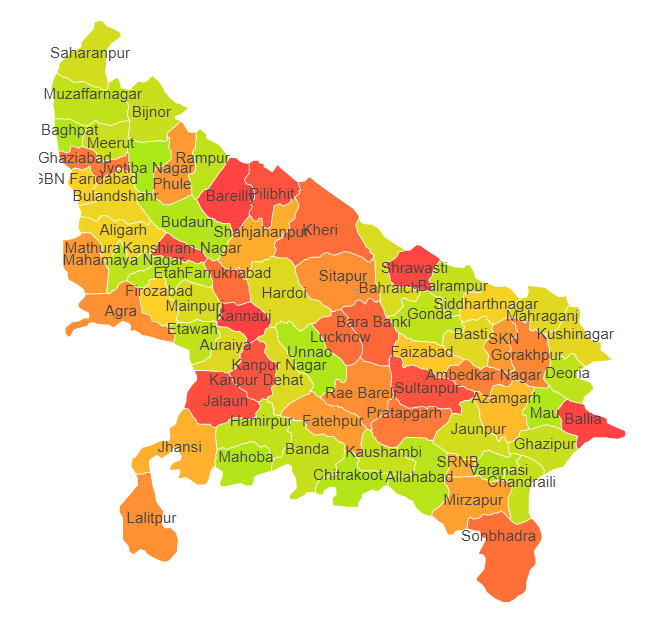
**Uttar Pradesh**

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Uttar Pradesh comprises of four Agro Ecological Regions (AER) 4,9,11 & 13.

**Agro-Eco Region 4:** AER 4 in Uttar Pradesh comprises of Agra, Aligarh, Allahabad, Amethi, Auraiya, Baghpat, Banda, Badaun, Bulandsahar, Chitrakoot, Etah, Etawah, Fatehpur, Farrukhabad, Firozabad, Gautambudhnagar, Ghaziabad, Jyotibaphule Nagar, Mahamayanagar, Mainpuri, Mathura, Meerut, Muzafarnagar, Kanshiramnagar, Moradabad, Hardoi, Jalaun, Jaunpur, Kannauj, Kanpur, Kanpur Dehat, Kaushambi, Pratapgarh, Santravidasnagar, Shahjahanpur, Unnao, Varanasi, Raibeareli, Lucknow, Mahoba , Hamirpur, Jhansi and Lalitpur districts of Northern Plain and Central highlands including Aravallis under Agro Ecological Sub Regions (AESR) 4.1, 4.3 & 4.4.

**Agro-Eco Region 9:** AER 9 in Uttar Pradesh comprises of Amethi, Ambedkarnagar, Azamgarh, Ballia, Barabanki, Bareilly, Bijnor, Chandauli, Faizabad, Gazipur, Hardoi , Jyotibaphule Nagar, Jaunpur, Kheri, Lucknow, Mau, Muzafarnagar, Moradabad, Pilhibhit, Rampur, Sharanpur, Shahjahanpur, Sitapur, Sultanpur and Varanasi districts of Northern Plain under Agro Ecological Sub Regions (AESR) 9.1 & 9.2.

**Agro-Eco Region 11:** AER 11 in Uttar Pradesh comprises of Mirzapur, Sonbhadra and Varanasi districts of Eastern Plateau (Chhattisgarh) under Agro Ecological Sub Regions (AESR) 11.

**Agro-Eco Region 13:** AER 13 in Uttar Pradesh comprises of Ambedkar nagar, Bahraich, Balrampur, Basti, Deoria, Gonda, Gorakhpur, Kheri, Kushinagar, Maharajganj, Santkabirnagar, Shrawasti and Siddharthnagar districts of Eastern Plateau (Chhattisgarh) under Agro Ecological Sub Regions (AESR) 13.1 & 13.2.

**Major NRM issues :**

**AESR 4.1:** The region is hot semi-arid ESR with deep loamy alluvium-derived soils (occasional saline and sodic phases), medium AWC and LGP 90-120 days in a year.

