-58 and CS-60) for improving productivity in salt-affected regions.
- Soil amelioration in sodic soils through CSR-BIO, Halo Azo, Halo PSB cultures, and gypsum application.
- Crop diversification with high-value vegetables, oilseeds, and pulses to enhance farm income and cropping system sustainability.
- Drought-tolerant and short-duration pulse and oilseed varieties, including:
 - ❖ Chickpea (JG-14, GNG-1581, KGD-1168, KWR-108)
 - ❖ Pigeonpea (NA-1, NA-2, NDA-2 and NDA-3)
 - ❖ Blackgram (Azad Urd-2, Azad Urd-3 and Shekhar-2)
 - ❖ Greengram (SML-668, IPM-2-3, PDM-139 and Samrat)
 - ❖ Sesame (Shekhar and Pragati)
 - ❖ Lentil (DPL-62, KLB-320, K-75, NDL-1, PL-5 and PL-8)
 - ❖ Mustard (Rohini, Varuna and PM-26)

- Intercropping systems (Sugarcane + Wheat, Sugarcane + Mustard, and Sugarcane + Potato) for cropping intensification and enhanced system productivity.
- Improved fodder production systems using perennial and seasonal fodder varieties, including Hybrid Napier (NB-21), Makkhan grass (NS-07), Berseem (Vardan), Sorghum (HC-136), Cowpea (BL-2), Oat (JHO-822), and Maize (African Tall) for year-round fodder availability.
- Livestock improvement and climate-resilient management, including breed upgradation of Sirohi and Jakhrana goats, area-specific mineral mixture supplementation after deworming, and improved livestock shelters to reduce heat stress and improve milk and meat production.
- Fish farming using harvested water (Grass Carp, Catla, Rohu and Mrigal) to diversify livelihoods and enhance farm income.
- Backyard poultry and other integrated farming enterprises to improve livelihood resilience and income diversification.

(ii) Technologies developed by ICAR-Indian Institute of Vegetable Research (IIVR), Varanasi and AICRP on Vegetable Crops:

- Direct Seeded Rice, Zero Tillage Sowing of Wheat, Ridge bed sowing, green manuring, sowing by super seeder- 510 ha. approx. in selected KVKs of Gorakhpur mandal.
- Crop Production & Diversification: (Flood and terminal heat stress, short duration resistant/Improved varieties in vegetable crops like cowpea, pea, radish, palak, tomato etc, developed by ICAR-IIVR, Varanasi)- 835 ha. approx. in selected KVKs of Gorakhpur mandal.
- Livestock: (Deworming and supplementation of mineral mixture, Improved varieties of green fodder, Improved breed of goat- Barbari) - 700 approx. in selected KVKs of Gorakhpur mandal.
- Management of repeat breeding in dairy animals. 300 approx. in selected KVKs of Gorakhpur mandal
- Management of Peri-parturient problems in dairy animals. 150 approx. in Deoria KVK of Gorakhpur mandal
- Vegetable based cropping system (Rice-potato-Spring season vegetables) promoted in more than 600 ha. approx. in selected KVKs of Gorakhpur mandal.
- Establishment of Nutritional Garden for enhancing food security with help of planned Nutri-Garden and using High Yielding Nutrient rich Vegetables. 150 approx. in Deoria & Kushinagar KVKs of Gorakhpur mandal.

(iii) Technologies promoted under the Attracting and Retaining Youth in Agriculture (ARYA) programme:

- Mushroom cultivation: 78 entrepreneurs developed in Deoria & Kushinagar KVKs of Gorakhpur mandal.

- Beekeeping (Apiculture): 56 entrepreneurs developed in Deoria & Kushinagar KVKs of Gorakhpur mandal.
- Commercial goat farming: 112 entrepreneurs developed in Deoria & Kushinagar KVKs of Gorakhpur mandal.
- Commercial Poultry farming: 32 entrepreneurs developed in Deoria & Kushinagar KVKs of Gorakhpur mandal.

(iv) Technologies demonstrated under Natural Farming:

Developed one Demo unit at KVK and 3 at farmer's field by selected KVKs across Gorakhpur and Devipatan Divisions.

(v) Technologies demonstrated under Cluster Front Line Demonstrations (CFLDs):

CFLD on Oilseed demonstrated with improved/climate resilient variety and good agronomic practices in 300 ha and Pulses in 100 ha. in Deoria & Kushinagar of Gorakhpur mandal.

(vi) Technologies developed under the National Extension Programme (NEP):

Climate resilient variety of rice (Rice var. Pusa 2090 & Pusa 1824) high yielding variety of wheat (Wheat var. HD 3406 & HD 3271) and biofortified variety of mustard (Pusa Mustard 32) were demonstrated among the farmers in Gorakhpur mandal.