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| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Agra | Exclusively water erosion | Low in OC, Soil deficient in N, P, Zn, Fe & Mn | Saline GW Contaminated with F & NO3 | Highly prone to Drought |
| Aligarh | Exclusively water erosion | Low in OC, Soil deficient in N, P & B | Saline GW Contaminated with F & NO3 | **-** |
| Baghpat | **-** | Low in OC, Soil deficient in N, P, Zn & S | GW Contaminated with NO3 | **-** |
| Bulandsahar | Exclusively water erosion | Low in OC, Soil deficient in N, P, Zn, Fe & S | GW Contaminated with F & NO3 | Moderately prone to Drought |
| Etah | Exclusively water erosion & Exclusively sodic soils | Low in OC, Soil deficient in N & P | GW Contaminated with F & NO3 | Moderately prone to Drought |
| Firozabad | Exclusively water erosion | Low in OC, Soil deficient in N, P, Zn & B | Saline GW Contaminated with F & NO3 | **-** |
| Gautambudhnagar | **-** | Low in OC, Soil deficient in N & P | - | **-** |
| Ghaziabad | Exclusively water erosion | Low in OC, Soil deficient in N, P, Zn, Mn & S | GW Contaminated with F, NO3 & heavy metals | Moderately prone to Flood & Drought |
| Jyotibaphule Nagar | Exclusively water erosion | **-** | GW Contaminated with NO3 | **-** |
| Kanshiramnagar | Exclusively water erosion | **-** | Saline GW Contaminated with F & NO3 | Highly prone to Flood & Drought |
| Mahamayanagar | Exclusively water erosion | Low in OC, Soil deficient in N & P | - | **-** |
| Mainpuri | Exclusively water erosion | Low in OC, Soil deficient in N, P, Fe & B | GW Contaminated with F | Moderately prone to Drought |
| Mathura | Exclusively water erosion | Low in OC, Soil deficient in N, P & S | Saline GW Contaminated with F, NO3 & heavy metals | **-** |
| Meerut | Exclusively water erosion | Low in OC, Soil deficient in N, P & Fe | GW Contaminated with NO3 & As | **-** |
| Moradabad | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with NO3, As & heavy metals | **-** |
| Muzafarnagar | Exclusively water erosion | Low in OC, Soil deficient in N, P & S | GW Contaminated with NO3 & heavy metals | **-** |

**AESR 4.3:** The region is hot moist semi-arid ESR with deep, loamy alluvium-derived soils (sodic phase inclusion), medium to high AWC and LGP 120-150 days in a year.

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| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Allahabad | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F & NO3 | **-** |
| Amethi | Exclusively water erosion | Low in OC, Soil deficient in N, P, Fe, Cu, B & S | - | **-** |
| Auraiya | Exclusively sodic soils | Low in OC, Soil deficient in N, P & B | GW Contaminated with F & NO3 | Highly prone to Flood & Drought |
| Badaun | Exclusively water erosion | Low in OC, Soil deficient in N, P, Fe & S | - | **-** |
| Etawah | Exclusively water erosion | Low in OC, Soil deficient in N, P & B | GW Contaminated with F & Fe | Moderately prone to Drought |
| Farrukhabad | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F | Moderately prone to Drought |
| Fatehpur | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & Fe | Moderately prone to Drought |
| Hardoi | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & Fe | Highly prone to Drought |
| Jalaun | Exclusively water erosion | Low in OC, Soil deficient in N, P, Zn & Fe | - | Very highly prone to Drought |
| Jaunpur | Exclusively water erosion & Eroded sodic soils | Low in OC, Soil deficient in N, P, Zn, Fe, B & S | GW Contaminated with F, NO3 & heavy metals | Moderately prone to Drought |
| Kannauj | Exclusively water erosion | Low in OC, Soil deficient in N, P, Fe & S | GW Contaminated with F & NO3 | **-** |
| Kanpur | Exclusively water erosion | Low in OC, Soil deficient in N & P | Saline GW Contaminated with F, NO3, Fe & heavy metals | Moderately prone to Drought |
| Kanpur Dehat | Exclusively water erosion | Low in OC, Soil deficient in N, P & S | Saline GW Contaminated with NO3 , Fe & heavy metals | **-** |
| Kaushambi | Exclusively water erosion | Low in OC, Soil deficient in N & P | Saline GW Contaminated with NO3 & As | Moderately prone to Drought |
| Lucknow | Exclusively water erosion, salinity & sodicity. | Low in OC, Soil deficient in N & P | - | **-** |
| Pratapgarh | Exclusively water erosion & Eroded sodic soils | Low in OC, Soil deficient in N & P | GW Contaminated with F | Moderately prone to Drought |
| Raibeareli | Exclusively water erosion | Low in OC, Soil deficient in N, P & S | Saline GW Contaminated with F, NO3 & heavy metals | **-** |
| Santravidasnagar | Exclusively water erosion | Low in OC, Soil deficient in N, P & S | GW Contaminated with NO3 & As | **-** |
| Shahjahanpur | Exclusively water erosion | Low in OC, Soil deficient in N , P , K & S | GW Contaminated with F, NO3 & As | **-** |
| Unnao | Exclusively water erosion, salinity & sodicity. | Low in OC, Soil deficient in N, P & B | GW Contaminated with F, NO3, As, Fe & heavy metals | Moderately prone to Drought |
| Varanasi | Exclusively water erosion | Low in OC, Soil deficient in N, P, Fe, Mn & S | GW Contaminated with F, NO3 & heavy metals | **-** |

**AESR 4.4:** The region is hot moist semi-arid ESR with Deep loamy and clayey mixed Red and Black soils, medium to high AWC and LGP 90-120 days in a year.

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| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Banda | Exclusively water erosion | Low in OC, Soil deficient in N, P, Fe, Mn & B | GW Contaminated with F & NO3 | Moderately prone to Drought |
| Chitrakoot | Exclusively water erosion | Low in OC, Soil deficient in N, P,, Zn, Fe & B | GW Contaminated with NO3 | **-** |
| Hamirpur | Exclusively water erosion | Low in OC, Soil deficient in N, P & B | Saline GW Contaminated with F & NO3 | Moderately prone to Flood & Drought |
| Jhansi | Exclusively water erosion | Low in OC, Soil deficient in N, P & Fe | Saline GW Contaminated with NO3 & As | Highly prone to Drought |
| Lalitpur | Exclusively water erosion | Low in OC, Soil deficient in N, P, Zn & S | GW Contaminated with F,NO3 & Fe | **-** |
| Mahoba | Exclusively water erosion | Low in OC, Soil deficient in N, P, Zn, Fe, Mn, B & S | GW Contaminated with F & NO3 | Moderately prone to Drought |

**AESR 9.1:** The region is hot dry/moist subhumid transitional ESR with deep, loamy to clayey alluvium-derived (inclusion of saline and sodic phases) soils, medium AWC and LGP 120-150 days in a year.

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| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Bijnor | Exclusively water erosion | Low in OC, Soil deficient in N, P, Fe & B | GW Contaminated with NO3 & As | Very highly prone to Drought |
| Jyotibaphule Nagar | Exclusively water erosion |  | GW Contaminated with NO3 & As | **-** |
| Moradabad | Exclusively water erosion | Low in OC, Soil deficient in N, P & S | GW Contaminated with NO3, As & heavy metals | **-** |
| Muzafarnagar | Exclusively water erosion | Low in OC, Soil deficient in N, P & K | GW Contaminated with NO3 & heavy metals | **-** |
| Sharanpur | Exclusively water erosion | Low in OC, Soil deficient in N, P & K | GW Contaminated with NO3 | **-** |

**AESR 9.2:** The region is hot dry subhumid ESR with deep loamy alluvium-derived soils, medium to high AWC and LGP 150-180 days in a year.

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| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Ambedkar nagar | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 | **-** |
| Amethi | **-** | Low in OC, Soil deficient in N & P | - |  |
| Azamgarh | Exclusively water erosion, sodicity. | Low in OC, Soil deficient in N & P | GW Contaminated with NO3, As & Fe | Moderately prone to Flood & Drought |
| Ballia | Exclusively water erosion, salinity & sodicity. | Low in OC, Soil deficient in N & P | GW Contaminated with NO3, As & Fe | Moderately prone to Flood & Drought |
| Barabanki | Exclusively water erosion | Low in OC, Soil deficient in N , P & K | GW Contaminated with NO3 | Highly prone to Flood |
| Bareilly | **-** | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3  & As | **-** |
| Chandauli | Exclusively water erosion & Water erosion under open forest | Low in OC, Soil deficient in N & P | GW Contaminated with F & As | **-** |
| Faizabad | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & Fe | **-** |
| Gazipur | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & heavy metals | **-** |
| Hardoi | Exclusively water erosion | Low in OC, Soil deficient in N & P | - | Highly prone to Drought |
| Jaunpur | Exclusively water erosion, Exclusively sodic soils & Eroded sodic soils | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 | Moderately prone to Drought |
| Kheri | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 & Fe | **-** |
| Lucknow | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with As | **-** |
| Mau | Exclusively water erosion | Low in OC, Soil deficient in N & P | - | Moderately prone to Drought |
| Pilhibhit | Exclusively water erosion | Low in OC, Soil deficient in N , P & K | GW Contaminated with F, NO3 & As | Highly prone to Flood & Drought |
| Rampur | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F & NO3 | **-** |
| Shahjahanpur | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F & NO3 | **-** |
| Sitapur | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & heavy metals | **-** |
| Sultanpur | Exclusively water erosion & Eroded sodic soils | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & Fe | **-** |
| Varanasi | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & heavy metals | **-** |

**AESR 11:** The region is hot moist/dry subhumid transitional ESR with deep loamy lto clayey Red and Yellow soils, medium AWC and LGP 150-180 days in a year.