(vii) Technologies developed by the AICRP on Medicinal & Aromatic Plants and Betelvine:

- Developed a technology for the management of Alternaria leaf spot and soil-borne disease (Macrophomina phaseolina) in sweet basil.
- Developed an Integrated Disease Management (IDM) module for the management of downy mildew and collar rot in opium poppy.
- Developed a technology for the management of leaf spot disease in opium poppy.
- Developed Integrated Disease Management (IDM) modules for disease management in aloe and basil.

(viii) Technologies developed under the AICRP on Spices:

- Improved turmeric varieties (Narendra Haldi-4 and Narendra Haldi-5).
- Good Agricultural Practices (GAP) in turmeric and coriander; cropping-system research (fennel-vegetable intercropping).
- Water-efficient technologies- micro-irrigation and fertigation, micronutrient management in fennel, and fenugreek.

- Bio-inputs, including plant growth-promoting rhizobacteria (PGPR) for turmeric.

(ix) Technologies validated through KVK system:

- High-yielding and climate-resilient crop varieties.
- Crop diversification and intercropping system
- Integrated Nutrient Management (INM), Integrated Pest Management (IPM) and Integrated Weed Management (IWM).
- Soil test-based fertilizer recommendation and conservation agriculture (mulching & moisture conservation).
- Scientific dairy management, fodder production & conservation, artificial insemination, balanced feeding, deworming and vaccination.
- Scientific management of goat, sheep, backyard poultry and piggery.

(x) Farm mechanization technologies developed under All India Coordinated Research Project on Farm Implements and Machinery:

- Zero Till Seed Drill for wheat establishment after rice.
- Happy Seeder, Smart seeder and Super Seeder for crop residue management.
- Raised Bed Planter.
- Multi-crop Seed-cum-Fertilizer Drill.
- Direct Seeded Rice (DSR) Seed Drill.
- Power Weeders and Cono Weeders.
- Laser Land Leveller.
- Precision Planters for maize and pulses.
- Reaper, Reaper Binder and Multi-crop Thresher.
- Crop residue management machinery such as Straw Reaper, Mulcher and Shredder.
- Small farm mechanization equipment for marginal and small farmers.
- Machinery suitable for sugarcane cultivation.

[Part (e) of Rajya Sabha USQ No. 2274 dated 07/08/2026]

Details of Financial support and institutional strengthening during the last three years

KVK	2023-24		2024-25		2025-26	
	Release	Expenditure	Release	Expenditure	Release	Expenditure
ATARI Kanpur	11,13,050	11,02,972	9,99,000	9,99,000	5,70,000	5,58,114
Baghpat	9,28,000	9,26,653	11,30,000	11,26,483	10,95,000	7,00,820
Bahraich (Devipatan)	9,28,000	8,68,178	13,66,000	12,45,179	9,35,000	6,74,779
Chitrakoot	13,28,000	13,22,048	29,74,500	29,01,257	12,46,500	12,56,084
Gonda (Devipatan)	11,28,000	11,28,000	23,80,000	23,80,000	14,88,000	14,88,000
Gorakhpur	9,28,000	8,97,886	11,70,000	11,47,317	9,95,000	7,37,960
Hamirpur_UP	9,28,000	9,27,426	14,28,000	12,94,329	9,80,000	9,71,637
Jhansi	10,28,000	10,28,000	15,86,000	14,75,253	9,51,500	9,49,406
Kushinagar	9,28,000	8,80,899	12,41,000	10,27,201	8,10,000	8,58,014
Maharajganj	9,28,000	9,24,116	12,06,000	11,36,632	9,85,000	9,30,711
Pratapgarh	11,28,000	11,28,000	29,44,000	29,44,000	16,65,000	16,65,000
Banda	9,28,000	9,22,116	14,83,000	14,70,967	11,05,000	10,77,023
Sant Ravidas Nagar	9,28,000	6,90,819	6,68,000	6,63,376	7,60,000	7,55,452
Basti	9,29,000	9,07,910	14,32,000	11,05,833	9,97,500	9,67,964
Jalaun	9,29,000		11,95,000	11,53,751	11,85,000	11,68,148
Kanpur Dehat (Rural)	9,29,000	9,28,108	11,16,000	10,79,016	11,81,500	11,15,440
Kaushambi	26,00,000	26,00,000	19,28,000	19,28,000	13,50,000	13,49,990
Sonbhadra	22,00,000	15,04,490	6,82,000	4,99,092	7,00,000	5,18,615
Total	2,07,36,050	1,96,15,993	2,69,28,500	2,55,76,686	1,90,00,000	1,77,43,157