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| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Mirzapur | Exclusively water erosion & Water erosion under open forest | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 & As | **-** |
| Sonbhadra | Exclusively water erosion & Water erosion under open forest | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & heavy metals | **-** |
| Varanasi | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & heavy metals | **-** |

**AESR 13.1:** The region is hot dry to moist subhumid transitional ESR with deep, loamy alluvium-derived soils, low to medium AWC and LGP 180-210 days in a year.

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| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Ambedkarnagar | Exclusively water erosion |  | GW Contaminated with NO3 | **-** |
| Bahraich | Exclusively water erosion | Low in OC, Soil deficient in N , P & K | GW Contaminated with As | Moderately prone to flood |
| Balrampur | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with NO3, As & Fe | **-** |
| Basti | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 &As | **-** |
| Deoria | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with As | **-** |
| Gonda | Exclusively water erosion | Low in OC, Soil deficient in N, P & K | GW Contaminated with F, As & Fe | **-** |
| Gorakhpur | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with As | Moderately prone to Flood |
| Kushinagar | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with As | Highly prone to Flood & Drought |
| Maharajganj | Exclusively water erosion | Low in OC, Soil deficient in N & P | - | **-** |
| Santkabirnagar | Exclusively water erosion | Low in OC & Soil deficient in N | - | **-** |
| Shrawasti | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 | **-** |
| Siddharthnagar | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 , As & Fe | **-** |

**AESR 13.2:** The region is warm to hot moist subhumid ESR with deep loamy to clayey Tarai soils, high AWC and LGP 180-210 days in a year.

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| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Bahraich | Exclusively water erosion | Low in OC, Soil deficient in N ,P & K | GW Contaminated with As | Moderately prone to Flood |
| Balrampur | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 , As & Fe | **-** |
| Kheri | Exclusively water erosion | Low in OC, Soil deficient in N & P | - | **-** |
| Maharajganj | Exclusively water erosion | Low in OC, Soil deficient in N & P | - | **-** |
| Shrawasti | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 | **-** |
| Siddharthnagar | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 , As & Fe | **-** |

**Organization and Establishments for Technology Backstopping**

***ICAR Research Institutes:***

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| Indian Institute of Farming Systems Research, Modipuram | <https://iifsr.icar.gov.in/icar-iifsr/> |
| [Central Institute of Sub Tropical Horticulture, Lucknow](http://www.cish.res.in) | <https://cish.icar.gov.in/> |
| [ICAR-Indian Institute of Pulses Research, Kanpur](https://iipr.icar.gov.in/) | https://iipr.icar.gov.in |
| [ICAR-Indian Institute of Sugarcane Research, Lucknow](https://iisr.icar.gov.in/iisr/) | [https://iisr.icar.gov.in](https://iisr.icar.gov.in ) |
| [ICAR-Indian Institute of Vegetable Research, Varanasi](https://iivr.icar.gov.in/) | <https://iivr.icar.gov.in> |
| [Central Agroforestry Research Institute , Jhansi](http://www.cafri.res.in/) | <https://cafri.res.in> |
| Regional station of Cen[tral Soil Salinity Research Institute, Lucknow](https://cssri.res.in/) | <https://cssri.res.in/lucknow-rrs/> |
| KVK Portal | <https://kvk.icar.gov.in/> |

***SAUs/CAUs:***

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| [Chandra Shekhar Azad University of Agricultural & Technology, Kanpur](http://csauk.ac.in/) | <https://csauk.ac.in> |
| [Narendra Deva University of Agriculture & Technology, Faizabad](http://www.nduat.org/) | <https://www.nduat.org> |
| [Sardar Vallabhbhai Patel University of Agriculture & Technology, Meerut](http://www.svbpmeerut.ac.in/) | <http://www.svpuat.edu.in> |
| [Banda University of Agricultural and Technology, Banda](http://buat.edu.in/) | <https://buat.edu.in> |
| [Rani Laxmi Bai Central Agricultural University,Jhansi, Uttar Pradesh](http://www.rlbcau.ac.in/) | <https://www.rlbcau.ac.in> |

***List of KVKs:*** <https://icar.org.in/content/uttar-pradesh>

***List of Soil testing Laboratories****:* <https://farmer.gov.in/STLDetails.aspx?State=9>